Research Title

Investigation of the Relationship between Innovation Index and Media

By

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Contents

Abstract

This research is to test a hypothesis that, there is a relationship between innovation index and media. Both the traditional media and electronic media are functioning as interaction of learning which facilitates and bring innovative communication ways to the world. Innovation plays a crucial role in the competitiveness, development, and the economic growth of a country. It involves the creation of new knowledge through learning and this new knowledge is always formed by the combination of old insights.

Media including broad mobile technology, and the traditional forms such as newspapers, radio etc enables widely reach to the real-world practice. Perkins & Globerson (1991) defined that, "*Media as an interaction between cognitive processes and characteristics of the environment...*" Global innovation index is a formal model which responded to innovation challenges and applied to the worldwide context. Meanwhile, It is provided as a very useful tool to help business leaders and policymakers to identify challenges, to improve competitiveness and innovation (Dutta, S, INSEAD, & Caulkin, S., 2007; Dutta, S. & INSEAD, 2009).

The research started with a thorough literature search. The existing GII scores were recalculated to ensure innovation index is independent from any variables related to media before investigate the relationship of innovation index and media. Data about media constituents of the 20 countries, and develops relevant models to relate innovation index to media measures in these countries.

Results showed that most of the predictors have relationship with new innovation index, except Broadcast media. Some of the predictors do not have strong relationship with the new innovation index but have significant relationship with other predictors, especially Search Engine (Google), and Video Upload on YouTube. Therefore, this report concluded that based on result of the sample, in year 2011, and 2012 the variation in the new innovation index may be explained by the some of the media predictors.

Acknowledgments

Firstly, I am glad to pursuit my master degree at Ritsumeikan Asia Pacific University. Nothing is easy because all are processes of life. Nothing is tough because had gone through the hardness. The life is invaluable because experiences and learning. People are hope, hope are people. I would like to say thank you to everyone in my life.

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Thirdly, I wish to thank Professor DUTTA Soumitra and researcher from INSEAD Madam Daniela Benavente. Their prompt response to my questions about score calculation with weight was really big assistance to me. Thanks for their time and kindness assistances.

Fourthly, I say thank you to my friends and classmates, especially Yee Chea who help me read my first draft about 1 year ago; Paul who gave opinion for my research proposal; and Michael who shared his understanding about Statistics, SPSS, and book. The greeting and encouragement from friends and colleagues around the world keep me continue my way.

Finally, the most important and should say thank you to my dearest parents and family members. Their patient and trust always give me freedom and courage to pursuit the way I believed. Best wishes to everyone!

Certification/ Declaration

I hereby declare that the research presented is work done originally through studies, advice, feedbacks from my supervisor, classmates, and inspiration.

This research paper is submitted for the partial fulfillment of the requirements for the qualification of Master of Business Administration in Innovation and Technology Management in Graduate School of Management at Ritsumeikan Asia Pacific University. It has not been submitted in any other universities, or institutions before for the qualification of any other degree.

Any literature, idea data, or concepts as well as resources from other sources have been carefully acknowledge, cite and references within this dissertation.

Chapter 1| Introduction

National innovation system covers a large set of sub measures, which are related to all aspects of innovation. A healthy and well performed National Innovation System offers sustainable development, strong competitiveness, and active economic growth to a country. One of the most recognized major driving engines of economic growth in today world is technological change. Asgari, B & Lim, W.Y. (2009, p.72) stated that, "*Technological change can be achieved through continuous technological learning and competence building.*" It is a continuous process of changes resulted from interaction and competition between new and existing technologies in the market and, or the global.

Media offers information and knowledge to public. Television, radio, newspapers, and films not only bring entertainment but also technology into our daily life. The platforms create interaction of learning and creativity. The diversity of media environment also provides people with fast growing information delivery sources and any possibility of interaction of learning which perhaps brings innovation. Social media via internet indirectly increase the possibility of expanding e-commerce, and entrepreneurship growth. Meanwhile, it offers environment of push and pull in innovation to individual, organization, or a nation. The motivation between push of technology development and pull on demand of products, services, lifestyle, etc. all need media. Yoffie, D. B, Max & Starr, D. (2010), pointed out that,

> "*Innovations occur when platforms are developed on which applications reside. Future innovations are being shaped by the integration of mobility, social networking, and cloud computing.*"

Internet as a media is one of the most important technological platforms for convergence between different kinds of communication, in terms of interactivity (Henten, A. & Tadayoni, R., 2008). The technological platforms and technological changes are indirectly altering social lifestyle, interaction, and learning patterns.

World Bank, and Negative Population Growth.com. Facts & Figures (2012) stated that the percentage of Internet users is continuously increasing from 28.5 % of the world population in 2009 to 32.7% of the world population in 2011 (See **Table 1.1**). 45% of the world's Internet users are below the age of 25. Besides that, it is almost 6 billion mobile-cellular subscriptions (International Telecommunication Union, 2012). Our media environment is changing. People are not only using traditional media such as television, radio, newspapers, scientific and technical articles but also increased the usage of Internet and mobile.

Innovation helps to motivate and shape a direction to a country in improving its National development, competitiveness, and economic growth. The Global Innovation Index (GII) 2012 as a universal measure of the level of Innovation for the nations based on many factors including number and quality of institutions, infrastructure, business sophistication, etc in a nation (see **Figure 1.1**). It is assumed that, the higher measure, the more innovative the respected country is. Besides that, in order to assess innovation and related policy performance, the Global Innovation Index is provided a powerful key tool for refining innovation policies (Dutta, S. & INSEAD., 2012).

This research report proposes to examine significant determinant for national innovation index. It tests the hypothesis that there is a relationship of innovation index and media. This accomplished by attempting to demonstrate that there is a relationship between GII and media for a selected number of countries. If such of a relationship is found it can be extrapolated that a similar relationship may exist in any country. That also can be used as a controlling factor in changing the GII for a country to achieve the benefits.

The GII is not only as valuable benchmarking tool to facilitate public and private dialogue, it also find the potential metric for refining the relevant innovation policies (Dutta, S. & INSEAD., 2011; Dutta, S. & INSEAD., 2012). The current GII 2012 includes a limited number of measures related to media. Therefore, it is required to first clean the data by removing factors related to media from the existing measure of innovation index, i.e., by recalculating innovation index in absence of those media factors.

Table 1.1 The World Population and Internet Users for 2005 to 2012

Year	Population	Average Annual Growth rate (%)	Average Annual Population Change	Total of Internet Users (IU)	% Internet Users/ Population	Average IU Growth (%)
2005	6,462,181,426	1.16	75,478,997	1,021,650,260	15.8%	N/A
2006	6,537,660,423	1.15	75,561,947	1,149,699,209	17.6%	1.8
2007	6,613,222,370	1.14	75,666,070	1,364,061,558	20.6%	3.0
2008	6,688,888,440	1.13	75,761,868	1,556,190,215	23.3%	2.6
2009	6,764,650,308	1.11	75,772,948	1,742,807,100	25.8%	2.5
2010	6,840,423,256	1.10	75,755,042	2,012,131,194	29.4%	3.7
2011	6,916,178,298	1.09	75,622,621	2,263,512,248	32.7%	3.3
2012	6,991,800,919	1.07	75,164,045	N/A	N/A	N/A

Sources

World Bank. (2012).

Negative Population Growth.com. (2012).

** Notes: N/A represented that data not available. Last retrieved October 10, 2012*

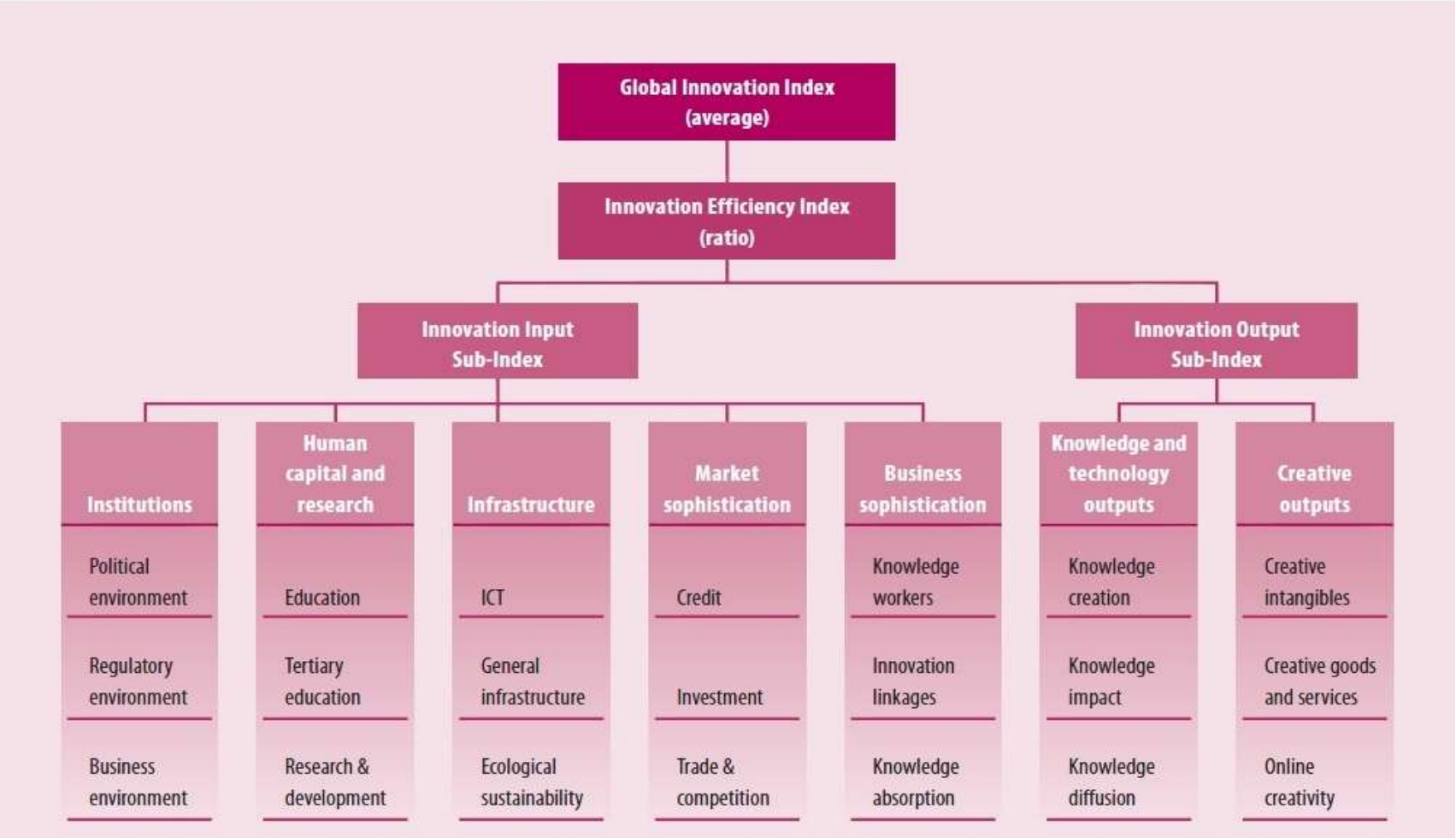


Figure 1.1 The Global Innovation Index (GII) 2012: Sub-pillars and eight pillars

Source: Dutta, S. & INSEAD. (2012).

Next, "media" needs to be defined to assist consistent data collection about relevant media indicators. On this basis relevant data about media is collected for the selected 20 countries for which the modified GII is already available. Then, this research tries to test the existence of relationship between innovation index and media for this sample. In summary the following methodology will be followed: -

- A thorough literature search on media and innovation. This helps to form a list of media and measurements to use for testing the hypothesis, where media has impact on innovation.
- Study the development process for the GII and its structure of measurement system. This study helps to recalculate GII for a list of selected 20 countries. By first removing the current partial coverage of media related measurements.
- Define media and develop constituent of media such as the factors that can be used to measure status of various media in a country. The media factors for the same selected 20 countries will be measured from literature such as Dutta, S, INSEAD, & Caulkin, S. (2007); Dutta, S. & INSEAD. (2009); Dutta, S. & INSEAD. (2010); Dutta, S. & INSEAD. (2011); Dutta, S. & INSEAD. (2012); CIA. (2013); Hong Kong Government Yearbook. (2011); Freedom House. (2011); and StatCounter GlobalStats. (2011); Hong Kong Government Fact sheets. (2012); Freedom House. (2012); and StatCounter GlobalStats. (2012).
- Modelling the modified innovation index as a function of media measures for the selected 20 countries through regression analysis.
- Test of the hypothesis that, media is a determinant of Innovation Index, from the sample of selected 20 countries.
- Discus the result based on the nature of media factors and type of data to be collected, as well as the possible guidelines for countries low in innovation index.
- Conclusions will be made upon results. If there is a significant relationship, it would help countries improve on innovation through media.

Chapter 2 is background of the Global Innovation Index (GII). There are 5 editions available since year 2007 to 2012. In this part will be highlighted the purpose of each GII reports, top ranking, and the relevant measurements; as well as the differences and changes among the pillars, sub-pillars, indicators. Meanwhile, it is described the key partners who had joint with the GII developer INSEAD, to collaborate in these GII projects during 2007 till 2012. A simple calculation example will be demonstrated in Chapter 2 as well.

Chapter 3 is basically discussing literature findings about Innovation, Media, and Global Innovation Index (GII). Interaction and open communication where people from different talents, purposes of insights, and experience will bring innovation (Lundvall, B. A., 2009). Meanwhile, Innovation is occurred when strong technological platforms were developed (Yoffie, D. Max & Starr, D., 2010).

Perkins & Globerson (1991) defined that, "*Media as an interaction between cognitive processes and characteristics of the environment...*" It is also one of the most important technological platforms for convergence between different kinds of communication, in terms of interactivity (Henten, A. & Tadayoni, R., 2008). As the result, it had framed media coverage influences on investors' behavior (Raban, D.R. & Yablowitz, M.G., 2012). More about media literature search to be discussed in this chapter.

Global innovation index is a formal model going through the related index of a nation, to get an idea of a country respond to innovation challenges, as well as applied to the worldwide context (Dutta, S, INSEAD, & Caulkin, S., 2007; Dutta, S. & INSEAD, 2009). It is provided as a very useful tool to help business leaders and policymakers to identify challenges, to improve competitiveness and innovation. Moreover, it highlighted the potential metric for the relevant innovation policies (Dutta, S. & INSEAD., 2011; Dutta, S. & INSEAD., 2012). Furthermore, literature search about Regression analysis (using/ based on SPSS package environment) also will be discussed in Chapter 3.

Chapter 4 mainly describes the data development, about the nature of data, and score recalculation. Examples or demonstration of the score recalculation will be

discussed. Firstly, it started to discuss about data selection which included selection of countries, followed by indicators such as indicators of innovation, and indicators related to media. Secondly, bring in the score calculation with examples, to demonstrate simple average and weighted average on the score calculation of pillars, sub-pillars, and innovation index. In general, score calculation this part is also included scores calculation of data tables. These scores are using for generating a country or economy profile which consists innovation index and other relevant index.

Chapter 5 describes regression in general. Besides that, the statistical modelling through regression analysis and output interpretation, on sample data set from 20 countries to test two years (year 2011 and year 2012) innovation index with 9 variables (media indicators). Each year will be tested at least three models by using SPSS. Each model is different in the number of variables which had been tested. Basically, this report is only presented mainly two models to each year with maximum three Independent Variables (IV) but will be summarized some general result of the model which covered nine IV.

Finally, Chapter 6 concludes summary of the findings, research limitations. Moreover, it highlights the possible future study for the research. Most of the predictors are possible have relationship with new innovation index, except Broadcast media. Some of the predictors do not strong relationship with the new innovation index but have significant relationship with other predictors, especially Search Engine (Google), and Video Upload on YouTube. Therefore, this report concluded that based on result of the sample, believed that there are at least 94.3% in year 2011, and 93.3 % in year 2012 of the variation in the new innovation index is explained by nine predictors but the output not all of the predictors are significant.

Chapter 2| Background

The Global Innovation Index (GII), which is referring to the case of mainly published by INSEAD till the year of 2012, there are 5 editions available (see **Table 2.1**). INSEAD well known as "*The Business School for the World, which is as one of the world's leading and largest graduate business schools brings people, cultures, and ideas to change lives and to transform organizations*" (INSEAD, 2013).

Table 2.1 List of the GII reports

Report	Edition	Released
GII 2012	Fifth Edition	July 2012
GII 2011	Fourth Edition	June 2011
GII 2010	Third Edition	March 2010
GII 2009	Second Edition	March 2009
GII 2007	First Pilot Edition	January-February 2007

Source: Compiled from Dutta, S. (2011), and INSEAD. (2012).

Key objective of the GII is going through the related index of a nation, get an idea of a country respond to innovation challenges, as well as applied to the worldwide context (Dutta, S. & INSEAD, 2009).

A World Business/ INSEAD Global Innovation Index 2007 released by World Business and INSEAD. This GII 2007 report was INSEAD first pilot report which released in year 2007. It is a report as a formal model which show a nation and, or worldwide respond to the challenges of innovation nowadays. The GII 2007 report is aiming to provide a holistic framework to measure innovation. The authors are Soumitra Dutta, INSEAD, and Simon Caulkin. This publication is also known as "The world's top innovators".

The Global Innovation Index (GII) 2007 covered 107 countries, measured by 84 indicators (See **Figure 2.1**), which categorized into eight pillars of innovation. The eight pillars of innovation (See **Figure 2.2**) categorized as inputs (innovation input) and outputs (innovation output). Inputs are consisted 5 pillars of innovation such as: Institutions and policies, Human capacity, Infrastructure, Technological sophistication,

Business markets and capital. Outputs are consisted 3 pillars of innovation included Knowledge, Competitiveness, and Wealth.

The Top 10 Ranking Global Innovation countries are United States of America, Germany, United Kingdom, Japan, France, Switzerland, Singapore, Canada, Netherlands, and Hong Kong. In addition, the top five high ranking innovative countries in Asia region are Japan, Singapore, Hong Kong, South Korea ("Korea, Rep., or Republic of Korea"), and India.

INSEAD was started its' collaboration with the Confederation of Indian Industry (CII) from the Global Innovation Index 2009, which is the second edition of GII. In the report had pointed out the reason of could not release the GII 2008 because "*the global economy is witnessing unprecedented economic shifts*" (Dutta, S. & INSEAD, 2009). CII is "*a non-government and not-for-profit, which aims to create and sustain an environment conducive to the growth of industry in India, partnering industry and government alike through advisory and consultative processes"* (Dutta, S. & INSEAD, 2009).

The second edition report had covered 130 countries, exceed 23 countries compare to the GII 2007. The GII 2009 measured by 92 indicators (see **Figure 2.4**) and categorized as same as the eight pillars of innovation in the GII 2007 (see **Figure 2.2 and Figure 2.3**). The objective is to contribute the establishment of a process for benchmarking progress in innovation of the worldwide, to help "*business leaders and policymakers to identify obstacles to improve innovation, competitiveness, and stimulate discussion on strategies to overcome the challenges*" (Dutta, S. & INSEAD, 2009).

The Top 10 Ranking Innovative countries globally are United States of America, Germany, Sweden, United Kingdom, Singapore, Republic of Korea, Switzerland, Denmark, Japan, and Netherlands. On the other hand, the top five high ranking innovative countries in in Asia region are Singapore, Republic of Korea, Japan, Hong Kong, and Taiwan.

Innovation Input

Institutions and Policies
- Independence of judiciary
- Demanding regulatory standards
- Prevalence of laws relating to ICT
- Quality of IPR
- Soundness of banks
- Quality of scientific research institutions
- Quality of management/business schools
- Legal obstacles to foreign labour
- Time required to start a business
- Time required to obtain licenses
- Rigidity of employment index
- Investor protection index
- ICT priority for government

Human Capacity
- Brain drain
- Quality of human resource approach
- Quality of maths and science education
- Graduates in engineering
- Graduates in science
- Population 15-64
- Urban population
- Schools connected to the internet

General and ICT Infrastructure
- Quality of general infrastructure
- Quality of national transport network
- Quality of air transport
- Fixed line penetration
- Mobile penetration
- Internet penetration
- International bandwidth
- ICT expenditure
- Personal computer penetration
- Mobile price basket

Business, Markets and Capital Flows
- Access to loans
- Sophistication of financial markets
- Issuing shares in local share market
- Corporate governance
- Buyer sophistication
- Customer orientation of firms
- Domestic credit to private sector
- FDI net inflows
- Gross private capital flows
- Gross capital formation
- Extent of clusters
- Commercial services imports
- Manufactured Imports
- Private investment in ICT
- Informal economy estimate

Technology and Process Sophistication
- Country's level of technology
- E-Participation index
- E-Government index
- Government procurement of advanced technology
- Internet use by businesses
- Competition among ISP providers
- Company technology absorption
- Telecom revenue
- Secure internet servers per 1,000 people
- Spending on R&D
- Royalty and license fee payments
- Business/university R&D collaboration

Innovation Output

Knowledge → represented as **Pillar**
- Local specialized research and training → represented as **Indicator**
- Nature of competitive advantage
- Quality of production process technology
- High-tech exports
- Manufactured exports
- ICT exports
- Insurance and financial services
- Patents registered (domestic and non-domestic)
- Royalty and license fee receipts

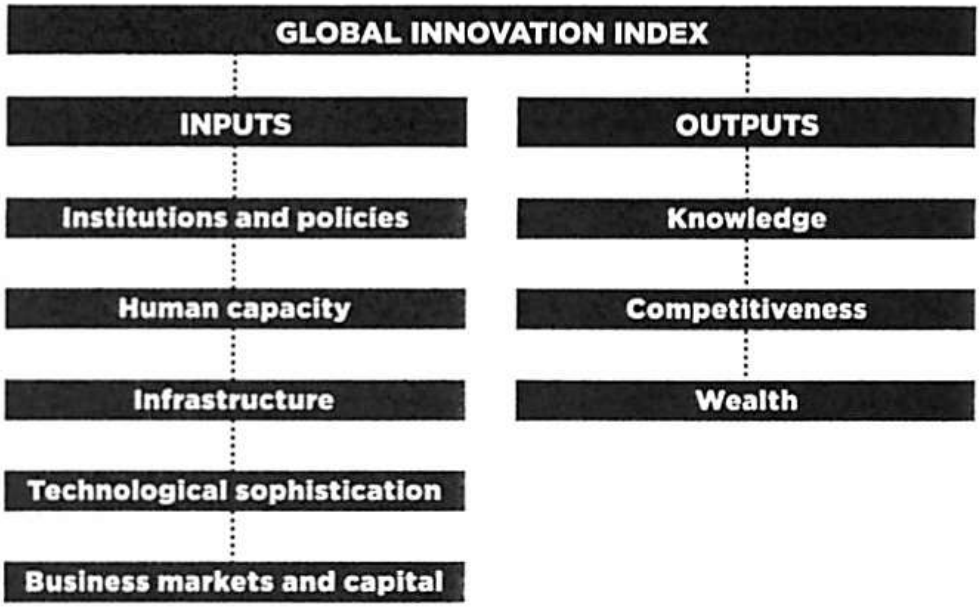
Competitiveness
- Growth of exports to neighboring countries
- Intensity of local competition
- Reach of exporting in international markets
- Commercial services export
- Merchandise exports
- Goods exported
- Service exports
- Listed domestic companies

Wealth
- Final consumption expenditure
- GDP per capita, PPP
- GDP growth rate
- Industry, value added
- Manufacturer, value added
- Services, value added
- International migration stock
- Value of stocks traded
- FDI net outflows

Total of Indicators
84

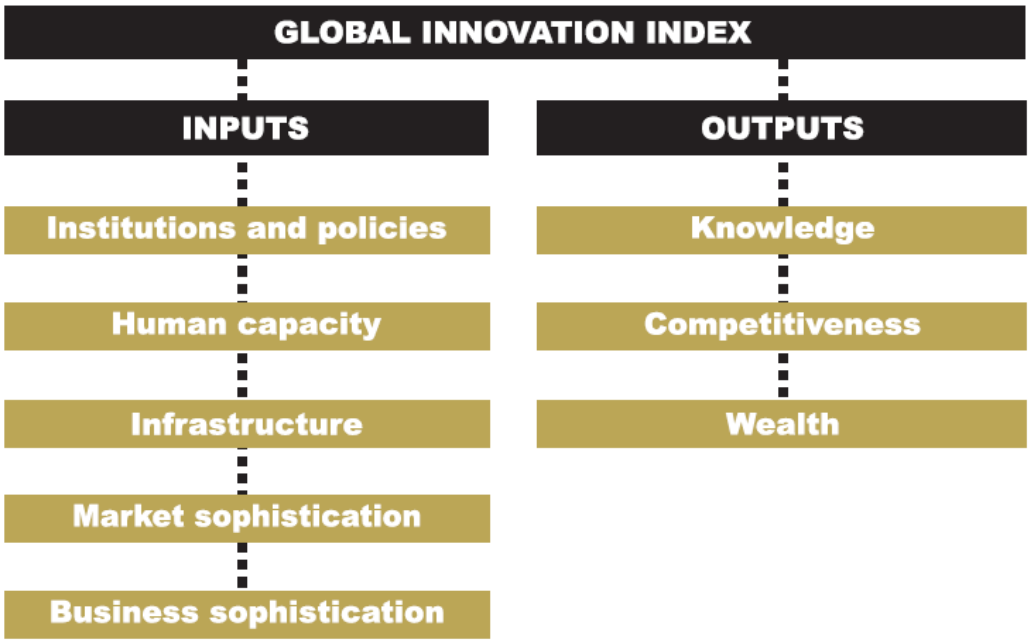
Source: Compiled from Dutta, S, INSEAD, & Caulkin, S. (2007).

Figure 2.1 The GII 2007: List of Innovation indicators



Source: Dutta, S, INSEAD, & Caulkin, S. (2007)

Figure 2.2 The GII 2007: Eight Pillars of Innovation



Source: Dutta, S. & INSEAD. (2009).

Figure 2.3 The GII 2009: Eight Pillars of Innovation

Innovation Input

I – Institutions & Policies: Variables

1.1.01 Starting a business - Time (days)
1.1.02 Dealing with licences - Time (days)
1.1.03 Voice & Accountability
1.1.04 Political Stability
1.1.05 Government Eff ectiveness
1.1.06 Regulatory Quality
1.1.07 Rule of Law
1.1.08 Control of Corruption
1.1.09 Laws relating to ICT
1.1.10 Burden of government regulation
1.1.11 Intellectual property protection
1.1.12 Legal Framework
1.1.13 Soundness of banks
1.1.14 Legacy of innovation
1.1.15 R&D expenditure as a % of GDP

II - Human Capacity

1.2.01 Adjusted savings: education expenditure (% of GNI)
1.2.02 Literacy rate, adult total (% of people ages 15 and above)
1.2.03 Population ages 15-64 (% of total)
1.2.04 Employing Workers - Rigidity of Employment Index
1.2.05 Culture to innovate
1.2.06 Quality of the educational system
1.2.07 Availability of scientists and engineers
1.2.08 Brain drain
1.2.09 Extent of staff training
1.2.10 Entrepreneur as Role Models
1.2.11 E-participation Index
1.2.12 Net migration rate
1.2.13 Quality of scientifi c research institutions
1.2.14 Quality of management schools

III - General and ICT Infrastructure

1.3.01 International Internet bandwidth (Mbps per million people)
1.3.02 Internet users (per 100 people)
1.3.03 Mobile phone subscribers (per 100 people)
1.3.04 Personal computers (per 100 people)
1.3.05 Households with television (%)
1.3.06 Main telephone lines (fi xed lines) per 100 people
1.3.07 Gross capital formation (current US$)
1.3.08 Internet subscribers (Total broadband) per 100 people
1.3.09 Total annual investment in telecom (US$ per 1000 people)
1.3.10 Overall infrastructure quality
1.3.11 Internet access in schools
1.3.12 Quality of competition in ISP sector
1.3.13 Transportation to key business centres within the country

IV - Markets Sophistication

1.4.01 Foreign direct investment, net infl ows (BoP, Current US$)
1.4.02 Domestic credit to private sector (% of GDP)
1.4.03 Getting Credit - Legal Rights Index
1.4.04 Getting Credit - Credit Information Index
1.4.05 Gross private capital fl ows (% of GDP)
1.4.06 Economy characteristics - internal economy estimate (%)
1.4.07 Protecting Investors - Investor Protection Index
1.4.08 Financial market sophistication
1.4.09 Venture capital availability
1.4.10 Local equity market access
1.4.11 Prevalence of trade barriers
1.4.12 Foreign ownership restrictions

V - Business Sophistication

1.5.01 Secure Internet servers (per 1 million people)
1.5.02 ICT spending (Percentage of GDP)
1.5.03 E-government readiness Index
1.5.04 Manufactures imports (% of merchandise imports)
1.5.05 Technological readiness
1.5.06 Firm level technology absorption
1.5.07 FDI and technology transfer
1.5.08 Company spending on R&D
1.5.9 University/industry research collaboration
1.5.10 Government procurement of advanced technology products
1.5.11 Extent of business internet use
1.5.12 Local supplier quality
1.5.13 Degree of customer orientation

Innovation Output

I - Knowledge

2.1.01 High-technology exports (current US$)
2.1.02 Manufactures exports (% of merchandise exports)
2.1.03 Insurance and fi nancial services (% of commercial service exports)
2.1.04 ICT Exports
2.1.05 Presence of clusters
2.1.06 Local availability of process machinery
2.1.07 Local availability of specialised research and training services
2.1.08 Value chain presence
2.1.09 Innovation in new technologies
2.1.10 Production process sophistication

II - Competitiveness

2.2.01 Goods exports (BoP, current US$)
2.2.02 Service exports (BoP, current US$)
2.2.03 Commercial service exports (current US$)
2.2.04 Merchandise exports (current US$)
2.2.05 Intensity of local competition
2.2.06 Extent of regional sales
2.2.07 Presence of Innovative products
2.2.08 Breadth of international markets

III - Wealth

2.3.01 Market value of publicly traded shares
2.3.02 GDP growth (annual %)
2.3.03 GDP per capita, PPP (current international $)
2.3.04 Industry, value added (current US$)
2.3.05 Services, etc., value added (current US$)
2.3.06 Final consumption expenditure, etc. (current US$)
2.3.07 Electric power consumption (kWh per capita)

Total of Indicators
92

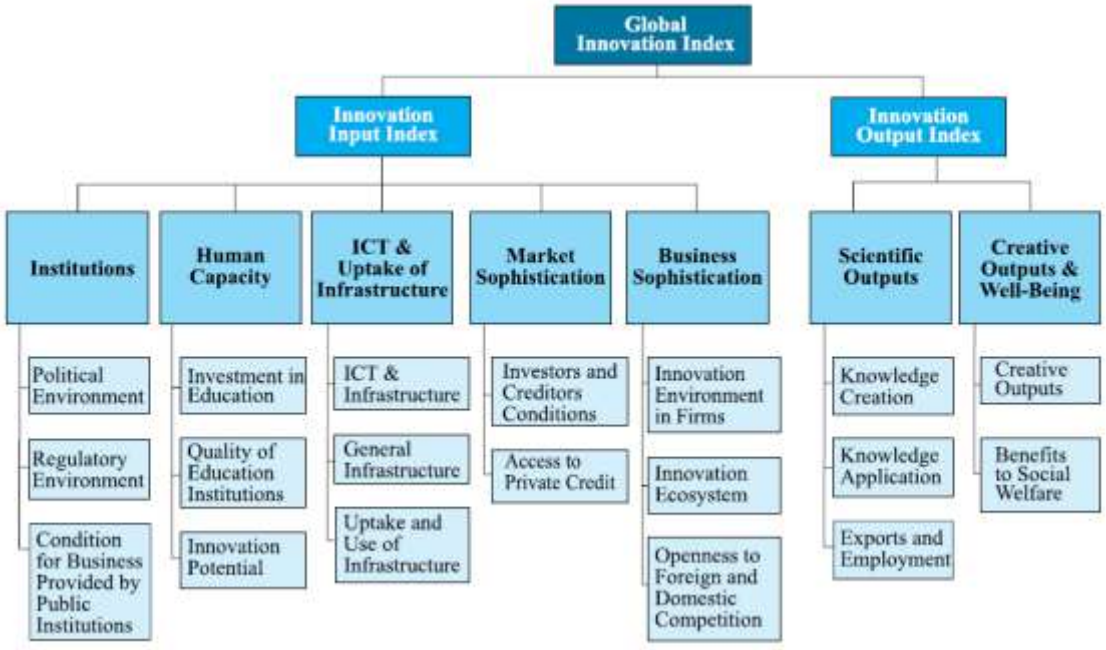
Source: Compiled from Dutta, S. & INSEAD. (2009).

Figure 2.4 The GII 2009: List of Innovation indicators

Although the pillars of innovation was remained as same as both of the first edition and second edition GII reports, the indicators had changes not only number of indicators which used for the reports. Besides that, content of some indicators also had changed. Furthermore, some indicators also had placed in different pillars. For example, in the GII 2007, indicator E-participation index was belongs to technology and process sophistication pillar but in the GII 2009 it had changed and categorized as human capacity pillar.

The third edition, the Global Innovation Report 2010, it kept on providing useful tool for decision makers and civil society with aims to "*help business leaders and policymakers to investigate the reasons leading to a nation innovation ranking and relative performance"* (Dutta, S. & INSEAD, 2010). In addition, it also highlighted that, innovation always be disruptive to catalyze the process, therefore, today country leaders are not the leaders of tomorrow (Dutta, S. & INSEAD, 2010).

Figure 2.5 shows sub-pillars and seven pillar of innovation in the GII 2010. In this edition, it had reduced the number of pillars. For example, from eight pillars of



Source: Dutta, S. & INSEAD. (2010).

Figure 2.5 The GII 2010: Sub-pillars and Seven Pillars of Innovation

innovation was became seven pillars and the title also had been changed. Sub-pillar of each pillar had added in the framework. Each sub-pillar was consisted at least two to five indicators. The GII 2010 was measured by 60 indicators only (see **Figure 2.6**), but covered 132 countries.

Source: Compiled from Dutta, S. & INSEAD. (2010).

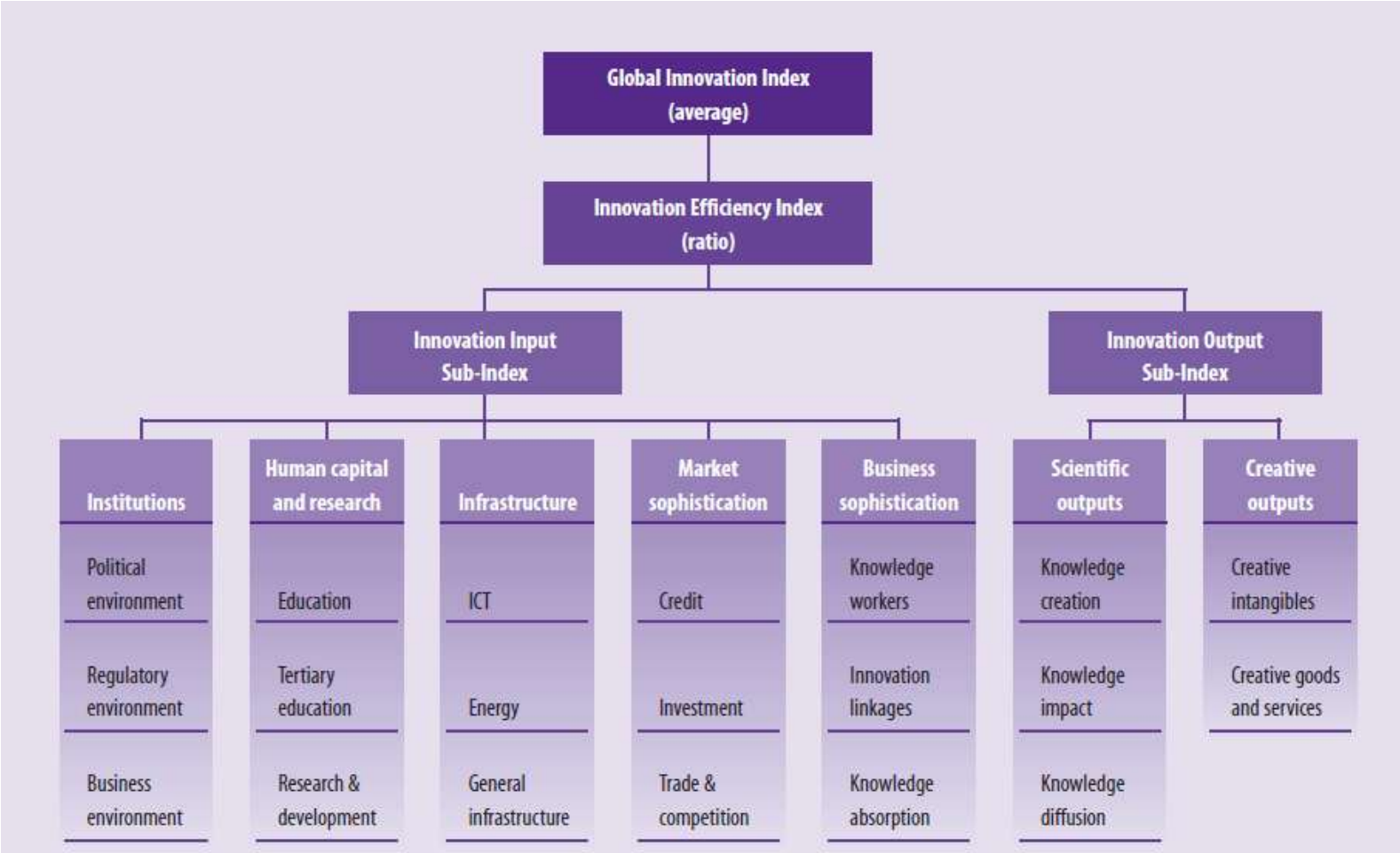
Figure 2.6 The GII 2010: List of Innovation indicators

Top ten ranking of the GII 2010 was dramatically changed where United States of America and Germany dropped out of the top ten ranking of the Global Innovative countries, only ranked as eleventh and sixteenth. Iceland ranked as number one, followed by Sweden, Hong Kong, Switzerland, Denmark, Finland, Singapore, Netherland, and Norway. The top five ranking in Asia, Hong Kong ranked as number one, Singapore as second place, Japan became as third, Korea as number fourth, and Taiwan ranked as number five.

GII 2011 as the 4th edition which kept seven pillars of innovation but there were changes on some sub-pillars, and indicators (see **Figure 2.7).** In general, this edition had standardized each innovation input pillar has three sub-pillars (excluded innovation output pillars, see **Figure 2.8**). The GII 2011 is measured by 80 indicators (see Figure **2.9**) but only covered 125 countries. It is increased twenty indicators but decreased seven countries compare to the GII 2010.

GII 2010		GII 2011	
2. Human Capacity		**2. Human capital & research**	
2.1 Investment in education INVESTMENT IN		**2.1 Education**	
2.1.1 Education expenditure, % GNI		2.1.1 Education expenditure, % GNI	
2.1.2 Extent of staff training		2.1.2 Public expenditure/pupil, % GDP/cap	
		2.1.3 School life expectancy, years	
		2.1.4 PISA scales in reading, maths, & science	
		2.1.5 Pupil-teacher ratio, secondary	
2.2 Quality of education institutes		**2.2 Tertiary education**	
2.2.1 Quality of the educational system		2.2.1 Tertiary enrolment, % gross	
2.2.2 Quality of scientific research institutions		2.2.2 Graduates in science, %	
2.2.3 Quality of management schools		2.2.3 Graduates in engineering, %	
		2.2.4 Tertiary inbound mobility, %	
		2.2.5 Tertiary outbound mobility, %	
		2.2.6 Gross tertiary outbound enrolment, %	
2.3 Innovation potential		**2.3 Research & development (R&D)**	
2.3.1 Researchers in R&D per million of population		2.3.1 Researchers headcount/million pop	
2.3.2 Availability of scientists and engineers		2.3.2 Gross expenditure on R&D, % GDP	
2.3.3 Enrolment in tertiary education		2.3.3 Quality research institutions	
3. ICT and Uptake of Infrastructure		**3. Infrastructure**	
3.1 ICT Infrastructure		**3.1 Info & comm. technologies (ICT)**	
3.1.1 Broadband Subscribers per 100 inhabitants	…..	3.1.1 ICT access	…

Figure 2.7 Example: Changes of Sub-pillars and Indicators



Source: Dutta, S. & INSEAD. (2011).

Figure 2.8 The GII 2011: Sub-pillars and Eight Pillars of Innovation

Innovation Input

1 Institutions

1.1 Political environment
1.1.1 Political stability
1.1.2 Government effectiveness
1.1.3 Press freedom

1.2 Regulatory environment
1.2.1 Regulatory quality
1.2.2 Rule of law
1.2.3 Rigidity of employment

1.3 Business environment
1.3.1 Time to start a business, days
1.3.2 Cost to start a business, % income/cap
1.3.3 Total tax rate, % profits

2 Human capital & research

2.1 Education
2.1.1 Education expenditure, % GNI
2.1.2 Public expenditure/pupil, % GDP/cap
2.1.3 School life expectancy, years
2.1.4 PISA scales in reading, maths, & science
2.1.5 Pupil-teacher ratio, secondary

2.2 Tertiary education
2.2.1 Tertiary enrolment, % gross
2.2.2 Graduates in science, %
2.2.3 Graduates in engineering, %
2.2.4 Tertiary inbound mobility, %
2.2.5 Tertiary outbound mobility, %
2.2.6 Gross tertiary outbound enrolment, %

2.3 Research & development (R&D)
2.3.1 Researchers headcount/million pop
2.3.2 Gross expenditure on R&D, % GDP
2.3.3 Quality research institutions

3 Infrastructure

3.1 Info & comm. technologies (ICT)
3.1.1 ICT access
3.1.2 ICT use
3.1.3 Government's Online Service
3.1.4 E-Participation

3.2 Energy
3.2.1 Electricity output, kWh/cap
3.2.2 Electricity consumption, kWh/capita
3.2.3 GDP/unit of energy use, PPP$/kg oil eq
3.2.4 Share of renewables in energy use, %

3.3 General infrastructure
3.3.1 Quality of trade & transport infrastructure
3.3.2 Gross capital formation, % GDP
3.3.3 Ecological footprint & biocapacity, ha/cap

4 Market sophistication

4.1 Credit
4.1.1 Strength of legal rights for credit
4.1.2 Depth of credit information
4.1.3 Domestic credit to private sector, % GDP
4.1.4 Microfinance gross loans, % GDP

4.2 Investment
4.2.1 Strength of investor protection
4.2.2 Market capitalization, % GDP
4.2.3 Total value of stocks traded, % GDP
4.2.4 Venture capital deals/tr GDP PPP$

4.3 Trade & competition
4.3.1 Applied tariff rate weighted mean, %
4.3.2 Market access trade restrictiveness*, %
4.3.3 Imports of goods & services, % GDP
4.3.4 Exports of goods & services, % GDP
4.3.5 Intensity local competition

5 Business sophistication

5.1 Knowledge workers
5.1.1 Knowledge-intensive employment, %
5.1.2 Firms offering formal training, % firms
5.1.3 R&D performed by business, %
5.1.4 R&D financed by business, %

5.2 Innovation linkages
5.2.1 University/industry collaboration
5.2.2 State of cluster development
5.2.3 R&D financed by abroad, %
5.2.4 JV/strategic alliance deals/tr GDP PPP$
5.2.5 PCT patent filings with foreign inventor, %

5.3 Knowledge absorption
5.3.1 Royalty & license fees payments, % GDP
5.3.2 High-tech imports less re-imports, %
5.3.3 Computer & comm. service imports, %
5.3.4 FDI net inflows, % GDP

Innovation Output

6 Scientific outputs

6.1 Knowledge creation
6.1.1 Domestic resident patent ap/bn GDP PPP$
6.1.2 PCT resident patent ap/bn GDP PPP$
6.1.3 Domestic res utility model ap/bn GDP PPP$
6.1.4 Scientific & technical articles/bn GDP PPP$

6.2 Knowledge impact
6.2.1 Growth rate of GDP PPP$/worker, %
6.2.2 New businesses/1,000 pop. 15–64 yrs
6.2.3 Computer software spending, % GDP

6.3 Knowledge diffusion
6.3.1 Royalty & license fees receipts, % GDP
6.3.2 High-tech exports less re-exports, %
6.3.3 Computer & comm service exports, %
6.3.4 FDI net outflows, % GDP

7 Creative outputs

7.1 Creative intangibles
7.1.1 Domestic res trademark ap/bn GDP PPP$
7.1.2 Madrid resident trademark ap/bn GDP PPP$
7.1.3 ICT & business models
7.1.4 ICT & organizational models

7.2 Creative goods & services
7.2.1 Recreation & culture consumption, %
7.2.2 National feature films/mn pop
7.2.3 Daily newspapers/1,000 literate pop
7.2.4 Creative goods exports, %
7.2.5 Creative services exports, %

Total of Indicators
80

Source: Compiled from Dutta, S. & INSEAD. (2011).

Figure 2.9: The GII 2011: List of Innovation indicators

In order to strengthened the GII as powerful benchmarking tool to support public and private sectors, many teams or key knowledge partners had involved in collaboration of the GII 2011. Key knowledge partners such as Confederation of Indian Industry (CII) which joint since the GII 2009, Alcatel-Lucent, Booz & Company, and the World Intellectual Property Organization (WIPO) which known as a specialized agency of the United Nations. Of course, the INSEAD is as primarily player in this GII project.

In addition, the Joint Research Centre (JRC) of the European Commission was in-charged of ensuring a thorough analysis of the GII 2011 such as researched on the complexity of composite indicators ranking countries' performances along policy lines, assessed earlier version of the GII model, and qualitative review (Dutta, S. & INSEAD., 2011).

About the top ten ranking as Switzerland ranked as number one, followed by Sweden, Singapore, Hong Kong, Finland, Denmark, United States of America, Canada, Netherlands, and United Kingdom. For Asia region, Singapore ranked as number one, and followed by Hong Kong, Republic of Korea, Japan, and Qatar. Innovation is not only relying to technology, other relevant factors also play important roles to improve innovation in a country.

Fifth edition, the GII 2012 was released in July, 2012. The GII2012 is provides a key tool for refining innovation policies, and helps to create an environment in which factors of innovation are allowed to evaluate continuously (Dutta, S. & INSEAD, 2012). Key knowledge partners or supports from Alcatel-Lucent, booz&co., Confederation of Indian Industry, the Econometrics and Applied Statistics Unit at the European Commission Joint Research Centre (JRC).

This 5th edition is also the result of collaboration between INSEAD and the World Intellectual Property Organization (WIPO). INSEAD and WIPO were inviting JRC continuing for a second year to audit the GII especially "*along two main issues such as the conceptual and statistical coherence of the structure, and the impact of key modeling assumptions on the GII 2012 scores and ranks*" (Dutta, S. & INSEAD, 2012).

In 2012, the GII is covered 141 countries and measured by 84 indicators (see **Figure 2.10**), which categorized into 7 pillars of innovation. These 7 pillars of

innovation, each pillar has 3 sub pillars. Each sub pillar has at least 3 indicators or some particular sub pillars have as many as 6 indicators (see **Figure 2.10**). Some indicators are related to media, but there is none a pillar which is specifically form as media (see **Figure 1.1**, as discussed in Chapter 1). Furthermore, about indicators are related to media, see Chapter 4.

Figure 2.11 shows country or economy profile of Switzerland in the GII 2012, and it marked three portions with A, B, and C. Portion A is stated basic information of a nation such as population in million, GDP per capita, PPP$, and GDP in US$ billion.

Pillars in **Figure 2.11** are referring to 1. Institutions, 2. Human capital & research, 3. Infrastructure, 4. Market sophistication, 5. Business sophistication, 6. Knowledge and technology outputs, and 7. Creative outputs. There are twenty one sub-pillars in **Figure 2.11**, so only listed some example such as 1.1 Political environment, 1.2 Regulatory environment, and others. There are 84 indicators used for measuring the GII 2012.

Portion B is described Global Innovation Index 2012 (out of 141 countries), Innovation output Sub-Index, Innovation Input Sub-Index, and Innovation Efficiency Index. In order to get the score for Global Innovation Index 2012 (out of 141), sum up all the scores of the seven pillars and divide the total of weighted average. Further details, see **Table 4.2** in Chapter 4. Notes for the following calculations: -

- To get the Innovation output sub-index is summing all the score of output pillars and divide the total of weighted average.
- The total of summing up all the five innovation input pillars and divide to the total of weighted average is equal to innovation input sub-index.
- Innovation output sub-index divide innovation input sub-index is equal to innovation efficiency index.

Innovation Input
1. Institutions
1.1 Political environment
1.1.1 Political stability
1.1.2 Government effectiveness
1.1.3 Press freedom
1.2 Regulatory environment
1.2.1 Regulatory quality
1.2.2 Rule of law
1.2.3 Cost of redundancy dismissal
1.3 Business environment
1.3.1 Ease of starting a business
1.3.2 Ease of resolving insolvency
1.3.3 Ease of paying taxes
2. Human capital and research
2.1 Education
2.1.1 Expenditure on education
2.1.2 Public expenditure on education per pupil
2.1.3 School life expentancy
2.1.4 Assessment in reading, mathematics, and science
2.1.5 Pupil-teacher ratio
2.2 Tertiary education
2.2.1 Tertiary school enrolment
2.2.2 Graduates in science and engineering
2.2.3 Tertiary inbound mobility
2.2.4 Gross tertiary outbound enrolment
2.3 Research & development
2.3.1 Researchers
2.3.2 Gross expenditure on R&D (GERD)
2.3.3 Quality of research institutions
3. Infrastructure
3.1 ICT
3.1.1 ICT access
3.1.2 ICT use
3.1.3 Government's online service
3.1.4 E-participation
3.2 General infrastructure
3.2.1 Electricity output
3.2.2 Electricity consumption
3.2.3 Trade and transport-related infrastructure
3.2.4 Gross capital formation
3.3 Ecological sustainability
3.3.1 GDP per unit of energy use
3.3.2 Environmental performance
3.3.3 ISO 14001 environmental certificates
4. Market sophistication
4.1 Credit
4.1.1 Ease of getting credit
4.1.2 Domestic credit to private sector
4.1.3 Microfinance institutions' gross loan portfolio
4.2 Investment
4.2.1 Ease of protecting investors
4.2.2 Market capitalization
4.2.3 Total value of stocks trade
4.2.4 Venture capital deals
4.3 Trade & competition
4.3.1 Applied tariff rate
4.3.2 Market access for non-agricultural exports
4.3.3 Import of goods and services
4.3.4 Exports of goods and services
4.3.5 Intensity of local competition
5. Business sophistication
5.1 Knowledge workers
5.1.1 Employment in knowledge-intensive services
5.1.2 Firms offering formal training
5.1.3 GERD performed by business enterprise
5.1.4 GERD financed by business enterprise
5.1.5 GMAT mean score
5.1.6 GMAT test takers
5.2 Innovation linkages
5.2.1 University/ industry research collaboration
5.2.2 State of cluster development
5.2.3 GERD financed by abroad
5.2.4 Joint venture/ strategic alliance deals
5.2.5 Share of patents with foreign inventor
5.3 Knowledge absorption
5.3.1 Royalty and license fees payments
5.3.2 High-tech imports
5.3.3 Computer and communications service imports
5.3.4 Foreign direct investment net inflows
Innovation Output
6. Knowledge and technology outputs
6.1 Knowledge creation
6.1.1 National office patent applications
6.1.2 Patent Cooperation Treaty applications
6.1.3 National office utility model applications
6.1.4 Scientific and Technical Journal Articles
6.2 Knowledge impact
6.2.1 Growth rate of GDP per person engaged
6.2.2 New business density
6.2.3 Total computer software spending
6.2.4 ISO 9001 quality certificates
6.3 Knowledge diffusion
6.3.1 Royalty and license fees receipts
6.3.2 High-tech exports
6.3.3 Computer and communications service exports
6.3.4 Foreign direct investment net outflows
7. Creative outputs
7.1 Creative outputs
7.1.1 National office trademark registrations
7.1.2 Madrid Agreement trademark registrations
7.1.3 ICT and business model creation
7.1.4 ICT and organizational models creation
7.2 Creative goods and services
7.2.1 Recreation and culture consumption
7.2.2 National feature films produced
7.2.3 Daily newspaper circulation
7.2.4 Creative goods exports
7.2.5 Creative services exports
7.3 Online creativity
7.3.1 Generic top-level domains (gTLDs)
7.3.2 Country-code top-level domains (ccTLDs)
7.3.3 Wikipedia monthly edits
7.3.4 Video uploads on Youtube

Total of Indicators
84

Source: Compiled from Dutta, S. & INSEAD. (2012).

Figure 2.10: The GII 2012: List of Innovation indicators

298

Switzerland

I: Country/Economy Profiles

Key indicators

Population (millions)	7.8
GDP per capita, PPP$	43,508.6
GDP (US$ billions)	665.9

A

	Score (0–100) or value (hard data)	Rank
Global Innovation Index 2012 (out of 141)	**68.2**	**1** ●
Innovation Output Sub-Index	68.5	1 ●
Innovation Input Sub-Index	68.0	4
Innovation Efficiency Index	1.0	5
Global Innovation Index 2011 (out of 125)		1
GII 2012 rank among GII 2011 economies (125)		1

B

1	**Institutions**	**88.0**	**13**
1.1	*Political environment*	*94.4*	*5*
1.1.1	Political stability*	94.5	5
1.1.2	Government effectiveness*	91.2	5
1.1.3	Press freedom*	97.4	8
1.2	*Regulatory environment*	*95.0*	*12*
1.2.1	Regulatory quality*	93.7	13
1.2.2	Rule of law*	94.9	10
1.2.3	Cost of redundancy dismissal, salary weeks	10.1	37
1.3	*Business environment*	*74.6*	*24*
1.3.1	Ease of starting a business*	56.8	61 ○
1.3.2	Ease of resolving insolvency*	74.1	37
1.3.3	Ease of paying taxes*	92.8	11
2	**Human capital & research**	**57.9**	**10**
2.1	*Education*	*58.1*	*47*
2.1.1	Current expenditure on education, % GNI	4.8	45
2.1.2	Public expenditure/pupil, % GDP/cap	27.4	15
2.1.3	School life expectancy, years	15.5	26
2.1.4	PISA scales in reading, maths, & science	517.0	11
2.1.5	Pupil-teacher ratio, secondary	n/a	n/a
2.2	*Tertiary education*	*47.9*	*27*
2.2.1	Tertiary enrolment, % gross	51.5	45
2.2.2	Graduates in science & engineering, %	21.6	43 ○
2.2.3	Tertiary inbound mobility, %	14.9	12
2.2.4	Gross tertiary outbound enrolment, %	2.4	36
2.3	*Research & development (R&D)*	*67.7*	*8*
2.3.1	Researchers, headcounts/mn pop.	6,057.4	10
2.3.2	Gross expenditure on R&D, % GDP	3.0	7
2.3.3	Quality of scientific research institutions†	87.8	2 ●
3	**Infrastructure**	**60.8**	**8**
3.1	*Information & communication technologies (ICT)*	*63.1*	*21*
3.1.1	ICT access*	87.0	4
3.1.2	ICT use*	63.7	13
3.1.3	Government's online service*	67.3	32
3.1.4	E-participation*	34.2	44
3.2	*General infrastructure*	*53.2*	*18*
3.2.1	Electricity output, kWh/cap	8,544.9	19
3.2.2	Electricity consumption, kWh/cap	8,327.8	17
3.2.3	Quality of trade & transport infrastructure*	79.3	6
3.2.4	Gross capital formation, % GDP	19.2	101 ○
3.3	*Ecological sustainability*	*66.2*	*3*
3.3.1	GDP/unit of energy use, 2000 PPP$/kg oil eq	10.2	12
3.3.2	Environmental performance*	76.7	1 ●
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	7.9	12
4	**Market sophistication**	**69.8**	**5**
4.1	*Credit*	*69.0*	*8*
4.1.1	Ease of getting credit*	77.4	21
4.1.2	Domestic credit to private sector, % GDP	174.6	11
4.1.3	Microfinance gross loans, % GDP	n/a	n/a
4.2	*Investment*	*67.8*	*8*
4.2.1	Ease of protecting investors*	3.5	131 ○
4.2.2	Market capitalization, % GDP	234.7	3
4.2.3	Total value of stocks traded, % GDP	166.0	1 ●
4.2.4	Venture capital deals/tr PPP$ GDP	120.3	11
4.3	*Trade & competition*	*72.5*	*17*
4.3.1	Applied tariff rate, weighted mean, %	0.0	1 ●
4.3.2	Non-agricultural mkt access weighted tariff, %	1.4	84 ○
4.3.3	Imports of goods & services, % GDP	42.2	66 ○
4.3.4	Exports of goods & services, % GDP	53.6	37
4.3.5	Intensity of local competition†	74.3	22
5	**Business sophistication**	**63.5**	**6**
5.1	*Knowledge workers*	*85.8*	*2* ●
5.1.1	Knowledge-intensive employment, %	47.1	3
5.1.2	Firms offering formal training, % firms	n/a	n/a
5.1.3	R&D performed by business, %	73.5	6
5.1.4	R&D financed by business, %	68.2	7
5.1.5	GMAT mean score	561.0	28
5.1.6	GMAT test takers/mn pop. 20–34	400.4	12
5.2	*Innovation linkages*	*54.5*	*12*
5.2.1	University/industry research collaboration†	79.6	1 ●
5.2.2	State of cluster development†	61.9	14
5.2.3	R&D financed by abroad, %	6.0	56 ○
5.2.4	JV–strategic alliance deals/tr PPP$ GDP	84.7	13
5.2.5	PCT patent filings with foreign inventor, %	79.2	40
5.3	*Knowledge absorption*	*50.3*	*17*
5.3.1	Royalty & license fees payments/th GDP	n/a	n/a
5.3.2	High-tech imports less re-imports, %	15.8	17
5.3.3	Computer & comm. service imports, %	43.5	30
5.3.4	FDI net inflows, % GDP	-1.2	137 ○
6	**Knowledge & technology outputs**	**72.0**	**1** ●
6.1	*Knowledge creation*	*99.7*	*1* ●
6.1.1	Domestic resident patent ap/bn PPP$ GDP	25.6	1 ●
6.1.2	PCT resident patent ap/bn PPP$ GDP	11.7	1 ●
6.1.3	Domestic res utility model ap/bn PPP$ GDP	n/a	n/a
6.1.4	Scientific & technical articles/bn PPP$ GDP	30.1	2 ●
6.2	*Knowledge impact*	*57.2*	*7*
6.2.1	Growth rate of PPP$ GDP/worker, %	2.1	71 ○
6.2.2	New businesses/th pop. 15–64	4.9	17
6.2.3	Computer software spending, % GDP	1.2	2
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	37.1	10
6.3	*Knowledge diffusion*	*59.0*	*11*
6.3.1	Royalty & license fees receipts/th GDP	n/a	n/a
6.3.2	High-tech exports less re-exports, %	22.5	7
6.3.3	Computer & comm. service exports, %	44.2	31
6.3.4	FDI net outflows, % GDP	7.4	7
7	**Creative outputs**	**65.0**	**1** ●
7.1	*Creative intangibles*	*67.9*	*7*
7.1.1	Domestic res trademark reg/bn PPP$ GDP	95.2	12
7.1.2	Madrid resident trademark reg/bn PPP$ GDP	9.5	1 ●
7.1.3	ICT & business model creation†	69.4	16
7.1.4	ICT & organizational model creation†	57.1	34
7.2	*Creative goods & services*	*51.6*	*7*
7.2.1	Recreation & culture consumption, %	7.7	27
7.2.2	National feature films/mn pop. 15–69	19.0	1 ●
7.2.3	Paid-for dailies, circulation/th pop. 15–69	383.5	7
7.2.4	Creative goods exports, %	4.9	12
7.2.5	Creative services exports, %	0.0	112 ○
7.3	*Online creativity*	*72.8*	*8*
7.3.1	Generic top-level domains (TLDs)/th pop. 15–69	100.0	1 ●
7.3.2	Country-code TLDs/th pop. 15–69	79.6	4
7.3.3	Wikipedia monthly edits/mn pop. 15–69	8,060.6	17
7.3.4	Video uploads on YouTube/pop. 15–69	70.5	23

C

THE GLOBAL INNOVATION INDEX 2012

Source: Dutta, S. & INSEAD. (2012).

Figure 2.11 Country/ Economy Profile: Switzerland

Regarding to the portion C example of 1.2 Regulatory environment, the score 10.1 printed for 1.2.3 Cost of redundancy dismissal is value not represented score. Therefore, it is necessary referring to the data tables in the GII 2012 to get the score of this indicator (see Appendix 1).

Table 2.2 shows Score for 1.2 Regulatory environment and **Figure 2.12** shows the formula of the Score for 1.2 Regulatory Environment. This calculation had applied weight average calculation.

SP is represented as Sub-pillar.

i is represented number of indicators.

W*i* is represented Weight of *i*.

S*i* is represented Score of *i*.

k is the total number of *i*.

Table 2.2 Score Calculation for 1.2 Regulatory environment

Switzerland (CH)				**2012** Score (0-100)
Sub-pillar (SP1.2)	***i***	**Indicator**	**Weight (W_i)**	**(Collected) (S_i)**
1.2. Regulatory environment				**95.0**
	1	1.2.1 Regulatory quality	0.5	93.7
	2	1.2.2 Rule of law	0.5	94.9
k	**3**	1.2.3 Cost of redundancy dismissal	1	95.8
		Total of W	2	

$$\text{Score for SP1.2} = \sum_{i=1}^{k} WiSi/W = 95.0$$

Figure 2.12 Formula of the Score for Sub-pillar 1.2 Regulatory environment

Table 2.3 shows a summary of the ranking and score for the GII 2007, GII 2009, GII 2010, GII 2011 and GII 2012. It is by the selected twenty countries which used as a sample in this paper. Since the sample size and framework of innovation pillars collected or used by the GII are almost had changes every year. Therefore, there are some missing data.

Another notes should be taken were from these five editions GII realized that Japan had maintained its' position within the Asia Top three in the GII 2007, GII 2009, and GII 2010 but it was dropped out of the Asia top three since the GII 2011. India only once ranked in the Asia top five was the GII 2007 then Taiwan, Qatar, and Malaysia replaced it in the different years.

Table 2.3 The Global Innovation Index (GII): Ranking & Score from Year 2007, 2009, 2010, 2011 & 2012 Summary for the Selected 20 Countries

Country	Country Code	GII 2007 (Rank)	GII 2008-2009 (Rank)	GII 2009-2010 (Rank)	GII 2011 (Rank)	GII 2012 (Rank)	GII 2007 (Score)	GII 2008-2009 (Score)	GII 2009-2010 (Score)	GII 2011 (Score)	GII 2012 (Score)
Switzerland	CH	6	7	4	1	1	4.2	4.7	4.8	63.8	68.2
Sweden	SE	12	3	2	2	2	3.9	4.8	4.9	62.1	64.8
Singapore	SG	7	5	7	3	3	4.1	4.8	4.7	59.6	63.5
Hong Kong, China	HK	10	12	3	4	8	4.0	4.6	4.8	58.8	61.8
Finland	FI	13	13	6	5	4	3.9	4.6	4.7	57.5	61.3
Denmark	DK	11	8	5	6	7	4.0	4.7	4.7	57.0	60.6
USA	US	1	1	11	7	10	5.8	5.3	4.6	56.6	59.9
Canada	CA	8	11	12	8	12	4.1	4.6	4.6	56.3	58.7
Netherlands	NL	9	10	8	9	6	4.0	4.6	4.6	56.3	58.7
U.K	GB	3	4	14	10	5	4.8	4.8	4.4	56.0	57.7
Korea (Rep.)	KR	19	6	20	16	21	3.7	4.7	4.2	53.7	53.9
Estonia	EE	31	29	29	23	19	3.1	3.7	3.8	49.2	55.3
Malaysia	MY	26	25	28	31	32	3.5	4.1	3.8	43.8	45.9
Qatar	QA	N/A	24	35	26	33	N/A	4.1	3.6	47.7	45.5
China	CN	29	37	43	29	34	3.2	3.6	3.3	46.4	45.4
Iran, Islamic Rep.	IR	N/A	N/A	N/A	95	104	N/A	N/A	N/A	28.4	27.3
India	IN	23	41	56	62	64	3.6	3.4	3.1	34.5	35.7
Germany	DE	2	2	16	12	15	4.9	5.0	4.3	54.9	56.9
Norway	NO	25	14	10	18	14	3.5	4.5	4.6	52.6	56.4
Ireland	IE	21	21	19	13	9	3.7	4.3	4.3	54.1	58.7
Total Countries		**107**	**130**	**132**	**125**	**141**	**107**	**130**	**132**	**125**	**141**

Source: Compiled from Dutta, S, INSEAD, & Caulkin, S. (2007).; Dutta, S. & INSEAD. (2009).; Dutta, S. & INSEAD. (2010).; Dutta, S. & INSEAD. (2011).; and Dutta, S. & INSEAD. (2012).

Chapter 3| Literature Review

Innovations always link to learning and create new knowledge through communication. Lundvall, B. A. (2009) stated that, "*...Innovations come out of an interaction where people with different talents, interests, insights and experience get together in open communication willing to share their knowledge with others".*

Innovation occurred while strong technological platforms developed. Yoffie, D. B, Max & Starr, D. (2010), pointed out that, "*Innovations occur when platforms are developed on which applications reside. Future innovations are being shaped by the integration of mobility, social networking, and cloud computing.*"

Media, serve as a source of Public evaluation, either positive or negative media coverage. It is a "social proof" that increases the legitimacy of new venture. (Pollock, T. G., & Rindova, V. P., 2003; Raban, D.R. & Yablowitz, M.G., 2012). New venture can be evaluated by many factors, media coverage is one of the factors has been used for *established firms and new ventures in a number of studies* (eg Petkova, A.; Pollock, T. G., & Rindova, V. P., 2003).

Media, serve as a source of Information can affect Venture Capital Investors' (VCs) behavior. Raban, D.R. & Yablowitz, M.G. (2012) emphasized that, "*Framed media coverage influences on investors behavior*", and also strengthened Pollock & Rindova (2003) argument that media as source of information that influences investors' impression of newly public firms. The authors are based on the theoretical models included availability cascades and framing theory.

Agostino, A (1999), defined that, "*Media as an interaction between cognitive processes and characteristics of the environment...*" In addition, it is also one of the most important technological platforms for convergence between different kinds of communication, in terms of interactivity (Henten, A. & Tadayoni, R., 2008).

Global innovation index is a formal model going through the related index of a nation, to get an idea of a country respond to innovation challenges, as well as applied to the worldwide context (Dutta, S, INSEAD, & Caulkin, S., 2007; Dutta, S. & INSEAD, 2009). The higher measured innovation index of the respected country, the

more innovative it is. Innovation Index of a nation can be measured by many factors including number and quantity of institutions, infrastructure, creative output, etc.

The GII is provided a very useful tool for decision makers and civil society, to help "*business leaders and policymakers to identify obstacles to improve innovation, competitiveness, and stimulate discussion on strategies to overcome the challenges*" (Dutta, S. & INSEAD, 2009). Meanwhile, it also highlighted the potential metric for refining the relevant innovation policies (Dutta, S. & INSEAD., 2011; Dutta, S. & INSEAD., 2012).

In the Global Innovation Index (GII) 2012 Report emphasized that, the Internet as an unprecedented and unparalleled platform for innovation and change. Therefore, the Internet, Information and Communication Technology are important media for measuring creativity and innovation in the digital economy (Dutta, S. & INSEAD, 2012). Besides that, Dutta, S. & INSEAD (2012) also pointed out that,

> "*OECD show that digital content is growing very quickly in volume, often at high rates.*[1] *Low- and middle income countries are becoming important sources of content….. Online creativity is now established as an important new facet of innovation, but traditional innovation metrics do not capture this phenomenon*."

Therefore, the impact of Internet and ICT, indirectly bring impact and innovation of the search service, content identification technology, development of e-books, e-journal database, etc. For example search service by Google, content service by YouTube, entrepreneurship opportunity, social networking, and marketing service by Facebook. Nowadays, people can read or watch news from YouTube, Facebook, and Google. These bring innovation in publication, broadcasting (television and radio), and newspapers industries. The convenience access and use of ICT, created diverse and innovative working and living environment to the world.

For example broadcasting media can be found in YouTube nowadays such as Al-Jazeera from Qatar; from Japan such as ANN News, TBS News-i, etc. Most of the

public, and private broadcast stations from Taiwan also available in YouTube. In fact, there are a lot of private and public broadcast stations, newspapers, magazines also widely use YouTube as a channels reach to their audiences, readers, or users. Although social media and search engine have indirect copyright, privacy related liability challenges. Meanwhile, this is also increasing high demand in technology innovation for these social media such as YouTube, and Facebook, etc. Furthermore, same for the search engine related such as Google, Bing, Yahoo, etc.

On the other hands, When the situation is at firm or industry level, it requires infrastructure such as ICT for linking to e-business, R&D, and any business performance, ICT should interpret as one agent of innovation and growth (Franklin, M., Stam, P. & Clayton, T., 2008). ICT use is referred to computer use, e-sales, e-purchase, fast internet enabled employees improve productivity in the business or organization. An organization or business which had better quality of ICT Access would increase the ICT use without boundary and time limitation. (Franklin, M., Stam, P. & Clayton, T. (2008) stated that "*productivity effects of ICT use are associated more strongly through the 'indirect innovation' effect ...than through ICT use measures directly*." Moreover, ICT is also "*fosters innovation across the economy and greatly improves productivity*" (World Bank, 2012). Therefore, the ICT Access and ICT use are important in innovation.

ICT Access as a composite index in the GII 2012 defined that it is covered five ICT indicators: (1) Fixed telephone lines per 100 inhabitants; (2) Mobile cellular telephone subscriptions per 100 inhabitants; (3) International Internet bandwidth (bit/s) per Internet user; (4) Proportion of households with a computer; and (5) Proportion of households with Internet access at home (Dutta, S. & INSEAD, 2012). Furthermore, ICT use is also as a composite index which included three ICT indicators: (1) Internet users per 100 inhabitants; (2) Fixed broadband Internet sub-scribers per 100 inhabitants; (3) Mobile broadband subscriptions per 100 inhabitants ((Dutta, S. & INSEAD, 2012). These can be described the ICT technological context which had developed in a country, which indirectly it brings effects and development of innovation.

Scientific and Technical Journal Articles keep evidence of problem finding, solution, information for generating new knowledge. Meanwhile, it is also as a tool to keep tracks of the process or historical references for innovation. Russell Shank (1962) stated that,

> "*scientific periodical that the periodical's two major roles in the process of scientific communication, namely serving as a vehicle for communication of new discoveries and ideas, and acting as a repository of knowledge, may be incompatible roles and may represent different kinds of problems in organization and management…The scientific periodical is strong, virile, and heady. Unrest may yet, however, produce a revolution."*

World Bank. (2013) defined that,

> *"Scientific and technical journal articles are refer to the number of scientific and engineering articles published in the following fields: physics, biology, chemistry, mathematics, clinical medicine, biomedical research, engineering and technology, and earth and space sciences."*

The above clearly described that Scientific and technical Journal Articles are a valuable knowledge and learning storage for discovering new ideas. Wikipedia is widely used for reading, and help people to grasp basic understanding quickly in any topic today. It is convenience, helpful, and available in multi-languages context. And, mostly it is up-to-date. Dutta, S. & INSEAD. (2012) stated that, "*The edits provided to Wikipedia encyclopedia sites are a relatively trustworthy indication of user activity on this global online encyclopedia.*"

National features films produced, which created soft power to influence life style, and new trend. Dutta, S. & INSEAD. (2012) defined that, films produced *for commercial exhibition in cinemas* (films produced solely for television broadcasting are as a general rule excluded). The national features films produced are considered as a media, which also enabled to develop economy of a country. It is also a media to deliver message, and presented knowledge in different forms such as cultures, art, filming technology, and quality media products to large number of people.

Social media has big impact on businesses, while supporting and helping people to increase their awareness of opportunities (Indiana Office of Tourism Development, 2010). Dutta, S. & INSEAD (2012) stated that,

> "*The participative Internet is increasingly an important platform for creativity and innovation……Web users are now often contributors to developing, rating, collaborating, and distributing Internet content.*"

The diversity of media environment provides people with fast growing information delivery sources. Media brings important new way of innovation. Online creativity such as Wikipedia monthly edits and video uploaded on YouTube as *sources of potentially real-time, complete, and detailed data, especially Internet user behaviors and content creations* (Dutta, S. & INSEAD, 2012). Although today ICT infrastructure is getting better and better, there still huge number of not well developed ICT infrastructure countries in the world. Therefore, traditional media such as television, radio, and newspapers still widely used by people.

Conversely, in the GII 2012 (Dutta, S. & INSEAD, 2012) highlighted, "*reliable metrics in this field are only nascent or difficult to access*". Besides that, confidentiality, privacy, reliability of sources, and wide range of "Internet properties" are challenges for measuring media, especially social media (Dutta, S. & INSEAD, 2012). Benjamin, Scott and Reger, Rhonda K. and Pfarrer, Michael D. (2012) also pointed out that, "*…neither innovation scholar nor media researchers have empirically examined the role of media in the innovation diffusion process.*"

As a result of the literature search mentioned above, this research report decided to take ICT, Scientific and Technical Journal Articles, National feature films produced, Daily newspapers circulation, Wikipedia monthly edits, Video Uploads on YouTube, Broadcast Media, Search Engine (Google), and Social Media (Facebook) as media indicators or independent variables. Among search engines, Google in general is ranked number one in most of the countries, therefore, specifically used it as variable. Same theory applied to Facebook case for Social Media variable.

The qualitative research is referred to a research which might be included descriptive, correlation, experimental and, or quasi-experimental. In general, descriptive and correlation are designated for studies to examine variables in their natural environment; experimental and quasi-experimental studies are mainly to examine cause and effect (Kianinejad, A., 2012). Usually, these studies conducted for investigate the differences between dependent variables and independent variables. Therefore, the researchers should know some basic understanding about statistical models, regression models. Etc.

According to Field, A. (2000), introduced that,

> "*Statistical model normally was built by taking the available data and to use the data involves for the phenomenon of interest. Sample is the data collected from a small subset of the population and use these data infer things about the population as a whole."*

The frequency distribution is also known as histogram. It is a bar chart which showing how many times each value of observations occurred in the sample. Besides that, it is very useful for assessing properties of the distribution of scores (Field, A., 2005). The tallest bar in a chart is represented as the mode, which is the most frequently occurred score in the data set.

There are some general descriptions to describe different shapes of the frequency distribution. When the data are distributed symmetrically around the centre of all scores, then it is known as a normal distribution and will be characterized like a bell-shaped curve in a bar chart. This is because the largest scores are all around the central, and the small scores are frequency that decreasing and getting far away from centre of the bar chart.

About Frequency distributions, there are two main properties, which tell us a distribution can deviate from normal. These two properties are skewness and kurtosis.

Skewness or lack of symmetry distribution is most of the frequent scores in the bar chart are typically clustered at one end of the scale (Field, A, 2005). Skewness is considered as positively skewed (see **Figure 3.1**) while the lower end scores clustered by the frequent score and the tail points are towards the higher of the positive scores. In contrast, negative skewed (see **Figure 3.2**) when the frequent scores are clustered at the higher positive scores in the bar chart, and the tail points towards the lower negative scores.

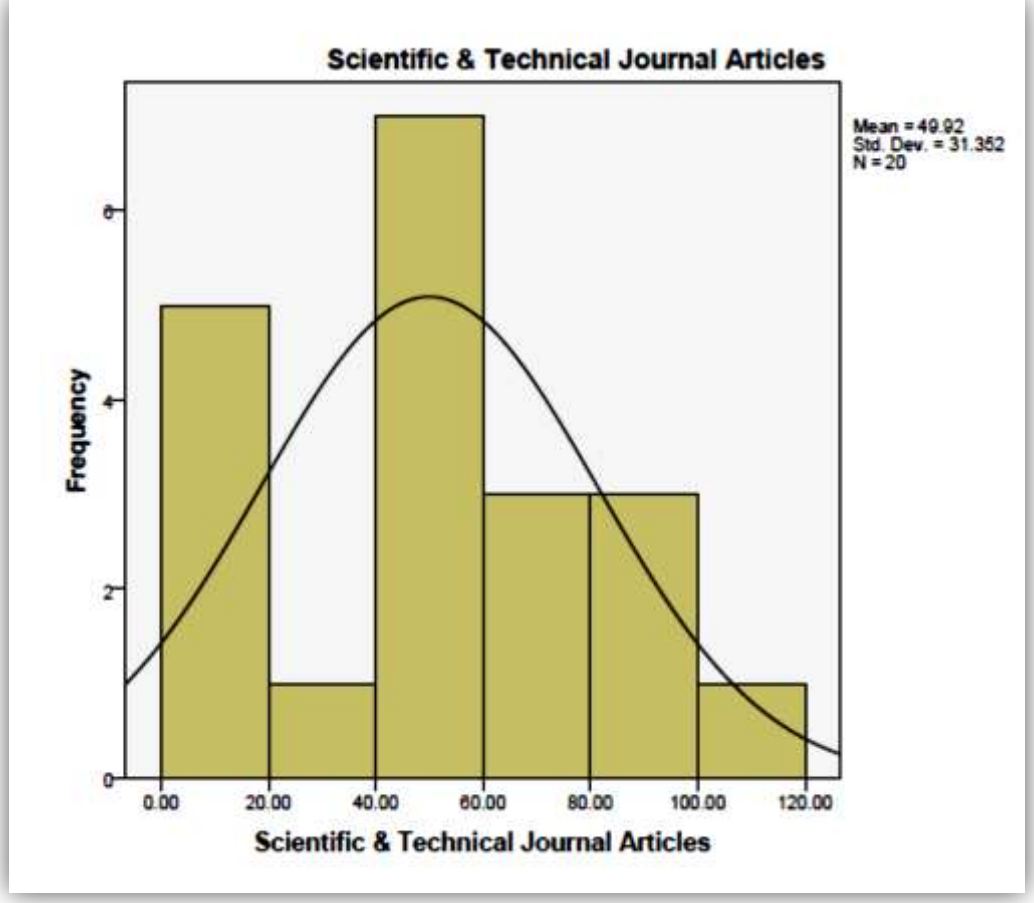


Figure 3.1 Positive Skewed

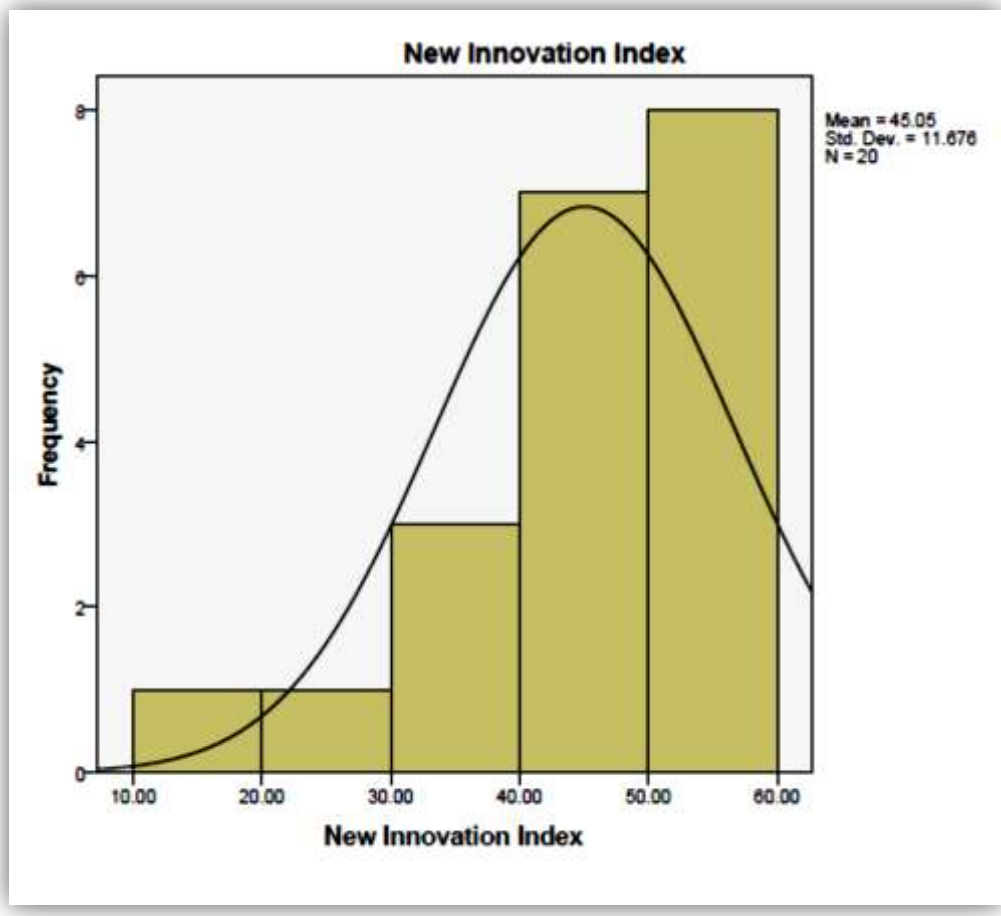


Figure 3.2 Negative Skewed

Kurtosis or pointyness is to tell how flat a distribution is, and example referred to the degree of scores cluster in the tails of the distribution. A distribution has many scores clustered in the tails is known as platykuric distribution. Conversely, if the tails is less clustered in the tails, it is named as leptokurtic distribution.

As a summary of normal distribution, when the value of skew and kurtosis are zero, it is normal distribution. If the values of skew or kurtosis is below zero or above for a distribution, it indicates that it is a deviation from normal. But, Field, A. (2005) highlighted that, "*z score is a way of standardizing a mean and a standard deviation…can take any variable measured in any units and convert it to a z-score…compare any scores…*"

Dutta, S. & INSEAD. (2012) stated that some recommendations of the JRC, one of them are "*problematic indicators were identified by a combination of skewness and kurtosis statistics where absolute value of skewness greater than 2, and kurtosis greater than 3.5"*. Furthermore, it also highlighted that "*based on Groeneveld Meeden, 1984, which sets the criteria of absolute skewness above 1 and kurtosis above 3.5 was relaxed to account for the small sample*". Therefore, this report will based on information mentioned the GII 2012.

Field, A. (2000) defined that, "*A correlation is measure of the linear relationship between variables*". Moreover, it could be positively or negatively related or not related at all. Bivariate Correlation is referred to a correlation between two variables. There are three types of Correlation Coefficients in SPSS such as Pearson, Kendall's tau-b, and Spearman. Pearson's correlation coefficients applied while it is parametric data which measureable. Kendall's tau-b, and Spearman's correlation coefficients are non-parametric correlation.

In addition, a hypothesis can be tested either one-tailed or two-tailed. One-tailed test is used for a specific direction to the hypothesis being tested. On the other hand, two-tailed test is used for a relationship is expected but the direction of the relationship is not predicted (Field, A, 2000).

Regression analysis is to tell us the fitness of a predictive model to data set which had used for predicting scores of the dependent variables. In general, there are two types of regressions: Simple regression, and multiple regression. For single regression, only need one independent variable (VI) or predictor, and an outcome (dependent variable or DV) to do analysis. The equation of Single regression as the following: -

$Outcome_i = (Model_i) + error_i$ Or

$Y_i = (b_0+b_1X_i) + e_i$

Y is represented outcome. b_0 and b_1 are regression coefficients; b_0 as the intercept of a line. The b_1 is regression coefficients associated with variable *i*. In addition, e_i

represented residual term, which difference between the score predicted by the line for participant *i*, and the actual obtained score that participant *i* (Field A, 2005).

Multiple regression is sought for predict an outcome from several predictors (Field A, 2005), the equation as below: -

$$Y_i = (b_0 + b_1X_1 + b_2X_2 + ... b_nX_n) + e_i$$

Y is outcome, coefficient for the first predictor X_1 is b_1. Same theory applied to bn Xn. ei is difference between predicted and observed of Y for the i participant (Field, A, 2005).

Force entry (in SPSS is known as Enter), and Blockwise Entry are methods of regression which predictors can be entered all in one model. The difference between Force entry and Blockwise entry is blockwise entry, enter predictors all in one, in a stepwise manner. The predictors are in the order based on a purely mathematical criterion (Field, A, 2005).

Field, A. (2000) explained

> *"R is the correlation between the observed values of U and the values of Y predicted by the regression model. It represents a situation in which the model perfectly predicts the observed data."*

Besides, that R^2 or R square is the amount of variation in the outcome variable that accounted for the model (Field, A., 2000). Adjusted R2 is indicated the loss predictive power or shrinkage. Significance or p value (labeled as Sig. in Analysis of Variance/ ANOVA table) is represented the contribution of the predictor. It is greater contribution while Sig. has small value example p value is less than 0.01 or less than 0.05. For assumption testing, Osborne, Jason & Elaine Waters (2002) highlighted that, assumptions of linearity, reliability of measurement, homoscedasticity, and normality should always test.

Chapter 4| Data Development

As seen in the previous chapter, the literature review indicates that media is an increasing more important platform for creativity and innovation. This chapter is mainly talking about the nature of data, and methods to be used to manipulate data in this study. Besides, it also clarifies this research report is covering 20 countries' innovation index which measured by 84 indicators as same as in the GII 2012 report that belongs to 7 pillars of innovation, covering 141 countries.

The Global Innovation Index (GII) 2012 as was discussed in Chapter 2 used only 84 indicators, which categorized into 7 pillars of innovation (see Table 4.1). Some indicators are related to media, but there is no a pillar which is specifically form as media. These 7 pillars of innovation, each pillar has 3 sub pillars. Each sub pillar has at least 3 indicators or some particular sub pillars have as many as 6 indicators.

Figure 4.1 shows the conceptual framework is applied in this paper. Step 1 data selection and Step 2 score calculation will be discussed in this chapter. On the other hand, Step 3 Model Regression and Step 4 Assumption Testing will be discussed in Chapter 5 Modelling. For further understanding about the Global Innovation Index (GII) reports and history, see Chapter 2. Data tables, and country or economy profiles are available in Appendix 2, Appendix 3, and Appendix 4.

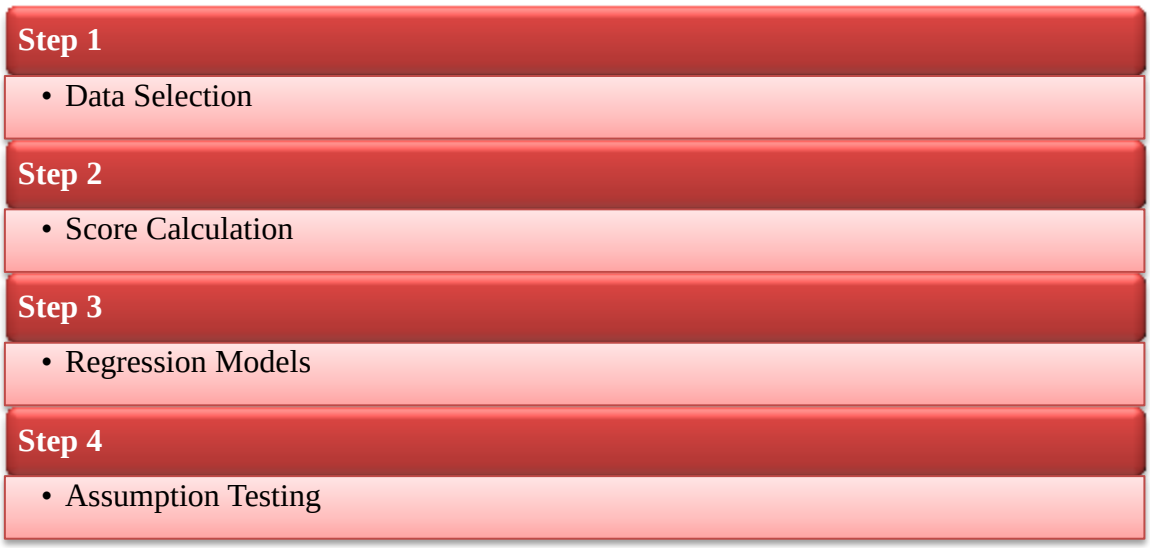


Figure 4.1: Conceptual Framework

Step 1: Data Selection

Data selection is selection of the countries, indicators of innovation, and indicators related to media, data which are used for generating the new innovation index.

The size of sample for this paper is using 20 selected countries. These twenty selected countries are Switzerland (CH), Sweden (SE), Singapore (SG), Hong Kong (HK), Netherlands (NL), United Kingdom (GB), United States of America (US), Denmark (DK), Canada (CA), Finland (FI), Republic of Korea (KR), Ireland (IE), Germany (DE), Norway (NO), Estonia (EE), China (CN), Malaysia (MY), Qatar (QA), India (IN), and Islamic Republic of Iran (IR). In general, this sample is mainly selecting ten innovative countries from Europe, eight countries from Asia, and two countries from Northern America (See Table 4.1).

In general, the sample used for this paper had fourteen out of the selected twenty countries are population below 50 million (Year 2011) and covered all the three listed regions. Besides that, three countries are population between 50.1 to 100.0 million, which is countries from Asia and Europe. One listed country from Northern America region has population between 100.1 to 500.0 million. There are two countries from Asia have population more than 1000.1 and below 1500.0 million. See Table 4.1 to get the completed number of population in year 2011) but to get the population in year 2011 and 2012 of the relevant countries, see Appendix 3.

The sample is only covered three groups of income level. Firstly, the lower-middle level (LM), which income range is from $996 to $3,945 and the country is from Asia. Secondly, the upper-middle income level is referring to income range from $3,946 to $12,195 and countries in the Asia region. Thirdly, the high income level is income range from $ 12,196 or more. Most of the countries in Europe, and Northern America listed in this sample are high income level countries; In Asia has Singapore, Hong Kong, Qatar, and Republic of Korea. These income levels stated in the GII 2011 was according to the Income Group Classification, January, 2011 (Dutta, S. &INSEAD, 2011).

Table 4.1 List of the Selected 20 Countries

Country Code	In million population (Year 2011)	Region	Income Level
EE	1.3	Europe	HI
QA	1.5	Asia	HI
IE	4.6	Europe	HI
SG	4.8	Asia	HI
NO	4.9	Europe	HI
FI	5.3	Europe	HI
DK	5.5	Europe	HI
HK	7.1	Asia	HI
CH	7.6	Europe	HI
SE	9.2	Europe	HI
NL	16.7	Europe	HI
MY	27.9	Asia	UM
CA	33.9	Northern America	HI
KR	48.5	Asia	HI
GB	61.9	Europe	HI
IR	75.1	Asia	UM
DE	82.1	Europe	HI
US	317.6	Northern America	HI
IN	1214.5	Asia	LM
CN	1354.1	Asia	UM

Source: Compiled from Dutta, S. & INSEAD. (2011).

Notes: -
Lower-middle Income Level (LM): $996 to $3,945
Upper-middle Income Level (UM): $3,946 to $12,195
High Income Level (HI): $12,196 or more

Table 4.2 is stated the selection of countries should be fulfilled Criteria A and, or Criteria B at least 15 selected countries were stated in the Figure 4.2. The year 2011 will be selected as a main key year to do the relevant selection of data for score calculation purpose. In addition, it is also because this paper was focused on the GII 2011 report at the beginning since started the research. Criteria A is referring to the country ranked in the Top hundred countries in the GII 2011. Furthermore, Criteria B is referred to the country ranked as number 1 for the selected indicator.

Figure 4.2 in this paper shows an example of perfect world for innovation and illustrated it by using selected indicators with its' top ranking country from the GII 2012 (WIPO, 2012). Just as regulatory quality in the GII 2012, Denmark was ranked number one, so in **Table 4.2** only the country which ranked as number one for the selected indicators will be indicated of "Y" (represented as Yes). As the result, there are only fifteen countries out of the selected twenty countries were found in **Figure 4.2**., excluded Netherlands, United Kingdom, United States of America, Canada, and India.

For example, imagining the perfect world for innovation in the GII 2012 presented in **Figure 4.2**, and breaks it down into Asia, and Europe regions. The following are the strengths by these two regions compare to 141 countries in the GII 2012 (Dutta, S. & INSEAD, 2012):-

In Asia,

- Qatar has the best ease of paying taxes (1.2.1).
- Korea has the strongest tertiary school enrolment (2.2.1).
- Iran has the most many graduates in science and engineering (2.2.2).
- Hong Kong has the best ICT access (3.1.1).
- Singapore has the highest employment in knowledge-intensive services (5.1.1).
- Malaysia has the highest gross expenditure on R& D (GERD) finance by business enterprise (5.1.4). and,
- China has the best national office utility model applications (6.1.3).

In European,

- Denmark has the strongest regulatory quality (1.2.1).
- Germany has the best trade and transport-related infrastructure (3.2.3).

- Switzerland has the best environmental performance (3.3.2).
- Sweden has the greatest venture capital deals (4.2.4).
- Ireland has the highest computer and communications service imports (5.3.3).
- Finland has the highest computer and communication service exports (6.3.3).
- Norway has the highest recreation and culture consumption (7.2.1).
- Estonia has the high Wikipedia monthly edits (7.3.3).

Both of the countries from Northern America which listed in the sample were not found in the **Figure 4.2.** The countries which listed in the perfect world for innovation example (**Figure 4.2**) are ranked as number one for the selected indicators. In addition, Netherlands, United Kingdom, and India also not listed in the example. Moreover, these five countries Canada, United States, Netherlands, United Kingdom, and India in the GII 2012, do not ranked number one in any 84 indicators of innovation.

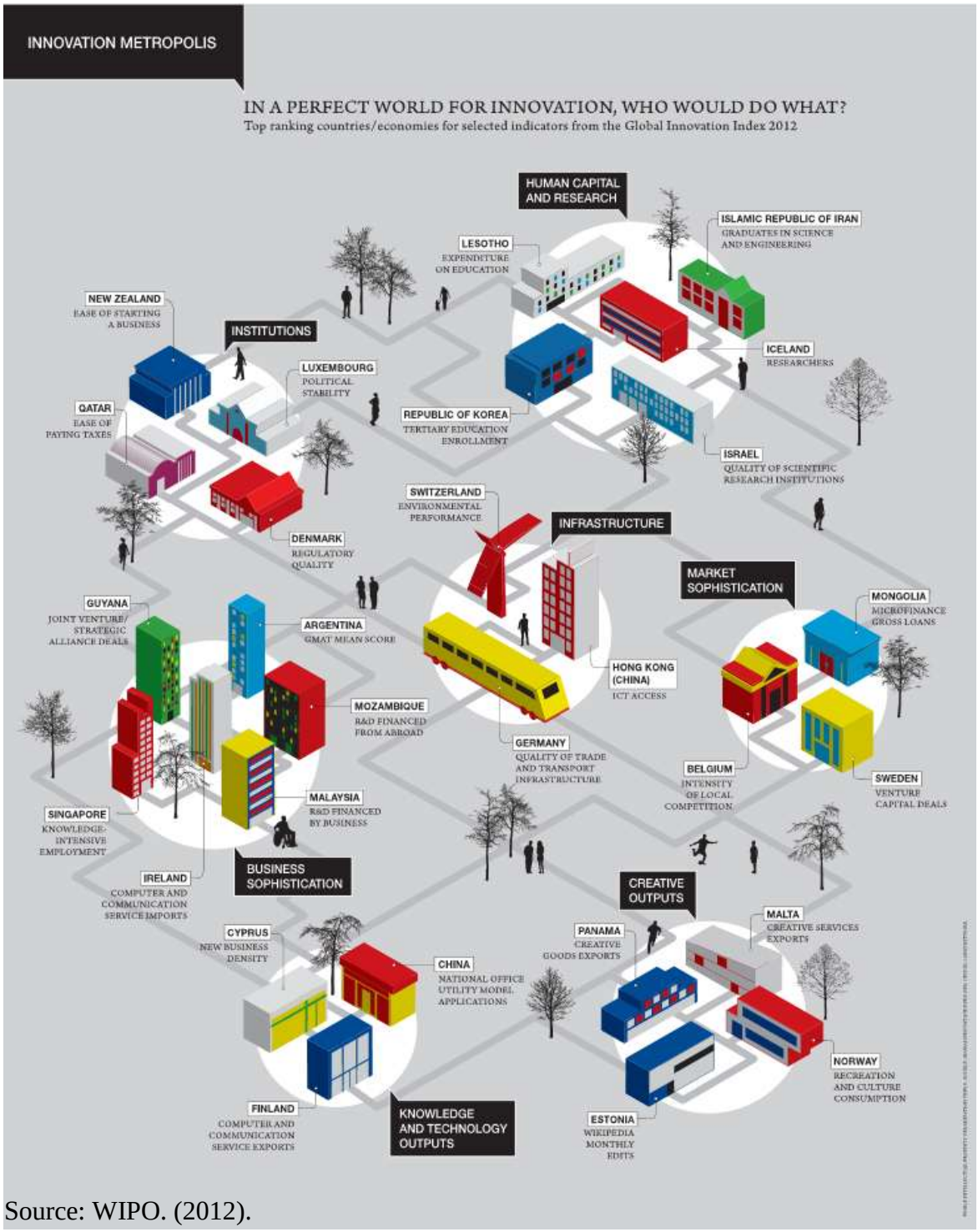
Table 4.2 Selection of Countries

Criteria \ Countries	CH	SE	HK	NL	GB	US	SG	DK	CA	FI	KR	IE	DE	NO	EE	CN	MY	QA	IN	IR
A. The country is ranked in the Top 100 counries in the GII 2011. &, OR	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
B. It is ranked as number 1 in below selected indicators (See Figure 4.2)																				
1.2.1 Regulatory quality	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N
1.3.3 Ease of paying taxes	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N
2.2.1 Tertiary school enrolment	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	N
2.2.2 Graduates in science and engineering	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y
3.1.1 ICT access	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
3.2.3 Trade and transport-related infrastructure	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N
3.3.2 Environmental performance	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
4.2.4 Venture capital deals	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
5.1.1 Employment in knowledge-intensive services	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N
5.1.4 GERD financed by business enterprise	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N
5.3.3 Computer and communications service imports	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	N
6.1.3 National office utility model applications	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N
6.3.3 Computer and communications service exports	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	N
7.2.1 Recreation and culture consumption	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N
7.3.3 Wikipedia monthly edits	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N

Source: Compiled from Dutta, S. & INSEAD. (2011) and WIPO.(2012).

Notes: -

1. Y is represented Yes.
2. N is represented No.
3. NL, GB, US, CA & IN are countries do not listed in Figure 4.2.



Source: WIPO. (2012).

Figure 4.2 an example of perfect world for innovation and illustrated it by using selected indicators with its' top ranking country from the GII 2012

In order to get new innovation index, recalculation is necessary for the sample size of the twenty selected countries. This is because the innovation index in the GII 2011 (had 80 indicators, covered 125 countries) and GII 2012 (had 84 indicators, covered 141 countries) were different in the size of sample. These indicators are not yet exclude indicators that related to media. Further details about different in terms of number of countries and indicators had used in the relevant reports, see Chapter 2.

As the result, in selection data decided total indicators will used for score calculation purpose is eighty four indicators. The selection of data and indicators set the indicators in data table 2012 priority to high, because it is the latest data dated up to year 2011. In case, found any missing indicators or different indicators content between data tables for innovation index 2011 and data tables 2012 then it takes indicators in the data tables of innovation index 2012.

The mode year of data collected in data tables of innovation index 2012 is basically the year of data which below and equal to year 2011. Therefore, it can be used for creation of data tables. Data tables are referring to a table of an indicator which stated value and score of the selected twenty countries. The value is actual value collected from the relevant source. The score is range with 0 to 100 which average that based on the total selected records or the sample. This kind of data tables are used for score calculation of innovation index in a country or economy profile (see **Step 2: Score Calculation**).

Basically, the mode year of data were collected from 2000 to 2012. The following 35 indicators which used for generating data tables of innovation index 2011, and data tables of innovation index 2012, the Mode year is same to each other: -

- 1.2.3 Cost of redundancy dismissal
- 1.3.1 Ease of starting a business
- 1.3.2 Ease of resolving insolvency
- 1.3.3 Ease of paying taxes
- 2.1.4 Assessment in reading, mathematics, and science
- 2.2.2 Graduates in science and engineering
- 2.2.3 Tertiary inbound mobility

- 2.2.4 Gross tertiary outbound enrolment
- 3.2.3 Trade and transport-related infrastructure
- 3.2.4 Gross capital formation
- 3.3.1 GDP per unit of energy use
- 3.3.2 Environmental performance
- 3.3.3 ISO 14001 environmental certificates
- 4.1.1 Ease of getting credit
- 4.1.2 Domestic credit to private sector
- 4.2.1 Ease of protecting investors
- 4.3.2 Market access for non-agricultural exports
- 5.1.1 Employment in knowledge-intensive services
- 5.1.2 Firms offering formal training
- 5.1.5 GMAT mean score
- 5.1.6 GMAT test takers
- 5.2.5 Share of patents with foreign inventor
- 5.3.2 High-tech imports
- 5.3.3 Computer and communications service imports
- 6.1.2 Patent Cooperation Treaty applications
- 6.2.2 New business density
- 6.2.4 ISO 9001 quality certificates
- 6.3.2 High-tech exports
- 6.3.3 Computer and communications service exports
- 7.2.2 National feature films produced
- 7.2.3 Daily newspaper circulation
- 7.3.1 Generic top-level domains (gTLDs)
- 7.3.2 Country-code top-level domains (ccTLDs)
- 7.3.3 Wikipedia monthly edits
- 7.3.4 Video uploads on YouTube

The new innovation index is also decided to measure by 84 indicators in 7 pillars of innovation (See **Table 4.3**). There are 84 indicators, 21 sub-pillars, and 7

pillars. The indicators had designated weight of 0.5 and 1 (Dutta, S. & INSEAD, 2012; GII 2012 – Analytical – Tool – Alcatel – Lucent).

Scores of the Pillar 1 to Pillar 5 are given a weight of 0.2 to use for the Innovation Input Sub-Index calculation. And, calculation of the Innovation Output Sub-Index will used Pillar 6 and 7 which are given a weight of 0.5. In fact, most of the sub-pillars are given a weight of 1, excluded the Sub-pillar 7.2, and Sub-pillar 7.3 which are given a weight of 0.5. **Table 4.3** shows list of 84 indicators and weight. It shows that 21 indicators are given a weight of 0.5, and 63 indicators are given a weight of 1.

Seven indicators related to media are in the list of 84 indicators and Weight (see **Table 4.3**). The innovation index has been calculated using scores included these seven indicators. In order to make index independent from these seven indicators, these indicators will be removed and recalculated all scores then a new innovation index will be formed. These 7 indicators are listed below: -

- ICT Access as a composite index in the GII 2012 defined that it is covered five ICT indicators: (1) Fixed telephone lines per 100 inhabitants; (2) Mobile cellular telephone subscriptions per 100 inhabitants; (3) International Internet bandwidth (bit/s) per Internet user; (4) Proportion of households with a computer; and (5) Proportion of households with Internet access at home (Dutta, S. & INSEAD, 2012). Furthermore, ICT use is also as a composite index which included three ICT indicators: (1) Internet users per 100 inhabitants; (2) Fixed broadband Internet sub-scribers per 100 inhabitants; (3) Mobile broadband subscriptions per 100 inhabitants ((Dutta, S. & INSEAD, 2012).

- 3.1.1 ICT Access represented ICT Access index is a composite index that covered five ICT indicators: (1) Fixed telephone lines per 100 inhabitants; (2) Mobile cellular telephone subscriptions per 100 inhabitants; (3) International Internet bandwidth (bit/s) per Internet user; (4) Proportion of households with a computer; and (5) Proportion of households with Internet access at home (Dutta, S. & INSEAD, 2012).

Table 4.3 List of 84 Indicators and Weight

Indicators	Weight
1. Institutions	0.2
1.1 Political environment	1
1.1.1 Political stability	1
1.1.2 Government effectiveness	1
1.1.3 Press freedom	1
1.2 Regulatory environment	1
1.2.1 Regulatory quality	0.5
1.2.2 Rule of law	0.5
1.2.3 Cost of redundancy dismissal	1
1.3 Business environment	1
1.3.1 Ease of starting a business	1
1.3.2 Ease of resolving insolvency	1
1.3.3 Ease of paying taxes	1
2. Human capital and research	0.2
2.1 Education	1
2.1.1 Expenditure on education	1
2.1.2 Public expenditure on education per pupil	1
2.1.3 School life expentancy	1
2.1.4 Assessment in reading, mathematics, and scienc	0.5
2.1.5 Pupil-teacher ratio	1
2.2 Tertiary education	1
2.2.1 Tertiary school enrolment	0.5
2.2.2 Graduates in science and engineering	1
2.2.3 Tertiary inbound mobility	0.5
2.2.4 Gross tertiary outbound enrolment	0.5
2.3 Research & development	1
2.3.1 Researchers	1
2.3.2 Gross expenditure on R&D (GERD)	1
2.3.3 Quality of research institutions	1
3. Infrastructure	0.2
3.1 ICT	1
3.1.1 ICT access	1
3.1.2 ICT use	1
3.1.3 Government's online service	1
3.1.4 Online participation	1
3.2 General infrastructure	1
3.2.1 Electricity output	0.5
3.2.2 Electricity consumption	0.5
3.2.3 Trade and transport-related infrastructure	1
3.2.4 Gross capital formation	1
3.3 Ecological sustainability	1
3.3.1 GDP per unit of energy use	1
3.3.2 Environmental performance	1
3.3.3 ISO 14001 environmental certificates	1

Indicators	Weight
4. Market sophistication	0.2
4.1 Credit	1
4.1.1 Ease of getting credit	1
4.1.2 Domestic credit to private sector	1
4.1.3 Microfinance institutions' gross loan portfolio	1
4.2 Investment	1
4.2.1 Ease of protecting investors	1
4.2.2 Market capitalization	1
4.2.3 Total value of stocks trade	1
4.2.4 Venture capital deals	1
4.3 Trade & competition	1
4.3.1 Applied tariff rate	1
4.3.2 Market access for non-agricultural exports	1
4.3.3 Import of goods and services	0.5
4.3.4 Exports of goods and services	0.5
4.3.5 Intensity of local competition	1
5. Business sophistication	0.2
5.1 Knowledge workers	1
5.1.1 Employment in knowledge-intensive services	1
5.1.2 Firms offering formal training	1
5.1.3 GERD performed by business enterprise	0.5
5.1.4 GERD financed by business enterprise	0.5
5.1.5 GMAT mean score	0.5
5.1.6 GMAT test takers	0.5
5.2 Innovation linkages	1
5.2.1 University/ industry research collaboration	1
5.2.2 State of cluster development	1
5.2.3 GERD financed by abroad	1
5.2.4 Joint venture/ strategic alliance deals	0.5
5.2.5 Share of patents with foreign inventor	0.5
5.3 Knowledge absorption	1
5.3.1 Royalty and license fees payments	1
5.3.2 High-tech imports	1
5.3.3 Computer and communications service imports	1
5.3.4 Foreign direct investment net inflows	1
6. Knowledge and technology outputs	0.5
6.1 Knowledge creation	1
6.1.1 National office patent applications	1
6.1.2 Patent Cooperation Treaty applications	1
6.1.3 National office utility model applications	1
6.1.4 Scientific and Technical Journal Articles	1
6.2 Knowledge impact	1
6.2.1 Growth rate of GDP per person engaged	1
6.2.2 New business density	0.5
6.2.3 Total computer software spending	0.5
6.2.4 ISO 9001 quality certificates	0.5
6.3 Knowledge diffusion	1
6.3.1 Royalty and license fees receipts	1
6.3.2 High-tech exports	1
6.3.3 Computer and communications service exports	1
6.3.4 Foreign direct investment net outflows	1
7. Creative outputs	0.5
7.1 Creative outputs	1
7.1.1 National office trademark registrations	1
7.1.2 Madrid Agreement trademark registrations	1
7.1.3 ICT and business model creation	1
7.1.4 ICT and organizational models creation	1
7.2 Creative goods and services	0.5
7.2.1 Recreation and culture consumption	1
7.2.2 National feature films produced	0.5
7.2.3 Daily newspaper circulation	0.5
7.2.4 Creative goods exports	1
7.2.5 Creative services exports	1
7.3 Online creativity	0.5
7.3.1 Generic top-level domains (gTLDs)	1
7.3.2 Country-code top-level domains (ccTLDs)	1
7.3.3 Wikipedia monthly edits	1
7.3.4 Video uploads on Youtube	1

Legend

Pillar with weight used for calculating score of the Innovation Index
Sub-pillar with weight used for calculating score of the Pillar
Indicator with weight used for calculating score of the Sub-pillar

Source: Compiled from Dutta, S. & INSEAD. (2012), and GII 2012 – Analytical – Tool – Alcatel – Lucent.

Notes: -

1. There are 21 Indicators have weight of 0.5, and 63 indicators have weight of 1.
2. Most of the sub-pillar have weight of 1, except Sub-pillar of 7.2 & 7.3.
3. Pillar 1, 2, 3, 4, and 5 have weight of 0.2 for calculating the Innovation input sub-index.
4. Pillar 6 and 7 have weight of 0.5 for calculating the Innovation output sub-index.

- 3.1.2 ICT Use represented ICT Use Index is a composite index that included three ICT indicators: (1) Internet users per 100 inhabitants; (2) Fixed broadband Internet sub-scribers per 100 inhabitants; (3) Mobile broadband subscriptions per 100 inhabitants ((Dutta, S. & INSEAD, 2012).

- 6.1.4 Scientific and Technical Journal Articles referred to number of scientific and technical journal articles per billion, gross domestic product per capita based on purchasing power parity in international dollars (per billion PPP $ GDP).

- 7.2.2 National feature films produced referred to number of national feature films produced (per million population 15-69 years old).

- 7.2.3 Daily newspaper circulation referred to Paid-for dailies average circulation (per thousand population 15-69 years old).

- 7.3.3 Wikipedia monthly edits referred to Wikipedia monthly page edits per adult (per population 15-69 years old).

- 7.3.4 Video uploads on YouTube referred to number of video uploads on YouTube (scaled by population 15-69 years old).

The 3.1.1 ICT Access and 3.1.2 ICT Use will be combined, and named as ICT (Access and Use). Moreover, three more media indicators will be added to a list which formed nine independent variables for multiple regression analysis purpose, to ensure the diversity of data. The new added three media indicators are listed below: -

- Broadcast Media referred to number of TV and Radio Networks, Channels, and Stations, or licenses (for both publicly-own, private-own in terms of nationwide or regional).

- Search Engine (Google) referred to Google Market Share in percentage.

- Social Media (Facebook) referred to Facebook Market Share in percentage.

Table 4.4 shows the list of variables which used for statistical model and multiple regression analysis purposes. The ten variables are New Innovation Index (nii), ICT (Access & Use) or ict_anu, Scientific and Technical Journal Articles (stja), Video Uploads on YouTube (YouTube), Daily Newspapers Circulation (daily), Social Media (Facebook) or smediaF, National Feature Films Produced (nffilms), Wikipedia Monthly Edits (wiki), Broadcast Media (bmedia), and Search Engine (Google) or sengineG. These data were collected from ten sources with named as 1 to 10 listed under the **Table 4.4.**

During the data collecting found some challenges such as missing data, and data uncertainty. The missing data will marked as "n/a" but when do the statistical model and multiple regression analysis, the "n/a" will replaced with zero to avoid any record uncountable risk. Ensure the twenty selected records (country data) will be counted in the multiple regression analysis. Besides that, the data uncertainty example such as the market shares of search engine (Google), especially in Republic of Korea. StatCounter GlobalStats. (2012) stated that, Google had 70.46% market shares in Republic Korea as the main search engine that use by people in the country but found other sources said Google is not the one had the biggest market shares.

According to Webcertain Education Ltd. (2012) stated that the Republic of Korea, Naver has 70% of the internet users in the country, Google is not the main search engine used by the users. Meanwhile, another literature search found Goodwin, D. (2011) was also pointed out that "*Google has a 20 percent mobile market share in South Korea, despite only having 2 percent market share of desktop search…*" and illustrated that Google is not a major player of search engine in Republic of Korea. But, the data which used for multiple regression at this stage will be based on StatCounter Clobal Stats (2012) data.

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Table 4.4 List of Variables

No.	Title	Short Title	Variable	Year	Description	Source (see the notes below this table)
1	New Innovation Index	nii	Y	2011 & 2012	It is a new innovation index that without indicators related to media after the re-calculation process had been done. It is known as dependent variable (DV) or outcome variable.	1
2	ICT(Access & Use)	ict_anu	X_1	2008 & 2010	This variable is a composite index that covered five ICT indicators (details also had stated in this chapter). It is the first Independent Variable (IV) in this list or known as predictor variable.	2 and 3
3	Scientific and Technical Journal Articles	stja	X_2	2007 & 2009	It is number of scientific and technical journal articles (per billion PPP $ GDP). This is the second IV.	2 and 3
4	Video Uploads on YouTube	YouTube	X_3	2011 & 2011	This third IV is measured by number of video uploads on YouTube (scaled by population 15-69 years old).	2 and 3
5	Daily Newspapers Circulation	daily	X_4	2009 & 2009	The fourth IV is measured by Paid-for dailies average circulation (per thousand population 15-69 years old)	2 and 3
6	Social Media (Facebook)	smediaF	X_5	2011 & 2012	It is measured by the Facebook Market Share (%), and represented as the fifth IV. For social media,	4 and 5

					indicator will be selected, based on the global market share and, or ranking is number one in the particular country market share. Therefore, in this case Facebook had been selected.	
7	National Feature Films Produced	nffilms	X_6	2009 & 2009	It is measured by number of national feature films produced (per million population 15-69 years old), and represented as the sixth VI.	2 and 3
8	Wikipedia Monthly Edits	wiki	X_7	2011 & 2011	It measured by the Wikipedia monthly page edits per adult (per population 15-69 years old), and represented as the seventh VI.	2 and 3
9	Broadcast Media	bmedia	X_8	2007, 2008, 2009, 2010, 2011 & 2012	It is number of TV and Radio Networks, Channels, and Stations, or licenses (for both publicly-own, private-own in terms of nationwide or regional), and represented as the eighth VI. Data uncertainty was found during data collecting, example there are unknown of large number of Private Radio broadcasters, Cable or Satelite TV systems, and TV broadcasters. Therefore, this paper only collected the number of broadcast media had listed in the CIA: the World Factbook, Freedom House, and the relevant source only.	6, 7, 8, 9 and 10
10	Search Engine (Google)	sengine G	X_9	2011 & 2012	It is measured by the Google Market Share (%), and represented as the nineth VI.	4 and 5

					For search engine, indicator will be selected, based on the global market share and, or ranking is number one in the particular country market share. Therefore, in this case Facebook had been selected.	

Notes: Source 1 to Source 10 are listed as the following: -

1. The recalculation which is based on data tables in this research.
2. Dutta, S. & INSEAD. (2011)
3. Dutta, S. & INSEAD. (2012).
4. StatCounter GlobalStats. (2011).
5. StatCounter GlobalStats. (2012).
6. CIA. (2013).
7. Hong Kong Government Yearbook. (2011).
8. Hong Kong Government Fact sheets. (2012)
9. Freedom House. (2011).
10. Freedom House. (2012).

Step2: Score Calculation

This explanation is divided into two parts. First part is discussed about good score and bad score calculation methods. Demonstration of the selected data tables will be used as examples to illustrate basic understanding of the relevant calculation, and difference of the method. Second part is referring to the country or economy profile (see **Appendix 4**), referring to the GII 2012 report data, to demonstrate the concepts of simple average, and weighted average methods had applied for generating scores of each pillar, sub-pillar and innovation index.

Figure 4.3 shows the method of two formulas had used in the data tables (Appendix 2, and Appendix 3) which based on the method for good score, and method for bad score. The good score defined as when the score is high, it interpreted as good progress or impact on the innovation index of a nation. Besides that, the bad score defined as when the score is high, it represented as bad impact on the innovation index of a nation. The formula as the following shown: -

Good Score

100 x (Country value - minimum value)/ (maximum value – minimum value)

Bad Score

- 100 x (Country value – minimum value)/ (maximum value – minimum value) + 100

Figure 4.3 Methods of the Good Score, and Bad Score

Example for Good Score Calculation, **Table 4.5** shows the value, and score for 3.1.1 ICT access indicator which used for calculating the innovation index 2012. This indicator is if the higher of the value, it will represented that the better it is. Therefore it can use the good score method (see **Figure 4.3**) in this case.

The data in **Table 4.5** had sorted by Value as descending order from the beginning. In case, want to calculate score of Malaysia for this indicator, the minimum value in the table is 2.37, the maximum value out of the 20 record is 9.06, and Malaysia had value as 4.60 (country value). The calculation can be done as the **Figure 4.4**.

Table 4.5 Data Table of the 3.1.1 ICT access (for Innovation Index 2012)

3.1.1 ICT access

Information and Communication Technologies (ICT) access index (0-100)| 2010

Rank	Ccode	Country	Value	Score (0-100)
1	HK	Hong Kong (China)	9.06	100.00
2	CH	Switzerland	8.70	94.62
3	SE	Sweden	8.57	92.68
4	DE	Germany	8.41	90.28
5	GB	United Kingdom	8.36	89.54
6	DK	Denmark	8.33	89.09
7	NL	Netherlands	8.29	88.49
8	KR	Korea, Rep.	8.21	87.29
9	SG	Singapore	8.14	86.25
10	NO	Norway	7.88	82.36
11	FI	Finland	7.61	78.33
12	IE	Ireland	7.45	75.93
13	CA	Canada	7.43	75.64
14	US	United States of America	7.24	72.80
15	QA	Qatar	7.09	70.55
16	EE	Estonia	6.91	67.86
17	MY	Malaysia	4.70	34.83
18	IR	Iran, Islamic Rep.	4.60	33.33
19	CN	China	3.86	22.27
20	IN	India	2.37	0.00

Good Score

100 x (Country value - minimum value)/ (maximum value – minimum value)

$Score_{my}$= 100 x (4.70 – 2.37)/ (9.06 – 2.37)
= 100 x (2.33)/ 6.69
= 100 x 0.34828
= 34.83

Figure 4.4 Good Score Calculation

Example of Bad Score Calculation, **Table 4.6** shows the value, and score for the 1.1.3 Press freedom will be used for generating Innovation Index 2012. The press freedom index is lower represented the particular country had high and better press freedom environment. In contrast, the higher press freedom index will meant the press freedom in the particular country was bad. Therefore, for this 1.1.3 Press freedom indicator should use the bad score method.

This table had sorted by Score (as descending order) after completed done the bad score calculation. Therefore, in this example demonstration will talk the procedures start from the beginning. At the beginning, the table will be sorted by Value (as descending order), and applied the bad score method (see **Figure 4.3**). The higher of the Values will scored the lower of the scores.

Table 4.6 Data Table of the 1.1.3 Press freedom (for Innovation Index 2012)

1.1.3 Press freedom

Press freedom index | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	FI	Finland	-10.00	100.00
2	NO	Norway	-10.00	100.00
3	EE	Estonia	-9.00	99.32
4	NL	Netherlands	-9.00	99.32
5	CH	Switzerland	-6.20	97.41
6	CA	Canada	-5.67	97.05
7	DK	Denmark	-5.67	97.05
8	SE	Sweden	-5.50	96.93
9	IE	Ireland	-4.00	95.91
10	DE	Germany	-3.00	95.23
11	GB	United Kingdom	2.00	91.81
12	KR	Korea, Rep.	12.67	84.54
13	US	United States of America	14.00	83.63
14	HK	Hong Kong (China)	17.00	81.58
15	QA	Qatar	46.00	61.80
16	MY	Malaysia	56.00	54.98
17	IN	India	58.00	53.62
18	SG	Singapore	61.00	51.57
19	CN	China	136.00	0.41
20	IR	Iran, Islamic Rep.	136.60	0.00

In case, want to calculate score of press freedom indicator in Malaysia out of these 20 selected countries, firstly, get the maximum value in **Table 4.6** is 136.60, the minimum value is -10.00, Malaysia value (country value) is 56.00, The calculation can be done as **Figure 4.5**.

Bad Score

- 100 x (Country value – minimum value)/ (maximum value – minimum value) + 100

$Score_{my}$= –100 x (56.00 – (–10.00))/ (136.60 – (–10.00)) +100
= –100 x (66.00/ 146.6) + 100
= –100 x (0.4502) +100
= 54.98

Figure 4.5 Good Score Calculation

In summary for this first part, if the higher value is represented good condition of a particular situation then it should apply the good score method. If the higher value is represented bad condition of a particular situation or in a country then it should apply the bad score method.

Second part, the innovation index is calculated through measured the score of indicators, sub pillars and pillars which are normalized by a weighted average; sometimes with equal average. Three cases will be presented, to help for understanding the situations which need to be aware when doing the calculation, and avoid affect the calculation result. Case 1 is a weighted average score calculation example. Case 2 is a simple average score calculation, which the indicator's score is equal to zero or "n/a". Case 3 is simple average score calculation had remove media indicators.

As a reminder that, the "n/a" will be replaced to zero when the data used for multiple regression analysis to avoid any risk made the selected 20 record become uncountable or excluded in a model.

Case 1: Weighted Average Score

Table 4.7 Sub-pillar 2.2 Tertiary education shows the relevant weight which are used for score calculation. It has the score of the sub-pillar, and four scores of the relevant indicators for India. If there is an "n/a" then the weight will not be counted, which highlighted in grey, and the total of W will be minus the weight. The formula shows in the **Figure 4.6**.

- SP is represented as Sub-pillar.
- *i* is represented number of indicators.
- W*i* is represented Weight of *i*.
- S*i* is represented Score of *i*.
- *k* is the total number of *i*.
- ☒ is represented this indicator, score, weight must be excluded.
- Total of W is the total of Wi minus the *total number of* ☒.

Table 4.7 Sub-pillar 2.2 Tertiary education

India (IN)				**2012** Score (0-100)
Sub-pillar (SP2.2)	***i***	**Indicator**	**Weight (W*i*)**	**(Collected) (S*i*)**
2.2. Tertiary education				**2.2**
	1	2.2.1. Tertiary enrolment	0.5	6.7
	☒	2.2.2. Graduates in science and engineering	1	n/a
	2	2.2.3. Tertiary inbound mobility	0.5	0.0
k	**3**	2.2.4. Gross tertiary outbound enrolment	0.5	0.0
		Total of W	1.5	

Source: The Weight compiled from GII-2012-Analytical-Tool – Alcatel-Lucent. (2012).

$$\text{Score for SP2.2} = \sum_{i=1}^{k} WiSi/W = 2.2$$

Figure 4.6 Formula of the Score for SP2.2 Tertiary education

Case 2: Simple Average Score calculation has Indicator's score is zero or "n/a"

In this case is presented while the indicator has score equal to zero or "n/a", and it is a simple average. Simple average is meant weight equal to one. It shows as the following **Table 4.8** which is Sub-pillar 6.1 Knowledge creation for Hong Kong. About the "n/a", again it is highlighted in grey, which will be deducted from the total of W or meant not counted in the simple average score calculation.

- SP is represented as Sub-pillar.
- *i* is represented number of indicators.
- W*i* is represented Weight of *i*.
- S*i* is represented Score of *i*.
- *k* is the total number of *i*.
- ☒ is represented this indicator, score, weight must be excluded.
- Total of W is the total of Wi minus the *total number of* ☒.

Table 4.8 Sub-pillar 6.1 Knowledge creation

Hong Kong, China (HK)				**2012** Score (0-100)
Sub-pillar (SP6.1)	***i***	**Indicator**	**Weight (W*i*)**	**(Collected) (S*i*)**
6.1 Knowledge creation				**1.4**
	1	6.1.1. National office patent applications	1	0.0
	☒	6.1.2. Patent Cooperation Treaty applications	1	n/a
	2	6.1.3. National office utility model applications	1	2.7
k	☒	6.1.4. Scientific and technical journal articles	1	n/a
		Total of W	2	

Source: The Weight compiled from GII-2012-Analytical-Tool – Alcatel-Lucent. (2012).

$$\text{Score for SP6.1} = \sum_{i=1}^{k} WiSi/W = 1.4$$

Figure 4.7 Formula of the Score for SP6.1 Knowledge creation

Case 3: Simple Average Score Calculation had removed Media indicators

In order to get new innovation index, removal of the indicator related to media is a must to make the index independent from any selected media indicator (see **Table 4.9**). And, **Figure 4.8** shows the formula of score for Sub-pillar 3.1 Information & Communication Technologies (ICT).

- SP is represented as Sub-pillar.
- *i* is represented number of indicators.
- W*i* is represented Weight of *i*.
- S*i* is represented Score of *i*.
- *k* is the total number of *i*.
- ☒ is represented this indicator, score, weight must be excluded.
- Total of W is the total of weight of indicators minus the *total number of* ☒.

Table 4.9 Sub-pillar 3.1 Information & Communication Technologies (ICT)

Switzerland (CH)				2012 Score (0-100)
Sub-pillar (SP3.1)	*i*	Indicator	Weight (W*i*)	(Removed Media Indicator) (S*i*)
3.1. Information & Communication Technologies (ICT)				**29.7**
	☒	3.1.1 ICT access	1	94.6
	☒	3.1.2 ICT use	1	80.3
	1	3.1.3 Government's online service	1	35.3
k	2	3.1.4 E-participation	1	24.1
		Total of W	2	

$$\text{Score for SP3.1} = \sum_{i=1}^{k} WiSi/W \ = 29.7$$

Figure 4.8 Formula of the Score for SP3.1 Information & Communication Technologies (ICT)

After understanding of the concept of weighted average and simple average which applied in the score calculation then next is go through the calculation process of innovation index for a country. This process goes through score calculation with the following steps: -

1. Score of sub pillars, which based on its' indicators.
2. Score of pillar, which based on its' sub-pillars.
3. Score of innovation index, which based on the seven pillars of innovation.

The Pillar 3 had three sub-pillars with 11 indicators (see **Table 4.10**). It shows Score of Sub-pillars of 3.1, 3.2, and 3.3 with score of the Pillar 3 Infrastructure for Switzerland. There are two indicators related to media, 3.1.1 ICT access, and 3.1.2 ICT use which categorized under the Sub-pillar 3.1 Information & Communication Technologies (ICT). These two indicators will be removed while calculating the score of Sub-pillar 3.1. **Figure 4.9** shows the formula which can be applied for score calculation of Pillar 3 Infrastructure. This part had illustrated Step 1 and Step2 of the calculation process of innovation index for Switzerland.

- P is represented as pillar.
- *I* is represented number of Sub-pillar.
- W*I* is represented Weight of *I*.
- S*I* is represented Score of *I*.
- *K* is the total number of *I*.
- ☒ is represented this indicator, score, weight must be excluded.
- Total of W is the total weight of sub-pillars.

$$\text{Score for P3} = \sum_{I=1}^{K} WISI/W \ = 50.5$$

Figure 4.9 Formula of the Score for Pillar 3 Infrastructure

Table 4.11 shows the New Innovation Index (nii) 2012 for Switzerland, to illustrate Step 3 of the calculation process. Five of the seven pillars are known as Innovation Input pillars are given weight of one, which are Institutions, Human capital and research, Infrastructure, Market sophistication, and Business sophistication. Another two pillars Knowledge and technology outputs, and Creative outputs are categorized as Innovation Output pillars with a given weight of 0.5. For the formula of nii, see **Figure 4.10**.

- nii is New Innovation Index.
- a is represented as innovation input sub index.
- b is represented as innovation output index.
- c is innovation efficiency index.
- *I* is represented number of pillar.
- W*I* is represented Weight of *I.*
- S*I* is represented Score of *I.*
- *K* is the total number of *I.*
- Total of W is the total weight of seven pillars.
- Sa is score of innovation input pillars.
- Sb is score of innovation output pillars.
- Ka is the total number of innovation input pillars.
- Kb us the total number of innovation output pillats.

$$\text{Score for nii} = \sum_{I=1}^{K} WISI/W \ = 60.4$$

Figure 4.10 Formula for New innovation Index

Figure 4.11 shows the formula which used for calculating innovation input sub-index. This index is excluded the two output pillars. **Figure 4.12** shows the formula for innovation out sub-index, which included score of knowledge and technology outputs, and Creative outputs only. **Figure 4.13** shows the formula to find innovation efficiency index. Innovation efficiency index equal to innovation output sub-index divided innovation input sub-index. All these information for the selected twenty country for innovation index 2011 and innovation index 2012, see **Appendix 4**.

$$\mathrm{a} = \sum_{a=1}^{K} Sa/Ka \; = 60.3$$

Figure 4.11 Formula for Innovation Input Sub-index

$$\mathrm{b} = \sum_{b=1}^{K} Sb/Kb \; = 60.6$$

Figure 4.12 Formula for Innovation Output Sub-index

$$\mathrm{c} = \mathrm{b}/\mathrm{a}$$

Figure 4.13 Formula for Innovation efficiency index

Table 4.10 Pillar 3 Infrastructure (included sub-pillars and indicators)

Switzerland (CH)							2012 Score (0-100)
Pillar (P3)		***I***	***i***	**Indicator**	**Weight (W_I)**	**Weight (W_i)**	**(Removed Media Indicator) (S_i) or (SI)**
3. Infrastructure							***50.5***
3.1. Information & Communication Technologies (ICT)	*K*	1			1		**29.7**
			☒	3.1.1 ICT access		1	94.6
			☒	3.1.2 ICT use		1	80.3
			1	3.1.3 Government's online service		1	35.3
	k		2	3.1.4 E-participation		1	24.1
3.2. General infrastructure	*K*	2			1		**48.6**
			1	3.2.1 Electricity output		0.5	31.7
			2	3.2.2 Electricity consumption		0.5	31.4
			3	3.2.3 Trade and transport-related infrastructure		1	91.4
	k		4	3.2.4 Gross capital formation		1	22.8
3.3. Ecological sustainability	***K***	**3**			1		**73.2**
			1	3.3.1 GDP per unit of energy use		1	59.7
			2	3.3.2 Environmental performance		1	100.0
	k		3	3.3.3 ISO 14001 environmental certificates		1	59.8
				Total of W	**3**		

Table 4.11 New Innovation Index 2012 for Switzerland

Switzerland (CH)						2012 Score (0-100)
	a	b	I	Pillars	Weight (W_I)	(Removed Media Indicator) (SI)
Innovation index						**60.4**
Innovation output sub-index (b)						**60.6**
Innovation input sub-index (a)						**60.3**
Innovation efficiency index (c)						**1.0**
		1	1	1. Institutions	0.2	85.7
		2	2	2. Human capital and research	0.2	58.9
		3	3	3. Infrastructure	0.2	50.5
		4	4	4. Market sophistication	0.2	53.0
	K	5	5	5. Business sophistication	0.2	53.2
	1		6	6. Knowledge and technology outputs	0.5	51.3
	K 2		7	7. Creative outputs	0.5	69.9
				3.1.3 Government's online service		
				3.1.4 E-participation		
				Total of W	**2**	

Table 4.12 shows new innovation index and score of the indicators related to media of the selected twenty countries in year 2011. Nine indicators which related to media are listed as the following: -

1. ICT (Access & Use),
2. Scientific & Technical Journal Articles,
3. National feature films produced,
4. Daily Newspapers Circulation,
5. Wikipedia Monthly Edits,
6. Video Uploads on YouTube,
7. Broadcast Media,
8. Search Engine (Google),
9. Social Media (Facebook).

This table is used for regression analysis purpose. The Top five innovative countries out of the twenty selected countries in this table are Switzerland, Sweden, Hong Kong, Netherlands, and United Kingdom. In addition, Hong Kong, Singapore, Republic of Korea, China, and Malaysia are ranked within the top five innovative countries in Asia Region in this sample.

Table 4.13 shows the new innovation index and score of the indicators related to media of the selected twenty countries in year 2012. The top five innovatitive countries are Switzerland, Sweden, Singapore, United Kingdom, and Nertherlands. In Asia region top five are Singapore, Hong Kong, Republic of Korea, Qatar, and Malaysia.

The selected countries, and indicators related media are as same as selection for **Table 4.12**. The nine indicators related to media as Independent Variable (IV), and new innovation index as Dependent Variable (DV). These variables in both **Table 4.12** & **Table 4.13** will used for multiple regression analysis.

Table 4.12 New Innovation Index and Media Indicators Score of the Selected 20 Countries for Year 2011

					Media Indicators								
					Score (0-100)								
Country No	Country Codes	Country	Income Level	New Innovation Index	ICT (Access & Use)	Scientific & Technical Journal	National feature films Produced	Daily Newspapers Circulation	Wikipedia Monthly Edits	Video Uploads on Youtube	Broadcast Media	Search Engine (Google)	Social Media (Facebook)
1	CH	Switzerland	HI	59.46	90.53	100.00	100.00	61.57	40.90	76.80	0.20	97.69	68.88
2	SE	Sweden	HI	57.14	100.00	96.87	31.53	79.34	68.77	89.75	7.19	98.36	75.84
3	HK	Hong Kong (China)	HI	53.43	91.60	n/a	66.31	64.59	42.82	82.25	0.17	42.98	91.71
4	NL	Netherlands	HI	53.22	91.90	71.51	18.79	46.57	58.88	93.55	4.02	95.10	48.91
5	GB	United Kingdom	HI	53.14	87.17	69.96	9.13	50.69	47.28	92.08	0.01	90.89	56.11
6	US	United States of America	HI	51.23	74.10	48.65	16.31	31.78	25.33	99.78	100.00	72.92	40.78
7	SG	Singapore	HI	50.85	89.99	50.84	6.05	41.78	6.34	81.44	0.19	82.15	82.14
8	DK	Denmark	HI	50.78	92.06	85.85	42.66	41.77	41.19	86.63	1.89	98.02	66.99
9	CA	Canada	HI	49.97	74.64	72.21	15.06	23.68	38.40	91.41	14.36	90.96	33.36
10	FI	Finland	HI	49.54	80.98	87.43	31.37	88.46	77.13	100.00	0.25	100.00	66.54
11	KR	Korea, Rep.	HI	47.83	93.51	46.44	20.90	55.99	9.13	37.98	0.01	5.11	73.17
12	IE	Ireland	HI	47.71	75.55	42.17	46.92	37.40	40.06	90.83	0.03	95.09	43.51
13	DE	Germany	HI	47.41	85.94	49.45	11.93	52.89	41.73	76.69	2.65	96.77	85.50
14	NO	Norway	HI	47.29	85.18	54.42	34.88	100.00	89.65	88.85	1.99	93.85	64.84
15	EE	Estonia	HI	41.90	73.03	58.15	53.29	35.47	100.00	88.41	0.03	96.87	58.42
16	CN	China	UM	36.76	21.31	24.28	0.00	13.77	0.00	n/a	13.32	0.00	0.00
17	MY	Malaysia	UM	35.24	36.36	5.76	5.29	19.11	5.19	50.54	0.39	82.60	100.00
18	QA	Qatar	HI	32.05	48.59	0.00	n/a	10.13	9.95	58.67	0.00	88.58	96.75
19	IN	India	LM	23.36	0.00	17.28	6.16	18.77	0.49	0.00	4.79	99.45	93.37
20	IR	Iran, Islamic Rep.	UM	12.72	18.18	17.03	0.32	0.00	1.69	n/a	0.41	88.05	92.82

Source: Dutta, S. & INSEAD. (2011).; CIA. (2013). ; Hong Kong Government Yearbook. (2011).; Freedom House. (2011).; and StatCounter GlobalStats. (2011).

Table 4.13 New Innovation Index and Media Indicators Score of the Selected 20 Countries for Year 2012

					Media Indicators								
					Score (0-100)								
Country No	Country Codes	Country	Income Level	New Innovation Index	ICT (Access & Use)	Scientific & Technical Journal	National feature films Produced	Daily Newspapers Circulation	Wikipedia Monthly Edits	Video Uploads on Youtube	Broadcast Media	Search Engine (Google)	Social Media (Facebook)
1	CH	Switzerland	HI	60.42	92.18	100.00	100.00	61.57	40.90	76.80	0.20	97.78	80.55
2	SE	Sweden	HI	57.28	100.00	94.36	31.53	79.34	68.77	89.75	7.19	98.48	77.03
3	SG	Singapore	HI	55.68	85.47	54.22	6.05	41.78	6.34	81.44	0.19	87.77	82.17
4	GB	United Kingdom	HI	53.52	90.16	70.74	9.13	50.69	47.28	92.08	0.01	91.96	64.99
5	NL	Netherlands	HI	52.88	89.20	74.12	18.79	46.57	58.88	93.55	4.02	95.80	54.84
6	HK	Hong Kong (China)	HI	52.85	95.53	n/a	66.31	64.59	42.82	82.25	0.22	55.33	87.32
7	FI	Finland	HI	52.42	89.57	91.66	31.37	88.46	77.13	100.00	0.25	99.75	77.14
8	DK	Denmark	HI	51.41	93.00	89.73	42.66	41.77	41.19	86.63	1.89	98.83	76.98
9	US	United States of America	HI	49.23	77.72	48.85	16.31	31.78	25.33	99.78	100.00	75.47	44.55
10	IE	Ireland	HI	48.13	73.92	52.20	46.92	37.40	40.06	90.83	0.03	96.12	70.40
11	CA	Canada	HI	47.45	71.54	75.00	15.06	23.68	38.40	91.41	14.36	91.43	47.80
12	DE	Germany	HI	47.20	84.95	52.36	11.93	52.89	41.73	76.69	2.65	96.45	86.06
13	NO	Norway	HI	46.77	87.78	57.97	34.88	100.00	89.65	88.85	1.99	92.53	75.06
14	KR	Korea, Rep.	HI	44.02	99.55	53.38	20.90	55.99	9.13	37.98	0.01	62.38	89.84
15	EE	Estonia	HI	43.72	61.85	71.99	53.29	35.47	100.00	88.41	0.03	98.62	78.17
16	QA	Qatar	HI	39.92	60.66	0.00	n/a	10.13	9.95	58.67	0.00	91.13	86.54
17	MY	Malaysia	UM	36.16	38.38	10.17	5.29	19.11	5.19	50.54	0.39	90.67	100.00
18	CN	China	UM	36.00	21.54	25.84	0.00	13.77	0.00	n/a	13.32	0.00	0.00
19	IN	India	LM	22.51	0.00	16.76	6.16	18.77	0.49	0.00	4.79	100.00	83.77
20	IR	Iran, Islamic Rep.	UM	10.50	17.66	23.34	0.32	0.00	1.69	n/a	0.41	92.17	89.05

Source: Dutta, S. & INSEAD. (2012).; CIA. (2013). ; Hong Kong Government Fact sheets. (2012); Freedom House. (2012); and StatCounter GlobalStats. (2012).

Chapter 5| Modelling

As mentioned in Chapter 4, new innovation index as Dependent Variable (DV) or Outcome; and nine indicators related to media as Independent Variable (IV) or Predictor. Both DV and IV are considered as scale, continuous, and quantitative variables (see **Table 4.12**, and **Table 4.13**).

In order to measure relationships between innovation index and media, regression analysis will be used. Regression analysis is a way to predict outcome from a single predictor or more predictors (see Chapter 3). In this case, the IV(s) are more than one, so it should use multiple regression analysis.

Figure 5.1 shows the example of Country/ Economy Profile of Switzerland. Especially focus on an example of the Sub-pillar 1.1 Political environment to talk about the logical of data model. To get the completed Country or Economy Profile for Switzerland Year 2011 and Year 2012, see **Appendix 4**.

Switzerland (CH)	2011 Score (0-100) (Collected)	2011 Score (0-100) (Removed Media Indicator)
Key Indicators		
Population (millions)	**7.6**	**7.6**
GDP per capita, PPP$	**45,116.9**	**45,116.9**
GDP (US$ billion)	**491.9**	**491.9**
Innovation index	**61.3**	**59.5**
Innovation output sub-index	**60.3**	**58.8**
Innovation input sub-index	**62.4**	**60.1**
Innovation efficiency index	**1.0**	**1.0**
1. Institutions	**87.5**	**87.5**
1.1. Political environment	**97.9**	**97.9**
1.1.1 Political Stability	96.2	96.2
1.1.2 Government effectiveness	97.4	97.4
1.1.3 Press freedom	100.0	100.0

Figure 5.1 Country/ Economy Profile of Switzerland, Example Sub-pillar 1.1

Figure 5.2 shows an example data model for Data Table Indicator1.1.1 which is Political Stability for year 2011. It also illustrated that how these three tables related to each other, which fieldname are connected one and another.

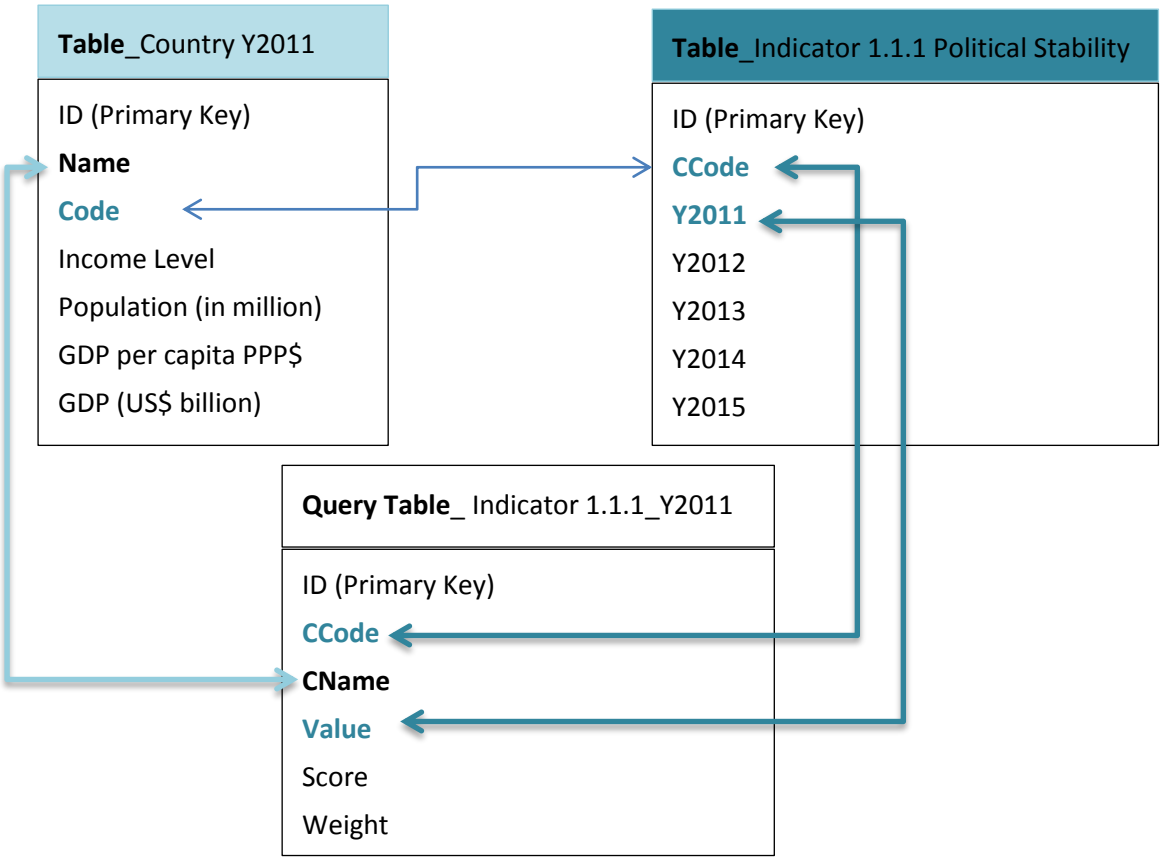

Figure 5.2 Data Model for Data Table Indicator1_Y2011

Figure 5.3 shows an example data model for Data Table Indicator1.1 which is Political environment for year 2011. It also illustrated that how Query Table 1.1.1, Query Table 1.1.2, Query Table 1.1.3, and Query Table_Sub-pillar 1.1 are related to each other, which fieldname are connected one and another. For example Score of Query Table 1.1.1 will be connected to Query Table_Sub-pillar 1.1 with fieldname as Score 1.1.1. Same theory will be applied to Query Table 1.1.2, and Query Table 1.1.3.

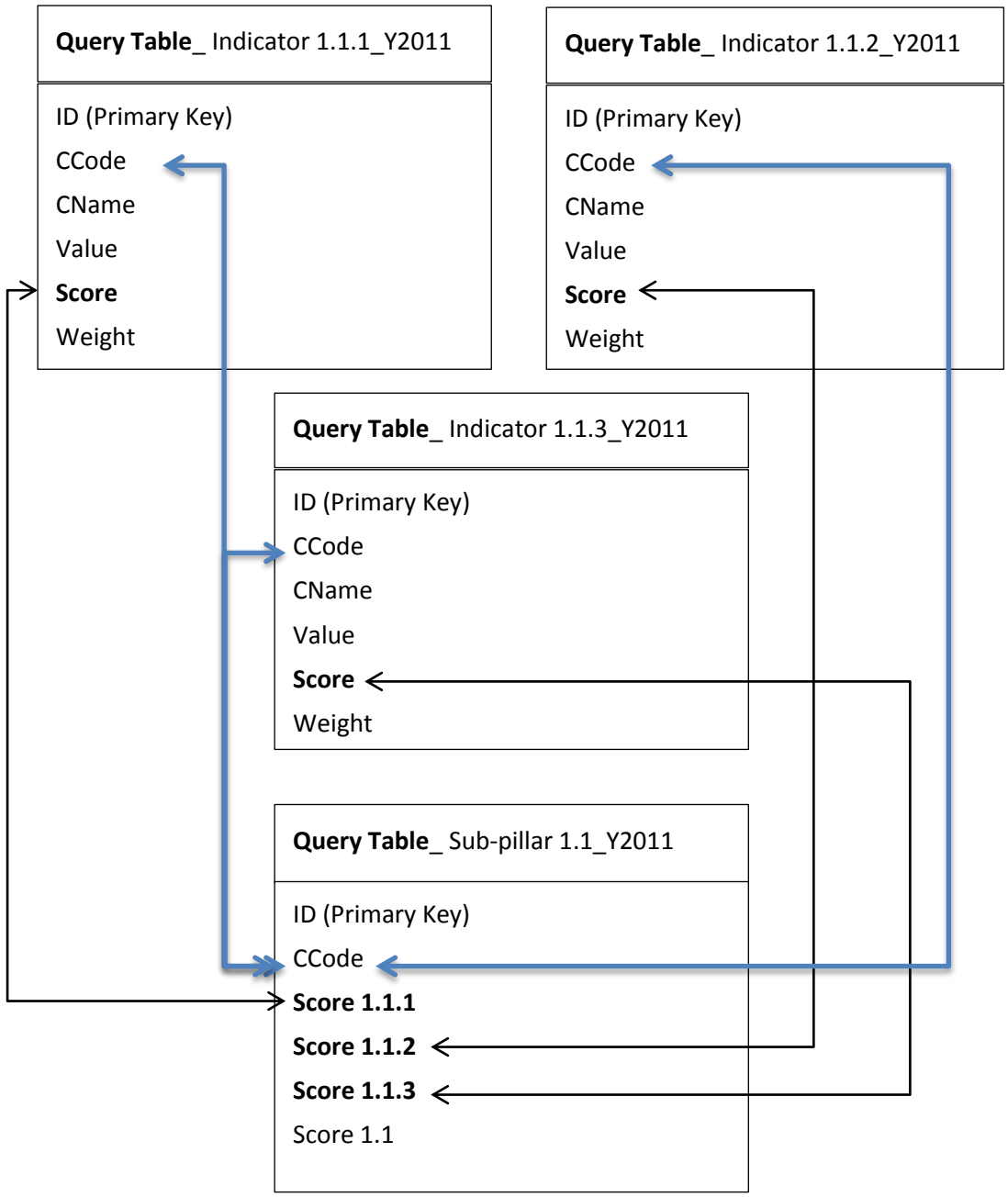

Figure 5.3 The logical of data model for Sub-pillar 1.1_Y2011

Data model of pillar 1 in year 2011, see **Figure 5.4**. It shows which query tables of sub-pillars (1.1, 1.2, and 1.3) are linked together and formed a new query table for pillar 1 which to get score 1 that represented score of Pillar 1 Institutions.

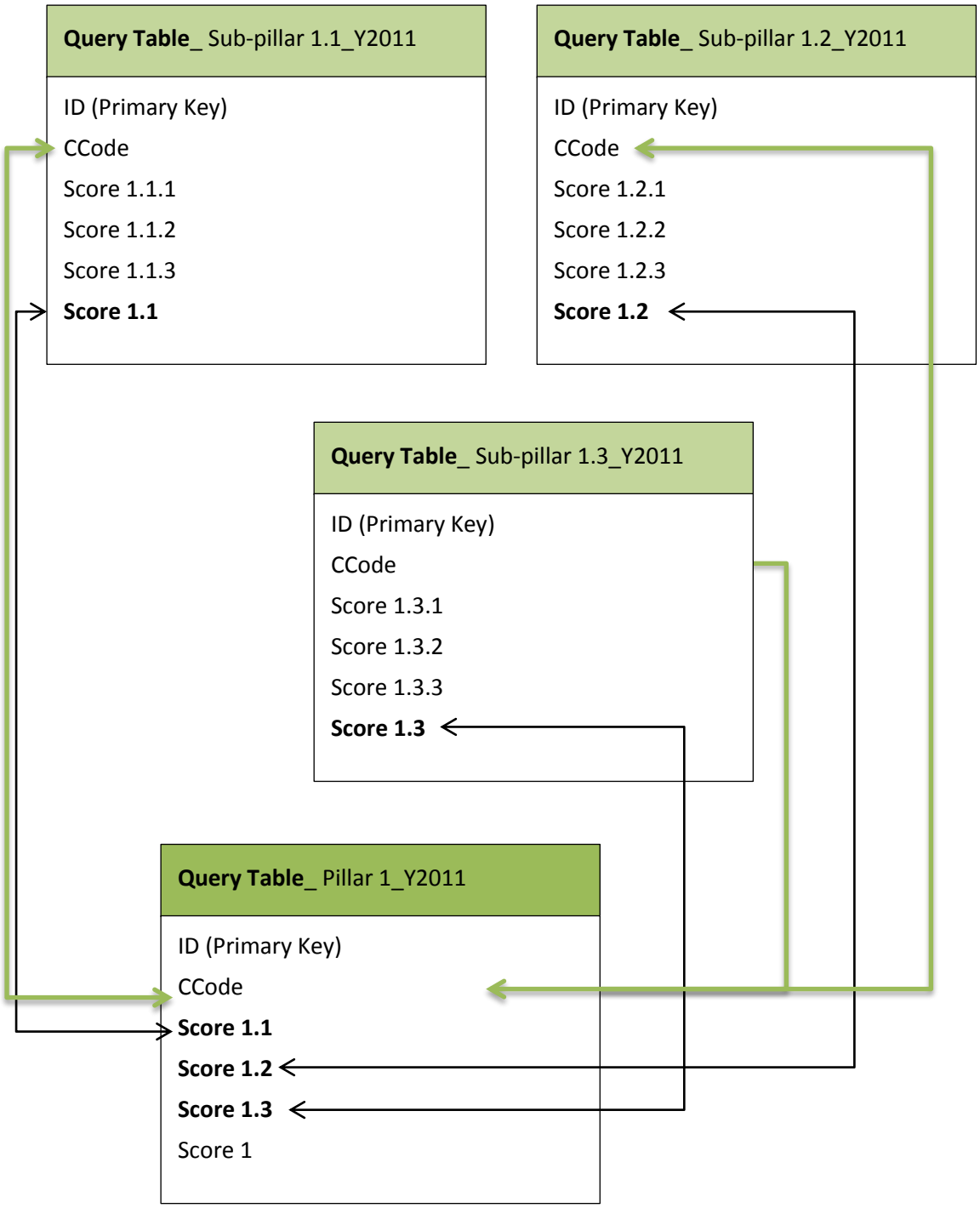

Figure 5.4 Data Model for Pillar 1_Y2011

Formula(s) which had mentioned in Chapter 4 for sub-pillars, pillars, new innovation index (nii), innovation input sub-index (a), innovation output sub-index (b), and innovation efficiency index will also applied in **Figure 5.5** to get nii, a, b, and c.

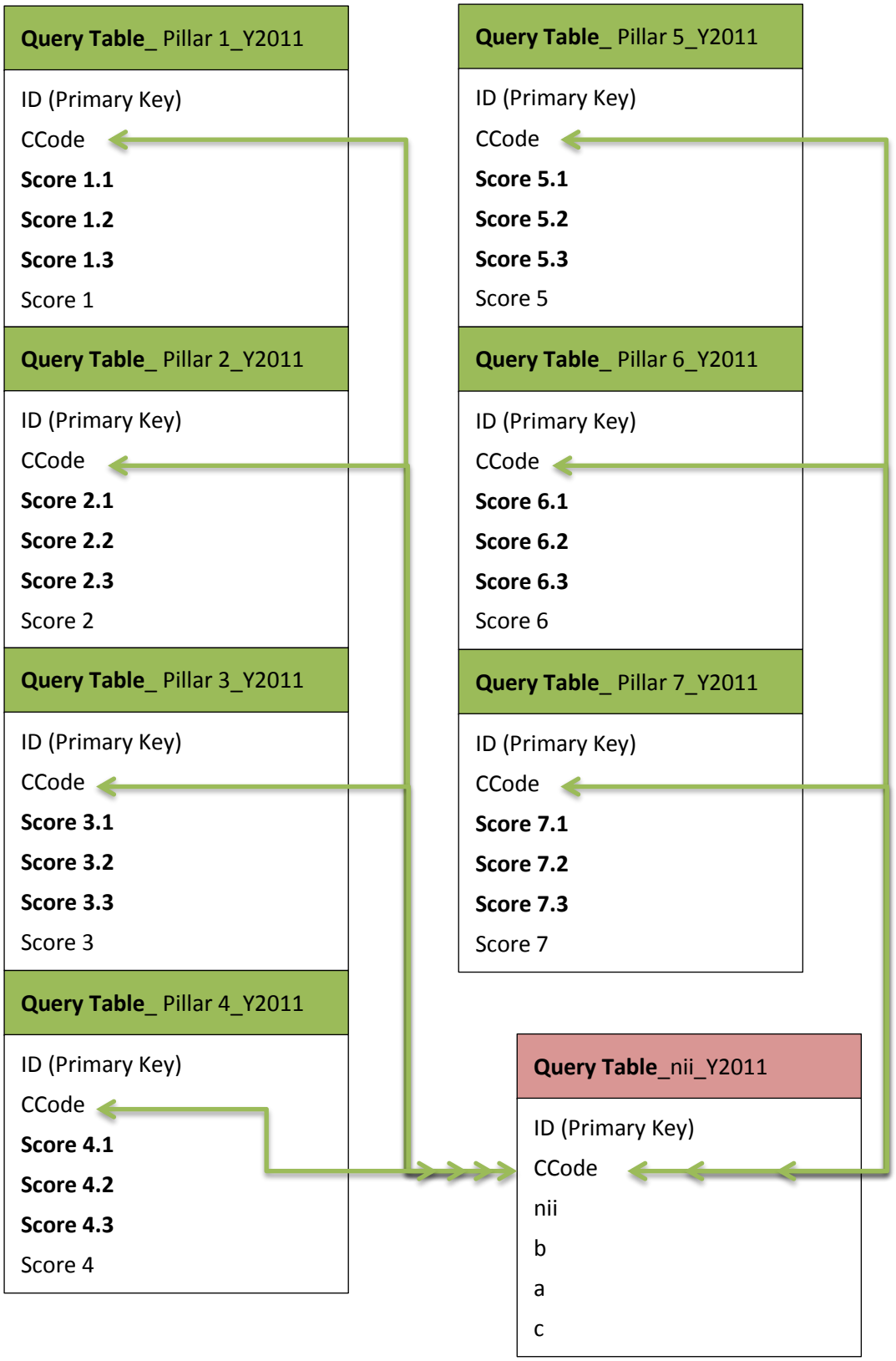

Figure 5.5 Data Model for a Country or Economy Profile

Step 3 Regression Models

In this part, it will continue with Step 3 Regression Models of the conceptual framework (see **Figure 4.1)** which mentioned in Chapter 4. The multiple regression will discussed two models for each year (2011 and 2012). Model 1 is tested two Independent Variables (IV): ICT (Access & Use), and Scientific & Technical Journal Articles. Model 2 is tested three IV: ICT (Access & Use), Scientific & Technical Journal Articles, and Social Media (Facebook). About the variables for the year 2011 and year 2012 see **Table 5.1** which shows the elements of the multiple regression equation.

Each model will be roughly stated about multiple regression analysis, which more elaborated of the R square, Significance of the model, and Significance of the correlation coefficients. Furthermore, it also highlighted frequencies of the descriptive statistics which more related to assumption testing concerns.

Figure 5.6 shows the regression equation: $Y = B_0+B_1X_1+B_2X_2+B_nX_n$, Y is represented the value of dependent variable, which is the new innovation index being predicted. B_0 as intercept of Y and the value is referring to the value B for the constant. B_1 is the slope which is Beta coefficient for X_1, and ICT (Access & Use) as X1 which is the first independent variable that is explaining the variance in Y. Furthermore, see **Table 5.1**. It is listed element of the multiple regression equation. In general, if B1 divided by SEB1, and a given t-score

$$Y = B_0+B_1X_1+B_2X_2+\ldots\ldots B_nX_n$$

Figure 5.6 The Regression Equation

Table 5.1 Element of the Multiple Regression Equation

No.	Element	Description
1	Y	The value of dependent variable (Y), the new innovation index which is being predicted.
2	B_0	It is known as intercept of Y and the value is referring to the value B for the constant.
3	B_1	The slope which is Beta coefficient for X_1.
4	B_2	The slope which is Beta coefficient for X_2.
5	B_3	The slope which is Beta coefficient for X_3.
6	B_4	The slope which is Beta coefficient for X_4.
7	B_5	The slope which is Beta coefficient for X_5.
8	B_6	The slope which is Beta coefficient for X_6.
9	B_7	The slope which is Beta coefficient for X_7.
10	B_8	The slope which is Beta coefficient for X_8.
11	B_9	The slope which is Beta coefficient for X_9.
12	X_1	ICT (Access and Use) or ict_anu is presented as first independent variable that is explaining the variance in Y.
13	X_2	Scientific and Technical Journal Articles or stja is presented as second independent variable that is explaining the variance in Y.
14	X_3	Video Uploads on YouTube or YouTube is presented as third independent variable that is explaining the variance in Y.
15	X_4	Daily Newspapers Circulation or daily is presented as fourth independent variable that is explaining the variance in Y.
16	X_5	Social Media (Facebook) or smediaF is presented as fifth independent variable that is explaining the variance in Y.
17	X_6	National Feature Films Produced or nffilms is presented as sixth independent variable that is explaining the variance in Y.
18	X_7	Wikipedia Monthly Edits or wikipedia is presented as seventh independent variable that is explaining the variance in Y.
19	X_8	Broadcast Media or Bmedia is presented as eighth independent variable that is explaining the variance in Y.
20	X_9	Search Engine (Google) or sengineG is presented as ninth independent variable that is explaining the variance in Y.

Model 1 | Y2011

a) **Figure 5.7** shows the coefficients output.

The equation is $Y = 19.582 + 0.318\ X_1 + 0.060\ X_2$.

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	19.582	3.055		6.409	.000	13.136	26.028
	ICT (Access & Use)	.318	.053	.797	6.049	.000	.207	.429
	Scientific & Technical Journal Articles	.060	.049	.162	1.232	.235	-.043	.164

a. Dependent Variable: New Innovation Index

Continued

Coefficients

Model		Correlations			Collinearity Statistics	
		Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)					
	ICT (Access & Use)	.902	.826	.608	.582	1.717
	Scientific & Technical Journal Articles	.677	.286	.124	.582	1.717

a. Dependent Variable: New Innovation Index

Figure 5.7 Coefficients Output of the Model 1 (2011)

b) The R Square which stated in **Figure 5.8** Model Summary is 0.828. It can be interpreted as there are 82.8% of the variation in the new innovation index is explained by ICT (Access & Use), and Scientific & Technical Journal Articles.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.910[a]	.828	.808	5.11579	.828	40.986	2	17	.000	1.764

a. Predictors: (Constant), Scientific & Technical Journal Articles, ICT (Access & Use)

b. Dependent Variable: New Innovation Index

Figure 5.8 Model Summary of the Model 1 (2011)

c) Determine whether the model is useful for predicting the response, at the 5% significance level: -

Step 1	Hypotheses
	H_0: $B_1 = B_2 = 0$
	H_1: at least one Bi $\neq$ 0
Step 2	Significance Level α = 0.05
Step 3	Rejection of H_0 because the p-value $\leq$ 0.05. The F= 40.986, and p-value = 0.000 $<$ 0.01, see **Figure 5.9**.
Step 4	p-value $<$ 0.01 $\leq$ 0.05, so reject H_0.
Step 5	As the result, there are at least one of the predictors is useful for predicting new innovation index (nii) so this model is useful.

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2145.316	2	1072.658	40.986	.000[a]
	Residual	444.913	17	26.171		
	Total	2590.228	19			

a. Predictors: (Constant), Scientific & Technical Journal Articles, ICT (Access & Use)

b. Dependent Variable: New Innovation Index

Figure 5.9 Analysis of Variance (ANOVA) Output of the Model 1 (2011)

d) Determine which predictor variables can be removed from the Model 1 as unnecessary, at the 5% significance level: -

Step 1	Hypotheses
	H_0: $B_1 = 0$ (ICT (Access & Use) is not useful for predicting nii).
	H_1: $B_1 \neq 0$ (ICT (Access & Use) is useful for predicting nii).
Step 2	Significance Level $\alpha = 0.05$
Step 3	Rejection of H_0 because the p-value ≤ 0.05. The t = 6.049, p-value = 0.000, see **Figure 5.7**.
Step 4	p-value = 0.000 $<$ 0.01 $\leq$ 0.05, so reject H_0.
Step 5	As the result, ICT (Access & Use) is useful for predicting new innovation index so this model is useful.

Step 1	Hypotheses
	H_0: $B_2 = 0$ (Scientific & Technical Journal Articles is not useful for predicting nii).
	H_1: $B_2 \neq 0$ (Scientific & Technical Journal Articles is useful for predicting nii).
Step 2	Significance Level $\alpha = 0.05$
Step 3	Accept of H_0 because the p-value $>$ 0.05. The t=1.232, p-value =0.235, see **Figure 5.7**.
Step 4	p-value $>$ 0.01 $>$ 0.05, so accept H_0.
Step 5	As the result, Scientific & Technical Journal Articles is not useful for predicting new innovation index so this model is useful.

Model 2 | Y2011

a) **Figure 5.10** shows the coefficients output.

The equation is $Y = 26.698 + 0.337\ X_1 + 0.023\ X_2 - 0.98\ X_5$

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	26.698	4.303		6.205	.000	17.576	35.820
	ICT (Access & Use)	.337	.049	.845	6.952	.000	.235	.440
	Scientific & Technical Journal Articles	.023	.048	.062	.482	.636	-.078	.124
	Social Media (Facebook)	-.098	.046	-.212	-2.162	.046	-.195	-.002

a. Dependent Variable: New Innovation Index

Coefficients

Model		Correlations			Collinearity Statistics	
		Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)					
	ICT (Access & Use)	.902	.867	.634	.563	1.776
	Scientific & Technical Journal Articles	.677	.120	.044	.506	1.977
	Social Media (Facebook)	-.301	-.475	-.197	.863	1.159

a. Dependent Variable: New Innovation Index

Figure 5.10 Coefficients Output of the Model 2 (2011)

b) The R Square which stated in **Figure 5.11** Model Summary is 0.867. It can be interpreted as there are 86.7% of the variation in the new innovation index is explained by ICT (Access & Use), Scientific & Technical Journal Articles, and Social Media (Facebook).

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.931[a]	.867	.842	4.63921	.867	34.784	3	16	.000	1.700

a. Predictors: (Constant), Social Media (Facebook), ICT (Access & Use), Scientific & Technical Journal Articles

b. Dependent Variable: New Innovation Index

Figure 5.11 Model Summary of the Model 2 (2011)

c) Determine whether the model is useful for predicting the response, at the 5% significance level: -

Step 1	Hypotheses
	H_0: $B_1 = B_2 = 0$
	H_1: at least one Bi $\neq$ 0
Step 2	Significance Level α = 0.05
Step 3	Rejection of H_0 because the p-value $\leq$ 0.05. The F= 34.784, and p-value = 0.000 $<$ 0.01, see **Figure 5.12**.
Step 4	p-value $<$ 0.01 $\leq$ 0.05, so reject H_0.
Step 5	As the result, there are at least one of the predictors is useful for predicting new innovation index (nii) so this model is useful.

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2245.871	3	748.624	34.784	.000[a]
	Residual	344.357	16	21.522		
	Total	2590.228	19			

a. Predictors: (Constant), Social Media (Facebook), ICT (Access & Use), Scientific & Technical Journal Articles

b. Dependent Variable: New Innovation Index

Figure 5.12 Analysis of Variance (ANOVA) Output of the Model 2 (2011)

d) Determine which predictor variables can be removed from the Model 1 as unnecessary, at the 5% significance level: -

Step 1	Hypotheses
	H_0: $B_1 = 0$ (ICT (Access & Use) is not useful for predicting nii).
	H_1: $B_1 \neq 0$ (ICT (Access & Use) is useful for predicting nii).
Step 2	Significance Level $\alpha = 0.05$
Step 3	Rejection of H_0 because the p-value ≤ 0.05. The t = 6.952, p-value = 0.000, see **Figure 5.7**.
Step 4	p-value = 0.000 $<$ 0.01 $\leq$ 0.05, so reject H_0.
Step 5	As the result, ICT (Access & Use) is useful for predicting new innovation index so this model is useful.

Step 1	Hypotheses
	H_0: $B_2 = 0$ (Scientific & Technical Journal Articles is not useful for predicting nii).
	H_1: $B_2 \neq 0$ (Scientific & Technical Journal Articles is useful for predicting nii).
Step 2	Significance Level $\alpha = 0.05$
Step 3	Accepted of H_0 because the p-value $>$ 0.05. The t=0.482, p-value =0.636, see **Figure 5.7**.
Step 4	p-value $>$ 0.01 $>$ 0.05, so accepted H_0.
Step 5	As the result, Scientific & Technical Journal Articles is not useful for predicting new innovation index so this model is useful.

Step 1	Hypotheses
	H_0: $B_2 = 0$ (Social Media (Facebook) is not useful for predicting nii).
	H_1: $B_2 \neq 0$ (Social Media (Facebook) is useful for predicting nii).
Step 2	Significance Level $\alpha = 0.05$
Step 3	Accept of H_0 because the p-value ≤ 0.05. The t=-2.162, p-value =0.046, see **Figure 5.7**.
Step 4	p-value $>$ 0.01 $\leq$ 0.05, so reject H_0.
Step 5	As the result, Social Media (Facebook) is useful for predicting new innovation index so this model is useful.

Model 1| Y2012

a) **Figure 5.13** shows the coefficients output.

The equation is $Y = 19.411 + 0.323\ X_1 + 0.055\ X_2$.

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	19.411	3.481		5.576	.000	12.066	26.756
	ICT (Access & Use)	.323	.056	.797	5.784	.000	.205	.441
	Scientific & Technical Journal Articles	.055	.052	.144	1.043	.311	-.056	.165

a. Dependent Variable: New Innovation Index

Continued

Coefficients

Model		Correlations			Collinearity Statistics	
		Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)					
	ICT (Access & Use)	.882	.814	.640	.646	1.548
	Scientific & Technical Journal Articles	.618	.245	.115	.646	1.548

a. Dependent Variable: New Innovation Index

Figure 5.13 Coefficients Output of the Model 1 (Y2012)

b) The R Square which stated in **Figure 5.14** Model Summary is 0.792. It can be interpreted as there are 79.2% of the variation in the new innovation index is explained by ICT (Access & Use), and Scientific & Technical Journal Articles.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.890[a]	.792	.767	5.76987	.792	32.308	2	17	.000	1.213

a. Predictors: (Constant), Scientific & Technical Journal Articles, ICT (Access & Use)

b. Dependent Variable: New Innovation Index

Figure 5.14 Model Summary of the Model 1 (2012)

c) Determine whether the model is useful for predicting the response, at the 5% significance level: -

Step 1	Hypotheses
	H_0: $B_1 = B_2 = 0$
	H_1: at least one Bi $\neq$ 0
Step 2	Significance Level α = 0.05
Step 3	Rejection of H_0 because the p-value $\leq$ 0.05. The F= 32.308, and p-value = 0.000 $<$ 0.01, see **Figure 5.15.**
Step 4	p-value $<$ 0.01 $\leq$ 0.05, so reject H_0.
Step 5	As the result, there are at least one of the predictors is useful for predicting new innovation index (nii) so this model is useful.

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2151.146	2	1075.573	32.308	.000[a]
	Residual	565.953	17	33.291		
	Total	2717.099	19			

a. Predictors: (Constant), Scientific & Technical Journal Articles, ICT (Access & Use)

b. Dependent Variable: New Innovation Index

Figure 5.15 Analysis of Variance (ANOVA) Output of the Model 1 (2012)

d) Determine which predictor variables can be removed from the Model 1 as unnecessary, at the 5% significance level: -

Step 1	Hypotheses
	H_0: $B_1 = 0$ (ICT (Access & Use) is not useful for predicting nii).
	H_1: $B_1 \neq 0$ (ICT (Access & Use) is useful for predicting nii).
Step 2	Significance Level $\alpha = 0.05$
Step 3	Rejection of H_0 because the p-value ≤ 0.05. The t = 5.784, p-value = 0.000, see **Figure 5.7**.
Step 4	p-value = 0.000 $<$ 0.01 $\leq$ 0.05, so reject H_0.
Step 5	As the result, ICT (Access & Use) is useful for predicting new innovation index so this model is useful.

Step 1	Hypotheses
	H_0: $B_2 = 0$ (Scientific & Technical Journal Articles is not useful for predicting nii).
	H_1: $B_2 \neq 0$ (Scientific & Technical Journal Articles is useful for predicting nii).
Step 2	Significance Level $\alpha = 0.05$
Step 3	Accept of H_0 because the p-value $>$ 0.05. The t=1.043, p-value =0.311, see **Figure 5.7**.
Step 4	p-value $>$ 0.01 $>$ 0.05, so accept H_0.
Step 5	As the result, Scientific & Technical Journal Articles is not useful for predicting new innovation index so this model is useful.

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Model 2| Y2012

a) **Figure 5.13** shows the coefficients output.

The equation is $Y = 26.548 + 0.350\ X_1 + 0.031\ X_2. - 0.180\ X_5$

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	26.548	5.070		5.236	.000	15.800	37.296
	ICT (Access & Use)	.350	.054	.864	6.443	.000	.235	.465
	Scientific & Technical Journal Articles	.031	.051	.081	.604	.554	-.077	.138
	Social Media (Facebook)	-.108	.059	-.199	-1.838	.085	-.232	.016

a. Dependent Variable: New Innovation Index

Coefficients

Model		Correlations			Collinearity Statistics	
		Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)					
	ICT (Access & Use)	.882	.850	.668	.598	1.673
	Scientific & Technical Journal Articles	.618	.149	.063	.603	1.658
	Social Media (Facebook)	-.080	-.418	-.191	.913	1.095

a. Dependent Variable: New Innovation Index

Figure 5.13 Coefficients Output of the Model 1 (Y2012)

b) The R Square which stated in **Figure 5.14** Model Summary is 0.792. It can be interpreted as there are 79.2% of the variation in the new innovation index is explained by ICT (Access & Use), and Scientific & Technical Journal Articles.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.890[a]	.792	.767	5.76987	.792	32.308	2	17	.000	1.213

a. Predictors: (Constant), Scientific & Technical Journal Articles, ICT (Access & Use)

b. Dependent Variable: New Innovation Index

Figure 5.14 Model Summary of the Model 1 (2012)

c) Determine whether the model is useful for predicting the response, at the 5% significance level: -

Step 1	Hypotheses
	H_0: $B_1 = B_2 = 0$
	H_1: at least one Bi $\neq$ 0
Step 2	Significance Level α = 0.05
Step 3	Rejection of H_0 because the p-value $\leq$ 0.05. The F= 32.308, and p-value = 0.000 $<$ 0.01, see **Figure 5.15.**
Step 4	p-value $<$ 0.01 $\leq$ 0.05, so reject H_0.
Step 5	As the result, there are at least one of the predictors is useful for predicting new innovation index (nii) so this model is useful.

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2151.146	2	1075.573	32.308	.000[a]
	Residual	565.953	17	33.291		
	Total	2717.099	19			

a. Predictors: (Constant), Scientific & Technical Journal Articles, ICT (Access & Use)

b. Dependent Variable: New Innovation Index

Figure 5.15 Analysis of Variance (ANOVA) Output of the Model 1 (2012)

d) Determine which predictor variables can be removed from the Model 1 as unnecessary, at the 5% significance level: -

Step 1	Hypotheses
	H_0: $B_1 = 0$ (ICT (Access & Use) is not useful for predicting nii).
	H_1: $B_1 \neq 0$ (ICT (Access & Use) is useful for predicting nii).
Step 2	Significance Level $\alpha = 0.05$
Step 3	Rejection of H_0 because the p-value ≤ 0.05. The t = 5.784, p-value = 0.000, see **Figure 5.7**.
Step 4	p-value = 0.000 $<$ 0.01 $\leq$ 0.05, so reject H_0.
Step 5	As the result, ICT (Access & Use) is useful for predicting new innovation index so this model is useful.

Step 1	Hypotheses
	H_0: $B_2 = 0$ (Scientific & Technical Journal Articles is not useful for predicting nii).
	H_1: $B_2 \neq 0$ (Scientific & Technical Journal Articles is useful for predicting nii).
Step 2	Significance Level $\alpha = 0.05$
Step 3	Accept of H_0 because the p-value $>$ 0.05. The t=1.043, p-value =0.311, see **Figure 5.7**.
Step 4	p-value $>$ 0.01 $>$ 0.05, so accept H_0.
Step 5	As the result, Scientific & Technical Journal Articles is not useful for predicting new innovation index so this model is useful.

Step 4: Assumption Testing

Osborne, Jason & Elaine Waters (2002) highlighted that, "*assumptions of linearity, reliability of measurement, homoscedasticity, and normality should always test*". Skew, kurtosis, and P-P plots can be considered as useful information to researcher in testing about normality (Osborne, Jason & Elaine Waters, 2002).

On the other hand, Field, A. (2005) also stated that "*For regression model to generalize…must be sure that underlying assumptions have been meet…*" such as the following assumption: -

- Variable type, the Independent Variables must be quantitative. Besides that, quantitative variable can be defined that it is varies by amount. Usually, both continuous and discrete variables can be quantitative; it is also "*measured by numerically and collected by measuring or counting*" (Chapter 1 Introduction to Statistics. SAGE Publication, no date/ n.d.).

- Multicollinearity in a regression model when a strong correlation between two and, or more independent variables are existed. Besides that, by using SPSS, Variance Inflation Factor (VIF) is one of the various collinearity diagnostics. Field, A. (2005) highlighted that it "*indicates whether a predictor has a strong linear relationship with the other predictor(s)*" In general, VIF value is less than 10 and, or Tolerance above .2 denote no potential problem then meant no collinearity within the data.

- Independence errors, which also described as "lack of autocorrelation" and it can be tested by the Durbin-Watson test. If the Durbin-Watson test value is a value greater than 2, it denoted that there is a negative correlation. In contrast, it is a positive correlation when the value is below 2 (Field, A., 2005).

Table 5.2 and Table 5.3 show Assumption Testing Checklist of the Model 1, and Model 2 in both year 2011 and 2012. In summary, these 4 models have a positive correlation. Besides that, there are no collinerity problems. The variable types are categorized as scale, continuous, and quantitative variables.

Table 5.2 Assumption Testing Checklist of the Model 1, and Model 2 in Year 2011

Assumptions	Model 1	Model 2
Variable Type	Scale, Continuous, and Quantitative Variables.	Scale, Continuous, and Quantitative Variables.
Multicollinearity	Average of the VIF value is 1.717 The Tolerance all are .582 Resulted: No Collinearity Problem	Average of the VIF is 1.637 Tolerance are 0.563, 0.506, & 0.863; all above 0.2 Resulted: No Collinearity Problem.
Indpendence error: Durbin-Watson Test	Durbin-Watson value: 1.764. It is a positive correlation.	Durbin-Watson value: 1.700. It is a positive correlation

Table 5.3 Assumption Testing Checklist of the Model 1, and Model 2 in Year 2012

Assumptions	Model 1	Model 2
Variable Type	Scale, Continuous, and Quantitative Variables.	Scale, Continuous, and Quantitative Variables.
Multicollinearity	Average of the VIF value is 1.548 The Tolerance all are .646 Resulted: No Collinearity Problem.	Average of the VIF value is 1.475. The Tolerance all are 0.598, 0.603, and 0.913 all are above 0.2. Resulted: No Collinearity Problem.
Indpendence error: Durbin-Watson Test	Durbin-Watson value: 1.213. It is a positive correlation.	Durbin-Watson value: 1.472. It is a positive correlation.

Finding

In summary of **Table 5.4** and **Table 5.5**, R Square of the Model 3 in year 2011 is 94.3% of the variation in the new innovation index is explained by nine predictors. It is higher than the Model 3 in year 2012 which only 93.3%.

Table 5.4 Model 1, Model 2, and Model 3 Summary in Year 2011

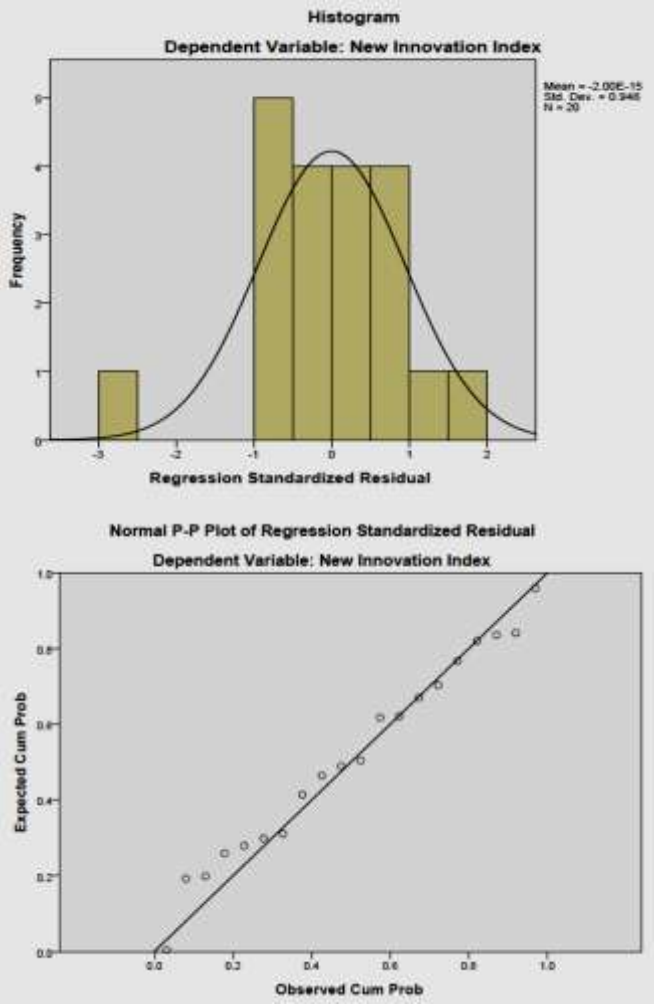
	Model 1	**Model 2**
Equation	$Y = 19.582 + 0.318\ X_1 + 0.060\ X_2$.	$Y = 26.698 + 0.337\ X_1 + 0.023\ X_2 - 0.98\ X_5$
R Square	0.828	0.867
F	40.986	34.784
p-value	0.000	0.000
	Model 3	
Equation	$Y = 30.218 + 0.60X_1 + 0.084X_2. + 0.239\ X_3 + 0.118X_4 - 0.067X_5 + 0.078\ X_6 - 0.156X_7 - 0.028\ X_8 - 0.085\ X_9$	
R Square	0.943	
F	18.410	
p-value	0.000	

Table 5.5 Model 1, Model 2, and Model 3 Summary in Year 2012

	Model 1	**Model 2**
Equation	$Y = 19.411 + 0.323\ X_1 + 0.055\ X_2$.	$Y = 26.548 + 0.350\ X_1 + 0.031\ X_2. - 0.180\ X_5$
R Square	0.792	0.828
F	32.308	25.679
p-value	0.000	0.000
	Model 3	
Equation	$Y = 31.764 + 0.32X_1 + 0.073X_2. + 0.323\ X_3 + 0.119X_4 - 0.180X_5 + 0.077\ X_6 - 0.192X_7 - 0.095\ X_8 - 0.113\ X_9$	
R Square	0.933	
F	15.439	
p-value	0.000	

P-value in all the models in both years are significance which p-value < 0.01 and $\leq$ 0.05. Overall shows that the output of all the models in year 2011 are relatively higher than year 2012 in terms of R Square but among the model 1 in year 2011 is lower than 2012.

Figure 5.16 Outcome: nii



- On the left-hand side shows the Histogram and P-P plots of normally distributed residuals of the Model 1 (Y2011). **Figure 5.16** shows both histogram and P-P plots are Outcome of new innovation index (**nii**).
- Figure 5.16 shows matrix scatter plot, ICT (Access & Use), and Scientific & Technical Journal Article have positive linear relationship.

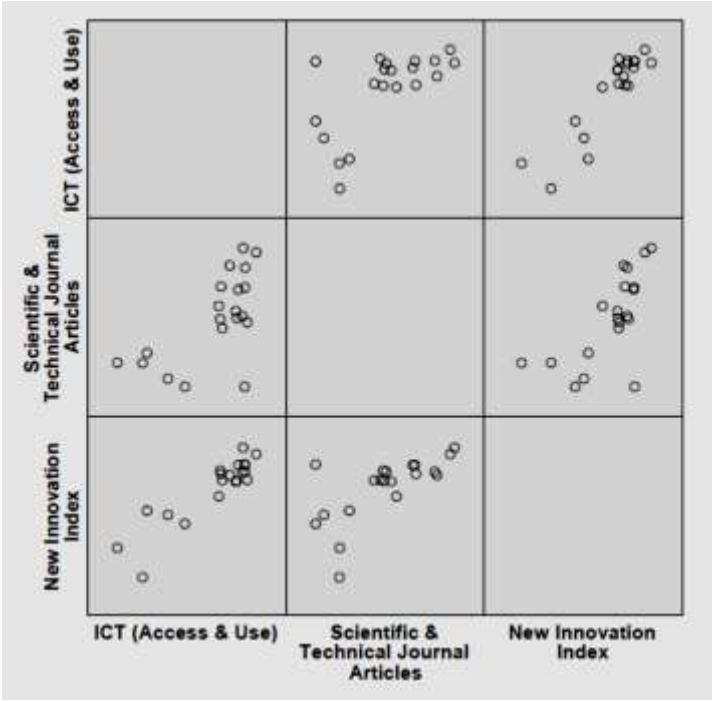


Figure 5.16 Matrix Scatter plot

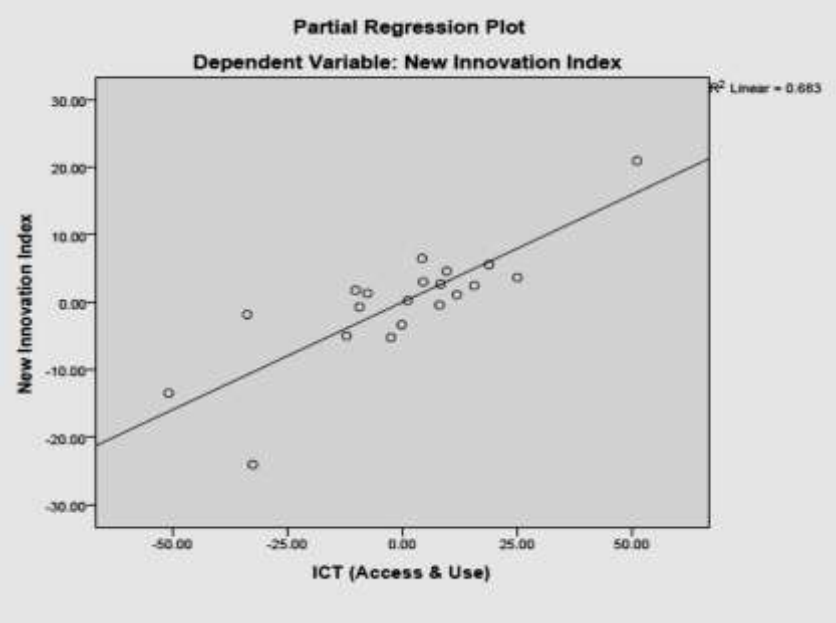


Figure 5.17 ICT (Access & Use) Partial Plot

- **Figure 5.17** shows ICT (Access & Use) has a strong positive relationship to new innovation index (nii) compare to **Figure 5.18**.
- **Figure 5.17** & **Figure 5.18 are partial plots of the Model 1 (Y2011).**

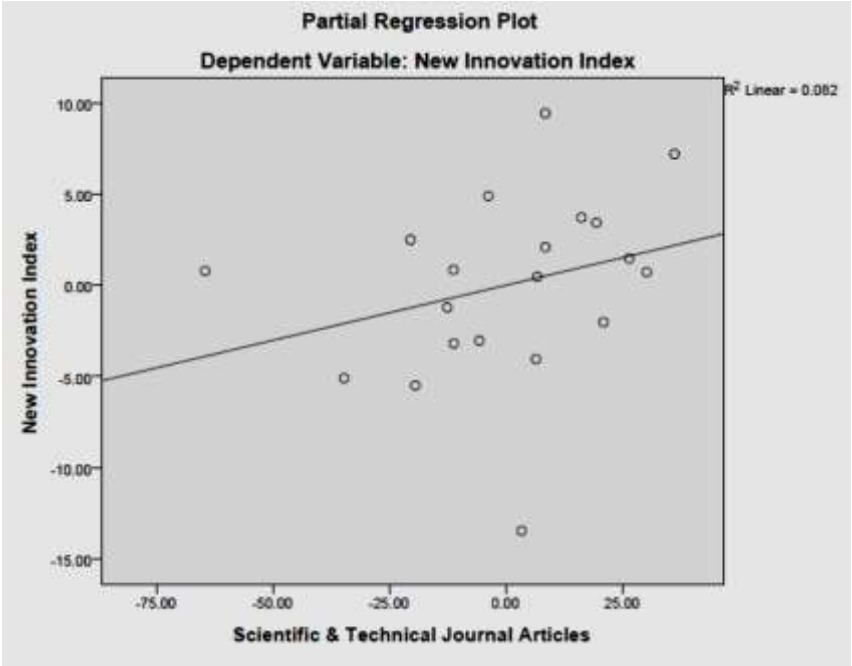
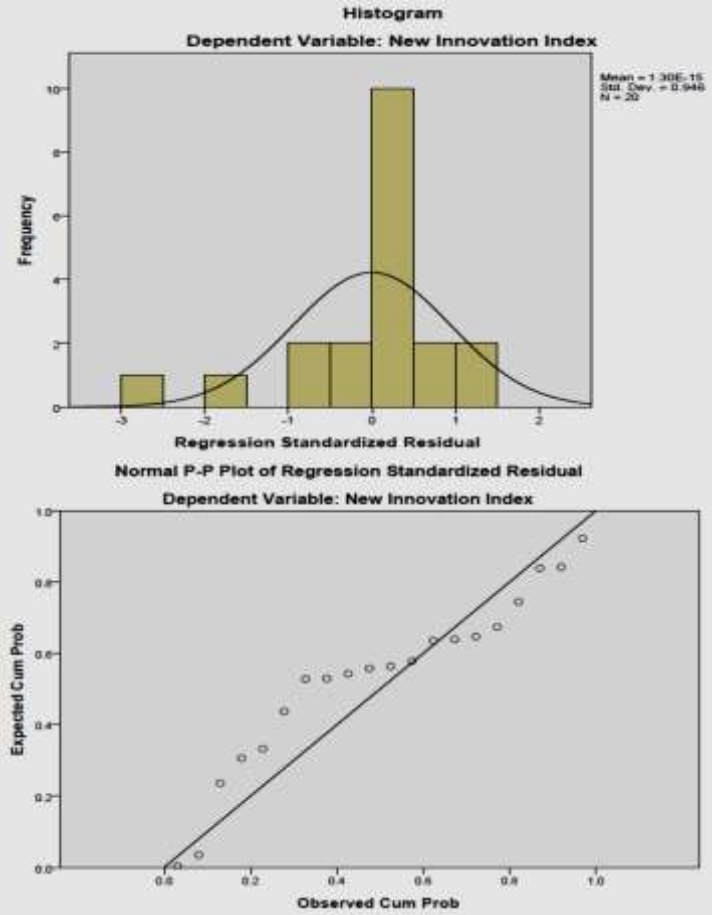


Figure 5.18 Scientific & Technical Journal Articles Partial

Figure 5.19 Outcome: nii



- On the left-hand side shows the Histogram and P-P plots of normally distributed residuals of **the Model 1 (Y2012)**. **Figure 5.19** shows both histogram and P-P plots are Outcome of new innovation index (**nii**).
- **Figure 5.20** shows matrix scatter plot, ICT (Access & Use), and Scientific & Technical Journal Article also have positive linear relationship.

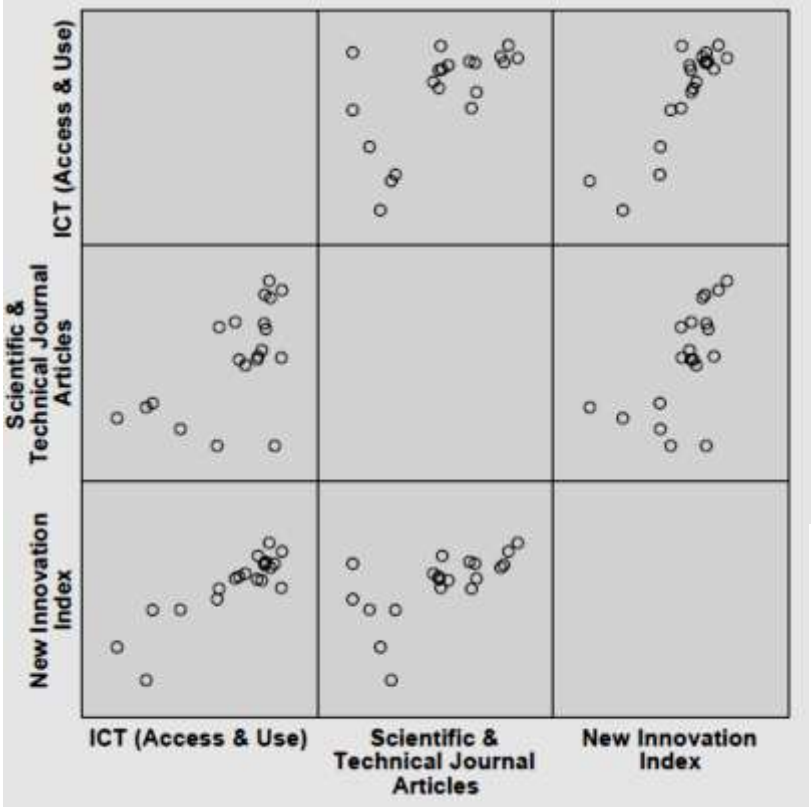


Figure 5.20 Matrix Scatter plot

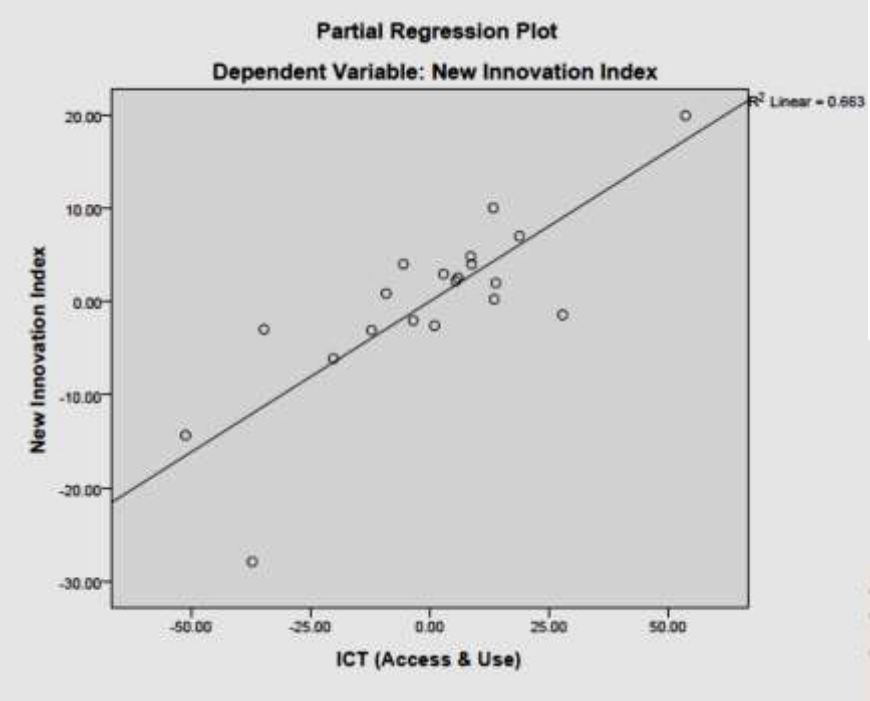


Figure 5.21 Scientific & Technical Journal Articles Partial Plot

- **Table 5.21** & **Table 5.22** are partial plots of the **Model 1 (Y2012). Table 5.21** The Y2012 model 1 partial plots is more stronger positive relationship compare to The 2011 model 1 partial plot, see **Table 5.17**
- Scientific & Technical Journal Articles not much different in both years (2011 and 2012).

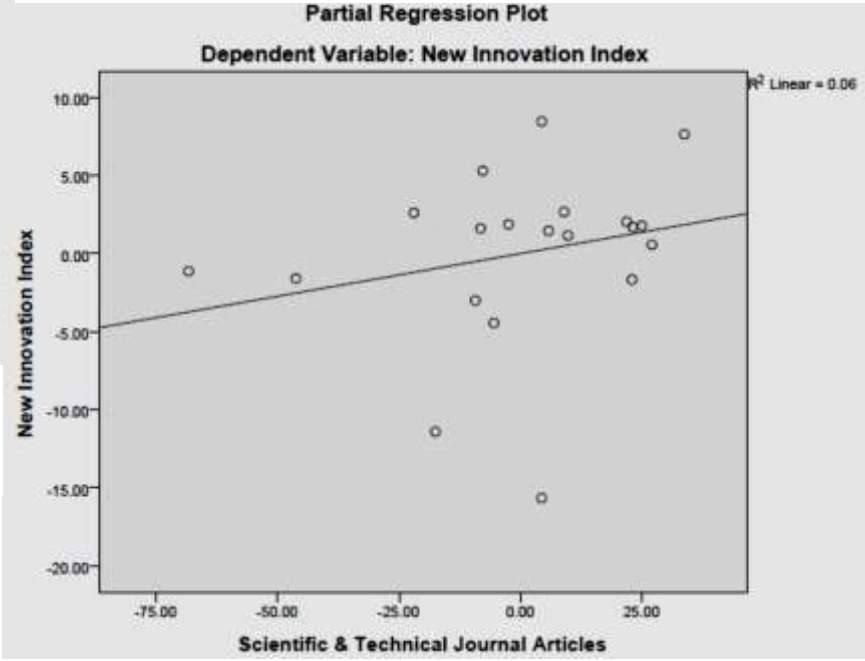


Figure 5.22 Scientific & Technical Journal Articles Partial Plot

Chapter 6| Conclusion

This report is to investigate the relationship of innovation and media. The total of nine independent variables, which are indicators related to media had been collected. Although the R Square of the models shows up to 94.3% in year 2011, and 93.3 % in year 2012 of the variation in the new innovation index is explained by nine predictors but the output not all of the predictors are significant (see summary in **Table 5.4** and **Table 5.5**).

P-value in all the models in both years are significance which p-value < 0.01 and $\leq$ 0.05. Overall shows that the output of all the models in year 2011 are relatively higher than year 2012 in terms of R Square but among the model 1 in year 2011 is lower than 2012. These are the investigation result had found in the sample data.

Some of independent variables are also significant not only strong relationship to new innovation index. For example, in the Model 3 (2011), see **Figure 6.1**. As illustrated in the **Figure 6.1** Output shows that, YouTube has p-value < 0.01 with these predictors such as New Innovation Index (nii), ICT (Access & Use or itc_anu), Scientific & Technical Journal Articles (stja), Daily Newspapers Circulation, and Wikipedia Monthly Edits. Besides that, YouTube has p-value $\leq$ 0.05 with National feature films produced.

On the other hand, Search Engine (Google) also had p-value $\leq$ 0.05 with Scientific & Technical Journal Articles, Wikipedia Monthly Edits, and Video Uploads on YouTube, but it does not have any clear or direct significant relationship with new innovation index. Basically, in this sample, Broadcast Media, and Search Engine (Google) do not have any direct significant relationship with new innovation index. Meanwhile, realized that Broadcast media in both year 2011 and 2012 related models totally do not has relationship with other independent variables, as well as the dependent variable (new innovation index).

Correlations

		Video Uploads on Youtube	Broadcast Media	Serach Engine (Google)	Social Media (Facebook)
Pearson Correlation	New Innovation Index	.809	.123	.044	-.301
	ICT (Access & Use)	.837	-.015	.121	-.081
	Scientific & Technical Journal Articles	.585	.013	.381	-.328
	National Feature Films Produced	.430	-.140	.151	-.010
	Daily Newspapers Circulation	.590	-.144	.135	.034
	Wikipedia Monthly Edits	.705	-.112	.433	-.162
	Video Uploads on Youtube	1.000	.171	.446	-.138
	Broadcast Media	.171	1.000	-.107	-.359
	Serach Engine (Google)	.446	-.107	1.000	.315
	Social Media (Facebook)	-.138	-.359	.315	1.000
Sig. (1-tailed)	New Innovation Index	.000	.303	.428	.099
	ICT (Access & Use)	.000	.474	.305	.367
	Scientific & Technical Journal Articles	.003	.478	.049	.079
	National Feature Films Produced	.029	.279	.263	.484
	Daily Newspapers Circulation	.003	.272	.285	.444
	Wikipedia Monthly Edits	.000	.320	.028	.247
	Video Uploads on Youtube	.	.236	.024	.281
	Broadcast Media	.236	.	.327	.060
	Serach Engine (Google)	.024	.327	.	.088

Figure 6.1 Correlation Coefficients Output of the Model 3 (2011)

About the partial plots in both of the year 2011 and year 2012 included all models which had been tested, found that, the following four independent variables (predictors) have negative linear relationship with new innovation index: -

1. Wikipedia Monthly Edits
2. Broadcast Media
3. Search Engine (Google)
4. Social Media (Facebook)

In contrast, remaining five predictors are all positive linear relationship.

The limitations of this report papers is not enough sample size in regression. According to, Field, A. (2005) pointed out that, if number of predictor is ten, and the required sample size is equal to sixty records, then it will has large effects. This report only collected twenty records for each independent variable. In addition, lack of the knowledge and reading about Statistics, as well as the software packages such as SPSS, AMOS, etc. These are the parts should working harder, time by time.

The possible future study of this research topic would be recommended to investigate the interaction relationship between innovation index and media. In the coming future, suggest a research sample size which to collect at least 30 records for each income levels such high income, upper-middle income, and low income. Meanwhile, it should expands investigation about interaction relationship among the nine independent variables since **Figure 6.1** output raised up some questions of the relationship among the predictors.

This report concluded that based on result of the sample, believed that there are at least 94.3% in year 2011, and 93.3 % in year 2012 of the variation in the new innovation index is explained by nine predictors but the output not all of the predictors are significant.

References

Dutta, S, INSEAD, & Caulkin, S. (2007). Global Innovation Index Report 2007: The world's top innovators. *World Business.com,* January-February 2007, 26-37. Retrieved July 06, 2012, from http://www.globalinnovationindex.org/gii/main/previous/GII%202007.pdf

Dutta, S. & INSEAD. (2009). *Global Innovation Index 2008-2009*. Global Innovation Index.org. Retrieved July 06, 2012, from http://www.globalinnovationindex.org/gii/main/previous/2008-09/FullReport_08-09.pdf

Dutta, S. & INSEAD. (2010). *Global Innovation Index 2009-2010*. Global Innovation Index.org. Retrieved July 06, 2012, from http://www.globalinnovationindex.org/gii/main/previous/2009-10/FullReport_09-10.pdf

Dutta, S. & INSEAD. (2011). *Global Innovation Index 2011: Accelerating Growth and Development.* Global Innovation Index.org. Retrieved May 23, 2012, from May 23, 2012 from http://www.globalinnovationindex.org/gii/main/previous/2010-11/FullReport_10-11.pdf

Dutta, S. & INSEAD. (2012). *Global Innovation Index 2012: Stronger Innovation Linkages for Global Growth.* Global Innovation Index.org. Retrieved July 25, 2012 from http://www.globalinnovationindex.org/gii/main/previous/2010-11/FullReport_10-11.pdf

INSEAD. (2013). *INSEAD – The Business School for the World.* INSEAD. Retrieved May 21, 2013 from http://about.insead.edu/who_we_are/index.cfm

Dutta, S. (2011). *SOUMITRA DUTTA – Insead*. INSEAD. Retrieved May 21, 2013 from http://www.insead.edu/facultyresearch/faculty/cv.cfm?cid=943

INSEAD. (2012). *The Global Innovation Index 2012: Press Release*. Retrieved May 21, 2013 from http://insead-global-innovation-index-2012.blogspot.co.uk/p/press-release.html

GII 2012 – Analytical – Tool – Alcatel – Lucent. (2012). Retrieve November 13, 2012 from http://globalinnovationindex.org/gii/GII-2012-Analytical-Tool.xlsm

WIPO. (2012). *Release of the Global Innovation Index 2012: Switzerland Retains First-Place Position in Innovation Performance*. Retrieved November 16, 2012 from http://www.wipo.int/export/sites/www/pressroom/en/documents/pr_2012_715_3.pdf

Negative Population Growth.com. (2012). *Facts & Figures. World Population 1950 -2050*. Retrieved October 10, 2012, from http://www.npg.org/facts/world_pop_year.htm

The World Bank. (2012). *Internet Users*. Retrieved October 10, 2012, from http://data.worldbank.org/indicator/IT.NET.USER?display=graph

CIA. (2013). *CIA: The World Factbook*. Retrieved April 17, 2013 from https://www.cia.gov/library/publications/the-world-factbook/

StatCounter GlobalStats. (2012).*StatCounter GlobalStats: Search Engine*. Retrieved April 22, 2013 from http://gs.statcounter.com/

StatCounter GlobalStats. (2011).*StatCounter GlobalStats: Search Engine*. Retrieved June 04, 2013 from http://gs.statcounter.com/

Webcertain Education Ltd. (2012). *The Webcertain Global Search & Social Report 2012*. Retrieved January 27, 2013 from http://globalcentral.net/assets/cb757434/Search-Social-2012-Done.pdf

Hong Kong Government Yearbook. (2011). Retrieved June 11, 2013 from http://www.yearbook.gov.hk/2011/en/pdf/E17.pdf

Hong Kong Government Fact sheets. (2012). Retrieved June 04, 2013 from http://www.gov.hk/en/about/abouthk/factsheets/docs/media.pdf

Freedom House. (2011). *Freedom of the Press 2011*. Retrieved June 11, 2013 from http://www.freedomhouse.org/report/freedom-press/freedom-press-2011

Freedom House. (2012). *Freedom of the Press 2012*. Retrieved June 11, 2013 from http://www.freedomhouse.org/report/freedom-press/freedom-press-2012

Franklin, M., Stam, P. & Clayton, T. (2008). *ICT impact assessment by linking data across sources and countries*. The European Commission. Retrieved June 19, 2013 from http://epp.eurostat.ec.europa.eu/portal/page/portal/ver-1/information_society/methodology/ICT_IMPACTS_Summary_Report.pdf

Goodwin, D. (2011). *S. Korean Companies Claim Google's Android Blocking Competing Search Apps*. Retrieved July 01, 2013 from http://searchenginewatch.com/article/2049723/S.-Korean-Companies-Claim-Googles-Android-Blocking-Competing-Search-Apps

World Bank. (2012). *ICT for Greater Development Impact: World Bank Group Strategy for Information and Communication Technology 2012 - 2015*. Retrieved June 19, 2013 from http://siteresources.worldbank.org/EXTINFORMATIONANDCOMMUNICATIONANDTECHNOLOGIES/Resources/WBG_ICT_Strategy-2012.pdf

Lundvall, B. A. (2009). *The Future of Innovation in The Learning Economy*. Retrieved November 16, 2012 from

http://thefutureofinnovation.org/contributions/view/470/the_future_of_innovation_in_the_learning_economy

Deephouse (2000). Pollock and Rindova. (2003) Rindova, et al., 2007; Petkova, A.P, Rindova, V.P. & Gupta, A.K., 2008). Petkova, A. *Oxford Handbook of Corporate Reputation*. Retrieved October 12, 2012 from

http://www.sbs.ox.ac.uk/centres/reputation/Documents/Antoaneta%20Petkova_chapter15.pdf

Pollock, T. G., & Rindova, V. P., 2003. Media Legitimation Effects in the Market for Initial Public Offerings. *The Academy of Management Journal*, Vol. 46, No.5 (Oct, 2003), 631-642. Retrieved October 12, 2012 from

http://www.personal.psu.edu/faculty/t/x/txp14/pdfs/pollock%20and%20rindova%20AMJ.pdf

Raban, D.R. & Yablowitz, M.G. (2012). *Proceedings of the 6th Israel Association for Information Systems (ILAIS) Conference July, 2012*. Retrieved October 12, 2012 from http://ilais.openu.ac.il/wp/wp-content/uploads/2012/07/ILAIS-2012-Proceedings.pdf

Agostino, A (1999). The Relevance of Media as Artifact: Technology Situated in Context. *Educational Technology & Society 2 (4)*. Retrieved October 12, 2012 from http://www.ifets.info/others/journals/2_4/agostino.html

Indiana Office of Tourism Development. (2010). *New media has big impact on tourism businesses*. Retrieved December 28, 2012 from http://www.in.gov/tourism/pdfs/NewMediaWorkshop%202010-nov16.pdf

Asgari, B & Lim, W.Y. (2009). Accumulated Knowledge and Technological Progress in Terms of Learning Rates: A Comparative Analysis on the Manufacturing Inductry and the Service Industry in Malaysia. *Asian Journal of Technology Innovation*, 17 (2), 71-99.

Yoffie, D. B, Max & Starr, D. (2010). *Innovations Changing the World: New Technologies, Harvard, and China. Harvard and China: A Research Symposium, President & Fellow of Harvard College*. P. 1-3. Retrieved October 12, 2012 from http://shanghaicenter.harvard.edu/event/Harvard%20and%20China%20Combined%20v061510.pdf

Henten, A. & Tadayoni, R. (2008). *The impact of the internet on media technology, platforms and innovation. In The internet and the mass media.* (pp. 45-65). London: SAGE Publications Ltd. Retrieved January 27, 2013 from doi: 10.4135/9781446216316.n3.

Benjamin, Scott and Reger, Rhonda K. and Pfarrer, Michael D. (2012). Media Coverage of US Wind Power Plants: Does it Generate Electricity? *NUI Maynooth ePrints and eTheses Archive*. Retrieved April 09, 2013 from http://eprints.nuim.ie/4057/

Russell Shank. (1962). *Scientific and Technical Periodicals*. Retrieved October 12, 2012 from https://www.ideals.illinois.edu/bitstream/handle/2142/6020/librarytrendsv10i3l_opt.pdf?sequence=1

World Bank. (2013). *Scientific and technical journal articles| Data| Table*. Retrieved July 01, 2013 from http://data.worldbank.org/indicator/IP.JRN.ARTC.SC

Kianinejad, A. (2012). *Lecture Notes: Research method*. Slide 4 & 5.

Field, A. (2000). *Discovering Statistics Using SPSS for Windows: Advanced Techniques for the Beginner*. SAGE Publications. Pp 1, 3, 72, 85, 87, 88, 118, and 150.

Field, A. (2005). *Discovering Statistics Using SPSS*, Second Edition. SAGE Publications. Pp. 8, 9, 10, 72, 144, 145, 157, 160, 169, 173, 174, 196, and 197.

Osborne, Jason & Elaine Waters (2002). Four assumptions of multiple regression that researchers should always test. *Practical Assessment, Research & Evaluation*, 8(2). Retrieved July 11, 2013 from http://PAREonline.net/getvn.asp?v=8&n=2

Chapter 1 Introduction to Statistics. SAGE Publication. (no date/ n.d.). Pp. 17, . Retrieved July 12,2013 from http://www.sagepub.com/upm-data/40006_Chapter1.pdf

Appendix 1: Data Tables of the GII 2012

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II: Data Tables

1.2.1 Regulatory quality

Regulatory quality index*[a] | 2010

Rank	Country/Economy	Value	Score (0–100)	Percent rank
1	Denmark	1.90	100.00	1.00
2	Hong Kong (China)	1.89	99.73	0.99
3	Finland	1.84	98.36	0.99
4	Singapore	1.80	97.49	0.98
5	Netherlands	1.79	97.26	0.97
6	New Zealand	1.79	97.18	0.96
7	United Kingdom	1.75	96.03	0.96
8	Sweden	1.72	95.39	0.95
9	Canada	1.69	94.55	0.94
10	Luxembourg	1.69	94.55	0.94
11	Australia	1.66	93.79	0.93
12	Ireland	1.65	93.66	0.92
13	Switzerland	1.65	93.66	0.91
14	Germany	1.58	91.72	0.91

1.2.2 Rule of law

Rule of law index*[a] | 2010

Rank	Country/Economy	Value	Score (0–100)	Percent rank
1	Finland	1.97	100.00	1.00
2	Sweden	1.95	99.39	0.99
3	Norway	1.93	98.79	0.99
4	Denmark	1.88	97.54	0.98
5	New Zealand	1.86	97.12	0.97
6	Luxembourg	1.82	96.12	0.96
7	Netherlands	1.81	95.70	0.96
8	Austria	1.80	95.36	0.95
9	Canada	1.79	95.17	0.94
10	Switzerland	1.78	94.90	0.94
11	Australia	1.77	94.67	0.93

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II: Data Tables

1.2.3 Cost of redundancy dismissal

Sum of notice period and severance pay for redundancy dismissal years of tenure, with a minimum threshold of 8 weeks) | 2011

Rank	Country/Economy	Value	Score (0–100)	Percent rank
1	Austria	8.00	100.00	0.86
1	Bahrain	8.00	100.00	0.86
1	Belgium	8.00	100.00	0.86
1	Brunei Darussalam	8.00	100.00	0.86
1	Bulgaria	8.00	100.00	0.86
1	Cyprus	8.00	100.00	0.86
1	Denmark	8.00	100.00	0.86
1	Georgia	8.00	100.00	0.86
1	Hong Kong (China)	8.00	100.00	0.86
1	Ireland	8.00	100.00	0.86
1	Italy	8.00	100.00	0.86
1	Japan	8.00	100.00	0.86
1	Jordan	8.00	100.00	0.86
1	New Zealand	8.00	100.00	0.86
1	Oman	8.00	100.00	0.86
1	Serbia	8.00	100.00	0.86
1	Singapore	8.00	100.00	0.86
1	United Arab Emirates	8.00	100.00	0.86
1	United Kingdom	8.00	100.00	0.86
1	United States of America	8.00	100.00	0.86
21	Belize	8.33	99.34	0.85
21	Romania	8.33	99.34	0.85
23	Kazakhstan	8.67	98.68	0.80
23	Lebanon	8.67	98.68	0.80
23	Mongolia	8.67	98.68	0.80
23	Netherlands	8.67	98.68	0.80
23	Norway	8.67	98.68	0.80
23	Syrian Arab Rep.	8.67	98.68	0.80
23	Uganda	8.67	98.68	0.80
30	Bosnia and Herzegovina	9.22	97.58	0.79
31	South Africa	9.33	97.36	0.77
31	Tanzania, United Rep.	9.33	97.36	0.77
33	Fiji	9.67	96.70	0.75
33	Latvia	9.67	96.70	0.75
33	Namibia	9.67	96.70	0.75
36	Canada	10.00	96.04	0.74
37	Finland	10.11	95.82	0.72
37	Iceland	10.11	95.82	0.72
37	Poland	10.11	95.82	0.72
37	Switzerland	10.11	95.82	0.72

37	Poland	10.11	95.82	0.72
37	Switzerland	10.11	95.82	0.72
41	Niger	10.12	95.80	0.71

Appendix 2: Data Tables: A) 84 Indicators

Tables for Innovation Index 2011

1.1.1 Political Stability

Political stability and absence of violence/ terrorism index (0-100)| 2009

Rank	Ccode	Country	Value	Score (0-100)
1	FI	Finland	95.75	100.00
2	CH	Switzerland	92.45	96.22
3	NO	Norway	91.51	95.14
4	SG	Singapore	90.09	93.51
5	QA	Qatar	88.68	91.90
6	SE	Sweden	88.21	91.36
7	DK	Denmark	85.85	88.65
8	CA	Canada	85.38	88.12
9	IE	Ireland	84.43	87.03
10	NL	Netherlands	83.02	85.41
11	HK	Hong Kong (China)	81.60	83.78
12	DE	Germany	76.89	78.39
13	EE	Estonia	66.98	67.03
14	US	United States of America	58.96	57.84
15	GB	United Kingdom	54.72	52.98
16	KR	Korea, Rep.	52.36	50.28
17	MY	Malaysia	46.70	43.79
18	CN	China	29.72	24.33
19	IN	India	13.21	5.41
20	IR	Iran, Islamic Rep.	8.49	0.00

1.1.2 Government effectiveness

Government effective index (0-100)| 2009

Rank	Ccode	Country	Value	Score (0-100)
1	SG	Singapore	100.00	100.00
2	DK	Denmark	99.52	99.35
3	FI	Finland	99.05	98.71
4	SE	Sweden	98.57	98.06
5	CH	Switzerland	98.10	97.43
6	CA	Canada	96.67	95.49
7	HK	Hong Kong (China)	95.71	94.19
8	NO	Norway	94.76	92.90
9	NL	Netherlands	94.29	92.26
10	DE	Germany	91.90	89.03
11	GB	United Kingdom	90.95	87.74
12	US	United States of America	89.05	85.16
13	IE	Ireland	88.10	83.88
14	EE	Estonia	84.76	79.35
15	QA	Qatar	83.81	78.07
16	KR	Korea, Rep.	83.33	77.41
17	MY	Malaysia	79.52	72.25
18	CN	China	58.10	43.23
19	IN	India	54.29	38.07
20	IR	Iran, Islamic Rep.	26.19	0.00

1.1.3 Press freedom

Press freedom index (0=more freedom)| 2010

Rank	Ccode	Country	Value	Score (0-100)
1	FI	Finland	0.00	100.00
2	NO	Norway	0.00	100.00
3	NL	Netherlands	0.00	100.00
4	CH	Switzerland	0.00	100.00
5	SE	Sweden	0.00	100.00
6	EE	Estonia	2.00	97.88
7	IE	Ireland	2.00	97.88
8	DK	Denmark	2.50	97.36
9	DE	Germany	4.25	95.51
10	GB	United Kingdom	6.00	93.65
11	US	United States of America	6.75	92.86
12	CA	Canada	7.00	92.60
13	HK	Hong Kong (China)	10.75	88.63
14	KR	Korea, Rep.	13.33	85.90
15	QA	Qatar	38.00	59.81
16	IN	India	38.75	59.02
17	SG	Singapore	47.50	49.77
18	MY	Malaysia	50.75	46.33
19	CN	China	84.67	10.46
20	IR	Iran, Islamic Rep.	94.56	0.00

Tables for Innovation Index 2012

1.1.1 Political Stability

Political stability and absence of violence/ terrorism index | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	FI	Finland	1.38	100.00
2	NO	Norway	1.29	96.95
3	CH	Switzerland	1.21	94.24
4	SG	Singapore	1.12	91.19
5	SE	Sweden	1.08	89.83
6	QA	Qatar	1.06	89.15
7	DK	Denmark	1.01	87.46
8	IE	Ireland	1.00	87.12
9	CA	Canada	0.94	85.08
10	NL	Netherlands	0.93	84.75
11	HK	Hong Kong (China)	0.91	84.07
12	DE	Germany	0.81	80.68
13	EE	Estonia	0.64	74.92
14	GB	United Kingdom	0.40	66.78
15	US	United States of America	0.31	63.73
16	MY	Malaysia	0.14	57.97
17	KR	Korea, Rep.	0.10	56.61
18	CN	China	-0.77	27.12
19	IN	India	-1.31	8.81
20	IR	Iran, Islamic Rep.	-1.57	0.00

1.1.2 Government effectiveness

Government effectiveness index | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	SG	Singapore	2.25	100.00
2	FI	Finland	2.24	99.64
3	DK	Denmark	2.17	97.11
4	SE	Sweden	2.02	91.70
5	CH	Switzerland	1.91	87.73
6	CA	Canada	1.87	86.28
7	NO	Norway	1.79	83.39
8	HK	Hong Kong (China)	1.74	81.59
9	NL	Netherlands	1.73	81.23
10	GB	United Kingdom	1.56	75.09
11	DE	Germany	1.55	74.73
12	US	United States of America	1.44	70.76
13	IE	Ireland	1.31	66.06
14	EE	Estonia	1.22	62.82
15	KR	Korea, Rep.	1.19	61.73
16	MY	Malaysia	1.10	58.48
17	QA	Qatar	0.94	52.71
18	CN	China	0.12	23.10
19	IN	India	-0.01	18.41
20	IR	Iran, Islamic Rep.	-0.52	0.00

1.1.3 Press freedom

Press freedom index | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	FI	Finland	-10.00	100.00
2	NO	Norway	-10.00	100.00
3	EE	Estonia	-9.00	99.32
4	NL	Netherlands	-9.00	99.32
5	CH	Switzerland	-6.20	97.41
6	CA	Canada	-5.67	97.05
7	DK	Denmark	-5.67	97.05
8	SE	Sweden	-5.50	96.93
9	IE	Ireland	-4.00	95.91
10	DE	Germany	-3.00	95.23
11	GB	United Kingdom	2.00	91.81
12	KR	Korea, Rep.	12.67	84.54
13	US	United States of America	14.00	83.63
14	HK	Hong Kong (China)	17.00	81.58
15	QA	Qatar	46.00	61.80
16	MY	Malaysia	56.00	54.98
17	IN	India	58.00	53.62
18	SG	Singapore	61.00	51.57
19	CN	China	136.00	0.41
20	IR	Iran, Islamic Rep.	136.60	0.00

Source: Compiled the data value from the Dutta, S. & INSEAD. (2011), and Dutta, S. & INSEAD. (2012).

Tables for Innovation Index 2011

1.2.1 Regulatory quality

Regulatory quality index (0-100)| 2009

Rank	Ccode	Country	Value	Score (0-100)
1	SG	Singapore	100.00	100.00
2	HK	Hong Kong (China)	99.52	99.50
3	DK	Denmark	99.05	99.02
4	FI	Finland	97.62	97.54
5	NL	Netherlands	97.14	97.04
6	SE	Sweden	96.67	96.56
7	CA	Canada	96.19	96.06
8	IE	Ireland	95.24	95.08
9	CH	Switzerland	94.76	94.58
10	GB	United Kingdom	94.29	94.09
11	DE	Germany	92.38	92.12
12	EE	Estonia	91.90	91.62
13	NO	Norway	91.43	91.13
14	US	United States of America	89.52	89.16
15	KR	Korea, Rep.	75.24	74.39
16	QA	Qatar	70.95	69.95
17	MY	Malaysia	60.00	58.62
18	CN	China	46.19	44.34
19	IN	India	44.29	42.37
20	IR	Iran, Islamic Rep.	3.33	0.00

1.2.2 Rule of law

Rule of law index (0-100)| 2009

Rank	Ccode	Country	Value	Score (0-100)
1	FI	Finland	100.00	100.00
2	SE	Sweden	99.53	99.41
3	NO	Norway	98.58	98.23
4	DK	Denmark	98.11	97.64
5	NL	Netherlands	97.17	96.47
6	CA	Canada	96.70	95.88
7	CH	Switzerland	95.75	94.70
8	IE	Ireland	94.34	92.94
9	GB	United Kingdom	93.87	92.36
10	DE	Germany	92.92	91.17
11	SG	Singapore	92.45	90.58
12	US	United States of America	91.51	89.41
13	HK	Hong Kong (China)	90.57	88.24
14	EE	Estonia	84.91	81.18
15	KR	Korea, Rep.	82.55	78.24
16	QA	Qatar	80.66	75.88
17	MY	Malaysia	65.09	56.47
18	IN	India	55.66	44.71
19	CN	China	45.28	31.76
20	IR	Iran, Islamic Rep.	19.81	0.00

1.2.3 Cost of redundancy dismissal

Sum of notice period and severance pay for redundancy dismissal (in salary weeks, averages for workers with 1, 5, and 10 years of tenure, with a minimum threshold of 8 weeks) | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	DK	Denmark	8.00	100.00
2	HK	Hong Kong (China)	8.00	100.00
3	IE	Ireland	8.00	100.00
4	SG	Singapore	8.00	100.00
5	GB	United Kingdom	8.00	100.00
6	US	United States of America	8.00	100.00
7	NL	Netherlands	8.67	96.55
8	NO	Norway	8.67	96.55
9	CA	Canada	10.00	89.69
10	FI	Finland	10.11	89.12
11	CH	Switzerland	10.11	89.12
12	EE	Estonia	12.90	74.74
13	SE	Sweden	14.44	66.80
14	IN	India	15.76	60.00
15	DE	Germany	21.56	30.10
16	IR	Iran, Islamic Rep.	23.11	22.11
17	QA	Qatar	23.22	21.55
18	MY	Malaysia	23.89	18.09
19	CN	China	27.40	0.00
20	KR	Korea, Rep.	27.40	0.00

Tables for Innovation Index 2012

1.2.1 Regulatory quality

Regulatory quality index (0-100)| 2010

Rank	Ccode	Country	Value	Score (0-100)
1	DK	Denmark	1.90	100.00
2	HK	Hong Kong (China)	1.89	99.72
3	FI	Finland	1.84	98.29
4	SG	Singapore	1.80	97.15
5	NL	Netherlands	1.79	96.87
6	GB	United Kingdom	1.75	95.73
7	SE	Sweden	1.72	94.87
8	CA	Canada	1.69	94.02
9	IE	Ireland	1.65	92.88
10	CH	Switzerland	1.65	92.88
11	DE	Germany	1.58	90.88
12	NO	Norway	1.48	88.03
13	EE	Estonia	1.45	87.18
14	US	United States of America	1.42	86.32
15	KR	Korea, Rep.	0.91	71.79
16	MY	Malaysia	0.58	62.39
17	QA	Qatar	0.54	61.25
18	CN	China	-0.23	39.32
19	IN	India	-0.39	34.76
20	IR	Iran, Islamic Rep.	-1.61	0.00

1.2.2 Rule of law

Rule of law index (0-100) | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	FI	Finland	1.97	100.00
2	SE	Sweden	1.95	99.30
3	NO	Norway	1.93	98.61
4	DK	Denmark	1.88	96.86
5	NL	Netherlands	1.81	94.43
6	CA	Canada	1.79	93.73
7	CH	Switzerland	1.78	93.38
8	GB	United Kingdom	1.77	93.03
9	IE	Ireland	1.76	92.68
10	SG	Singapore	1.69	90.24
11	DE	Germany	1.63	88.15
12	US	United States of America	1.58	86.41
13	HK	Hong Kong (China)	1.56	85.71
14	EE	Estonia	1.15	71.43
15	KR	Korea, Rep.	0.99	65.85
16	QA	Qatar	0.87	61.67
17	MY	Malaysia	0.51	49.13
18	IN	India	-0.06	29.27
19	CN	China	-0.35	19.16
20	IR	Iran, Islamic Rep.	-0.90	0.00

1.2.3 Cost of redundancy dismissal

Sum of notice period and severance pay for redundancy dismissal (in salary weeks, averages for workers with 1, 5, and 10 years of tenure, with a minimum threshold of 8 weeks) | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	DK	Denmark	8.00	100.00
2	HK	Hong Kong (China)	8.00	100.00
3	IE	Ireland	8.00	100.00
4	SG	Singapore	8.00	100.00
5	GB	United Kingdom	8.00	100.00
6	US	United States of America	8.00	100.00
7	NL	Netherlands	8.67	96.55
8	NO	Norway	8.67	96.55
9	CA	Canada	10.00	89.69
10	FI	Finland	10.11	89.12
11	CH	Switzerland	10.11	89.12
12	EE	Estonia	12.90	74.74
13	SE	Sweden	14.44	66.80
14	IN	India	15.76	60.00
15	DE	Germany	21.56	30.10
16	IR	Iran, Islamic Rep.	23.11	22.11
17	QA	Qatar	23.22	21.55
18	MY	Malaysia	23.89	18.09
19	CN	China	27.40	0.00
20	KR	Korea, Rep.	27.40	0.00

Source: Compiled the data value from the Dutta, S. & INSEAD. (2011), and Dutta, S. & INSEAD. (2012).

Tables for Innovation Index 2011

1.3.1 Ease of starting a business

Ease of starting a business, percent rank index | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	CA	Canada	0.99	100.00
2	SG	Singapore	0.98	98.89
3	HK	Hong Kong (China)	0.97	97.78
4	IE	Ireland	0.96	96.67
5	US	United States of America	0.95	95.56
6	GB	United Kingdom	0.91	91.11
7	DK	Denmark	0.86	85.56
8	FI	Finland	0.82	81.11
9	NO	Norway	0.82	81.11
10	EE	Estonia	0.80	78.89
11	SE	Sweden	0.79	77.78
12	IR	Iran, Islamic Rep.	0.77	75.56
13	KR	Korea, Rep.	0.68	65.56
14	NL	Netherlands	0.63	60.00
15	CH	Switzerland	0.58	54.44
16	DE	Germany	0.52	47.78
17	MY	Malaysia	0.40	34.44
18	QA	Qatar	0.32	25.56
19	CN	China	0.18	10.00
20	IN	India	0.09	0.00

1.3.2 Ease of resolving insolvency

Ease of resolving insolvency, percent rank index | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	CA	Canada	0.99	100.00
2	SG	Singapore	0.99	100.00
3	DK	Denmark	0.98	98.67
4	NO	Norway	0.98	98.67
5	FI	Finland	0.97	97.33
6	GB	United Kingdom	0.97	97.33
7	IE	Ireland	0.96	96.00
8	NL	Netherlands	0.95	94.67
9	KR	Korea, Rep.	0.93	92.00
10	US	United States of America	0.93	92.00
11	HK	Hong Kong (China)	0.92	90.67
12	SE	Sweden	0.91	89.33
13	DE	Germany	0.81	76.00
14	QA	Qatar	0.81	76.00
15	CH	Switzerland	0.77	70.67
16	MY	Malaysia	0.69	60.00
17	CN	China	0.61	49.33
18	EE	Estonia	0.59	46.67
19	IR	Iran, Islamic Rep.	0.36	16.00
20	IN	India	0.24	0.00

1.3.3 Ease of paying taxes

Ease of paying taxes, percent rank index | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	HK	Hong Kong (China)	0.99	100.00
2	QA	Qatar	0.99	100.00
3	IE	Ireland	0.98	98.88
4	SG	Singapore	0.98	98.88
5	CA	Canada	0.96	96.63
6	DK	Denmark	0.94	94.38
7	CH	Switzerland	0.93	93.26
8	GB	United Kingdom	0.89	88.76
9	NO	Norway	0.88	87.64
10	KR	Korea, Rep.	0.79	77.53
11	MY	Malaysia	0.79	77.53
12	NL	Netherlands	0.78	76.40
13	EE	Estonia	0.77	75.28
14	SE	Sweden	0.75	73.03
15	FI	Finland	0.68	65.17
16	US	United States of America	0.62	58.43
17	DE	Germany	0.54	49.44
18	IR	Iran, Islamic Rep.	0.36	29.21
19	CN	China	0.35	28.09
20	IN	India	0.10	0.00

Tables for Innovation Index 2012

1.3.1 Ease of starting a business

Ease of starting a business, percent rank index | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	CA	Canada	0.99	100.00
2	SG	Singapore	0.98	98.89
3	HK	Hong Kong (China)	0.97	97.78
4	IE	Ireland	0.96	96.67
5	US	United States of America	0.95	95.56
6	GB	United Kingdom	0.91	91.11
7	DK	Denmark	0.86	85.56
8	FI	Finland	0.82	81.11
9	NO	Norway	0.82	81.11
10	EE	Estonia	0.80	78.89
11	SE	Sweden	0.79	77.78
12	IR	Iran, Islamic Rep.	0.77	75.56
13	KR	Korea, Rep.	0.68	65.56
14	NL	Netherlands	0.63	60.00
15	CH	Switzerland	0.58	54.44
16	DE	Germany	0.52	47.78
17	MY	Malaysia	0.40	34.44
18	QA	Qatar	0.32	25.56
19	CN	China	0.18	10.00
20	IN	India	0.09	0.00

1.3.2 Ease of resolving insolvency

Ease of resolving insolvency, percent rank index | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	CA	Canada	0.99	100.00
2	SG	Singapore	0.99	100.00
3	DK	Denmark	0.98	98.67
4	NO	Norway	0.98	98.67
5	FI	Finland	0.97	97.33
6	GB	United Kingdom	0.97	97.33
7	IE	Ireland	0.96	96.00
8	NL	Netherlands	0.95	94.67
9	KR	Korea, Rep.	0.93	92.00
10	US	United States of America	0.93	92.00
11	HK	Hong Kong (China)	0.92	90.67
12	SE	Sweden	0.91	89.33
13	DE	Germany	0.81	76.00
14	QA	Qatar	0.81	76.00
15	CH	Switzerland	0.77	70.67
16	MY	Malaysia	0.69	60.00
17	CN	China	0.61	49.33
18	EE	Estonia	0.59	46.67
19	IR	Iran, Islamic Rep.	0.36	16.00
20	IN	India	0.24	0.00

1.3.3 Ease of paying taxes

Ease of paying taxes, percent rank index | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	HK	Hong Kong (China)	0.99	100.00
2	QA	Qatar	0.99	100.00
3	IE	Ireland	0.98	98.88
4	SG	Singapore	0.98	98.88
5	CA	Canada	0.96	96.63
6	DK	Denmark	0.94	94.38
7	CH	Switzerland	0.93	93.26
8	GB	United Kingdom	0.89	88.76
9	NO	Norway	0.88	87.64
10	KR	Korea, Rep.	0.79	77.53
11	MY	Malaysia	0.79	77.53
12	NL	Netherlands	0.78	76.40
13	EE	Estonia	0.77	75.28
14	SE	Sweden	0.75	73.03
15	FI	Finland	0.68	65.17
16	US	United States of America	0.62	58.43
17	DE	Germany	0.54	49.44
18	IR	Iran, Islamic Rep.	0.36	29.21
19	CN	China	0.35	28.09
20	IN	India	0.10	0.00

Source: Compiled the data value from the Dutta, S. & INSEAD. (2011), and Dutta, S. & INSEAD. (2012).

Tables for Innovation Index 2011

2.1.1 Expenditure on education

Current expenditure on education (% of GNI)| 2008

Rank	Ccode	Country	Value	Score (0-100)
1	DK	Denmark	7.41	100.00
2	SE	Sweden	6.41	82.21
3	NO	Norway	6.03	75.44
4	FI	Finland	5.64	68.51
5	IE	Ireland	5.17	60.14
6	GB	United Kingdom	5.06	58.19
7	NL	Netherlands	4.85	54.45
8	US	United States of America	4.79	53.38
9	CA	Canada	4.78	53.20
10	CH	Switzerland	4.65	50.89
11	EE	Estonia	4.61	50.18
12	DE	Germany	4.28	44.31
13	MY	Malaysia	4.04	40.04
14	IR	Iran, Islamic Rep. (2009)	4.04	40.04
15	KR	Korea, Rep.	3.94	38.26
16	IN	India	3.17	24.56
17	SG	Singapore (2010)	3.01	21.71
18	HK	Hong Kong (China) (2009)	2.98	21.17
19	CN	China	1.80	0.18
20	QA	Qatar (2008)	1.79	0.00

2.1.2 Public expenditure on education per pupil

Public expenditure on education per pupil, all levels (% of GDP per capita)| 2007

Rank	Ccode	Country	Value	Score (0-100)
1	DK	Denmark	31.07	100.00
2	SE	Sweden	27.98	84.47
3	CH	Switzerland	26.24	75.73
4	NO	Norway	25.76	73.32
5	GB	United Kingdom	25.32	71.11
6	FI	Finland	25.00	69.50
7	HK	Hong Kong (China) (2009)	23.50	61.96
8	CA	Canada (2002)	23.46	61.76
9	NL	Netherlands	23.41	61.51
10	US	United States of America	21.72	53.02
11	EE	Estonia	20.60	47.39
12	IR	Iran, Islamic Rep. (2009)	19.39	41.31
13	KR	Korea, Rep.	17.81	33.37
14	MY	Malaysia (2008)	15.04	19.45
15	IN	India (2006)	12.30	5.68
16	QA	Qatar (2004)	11.17	0.00
17	CN	China	n/a	n/a
18	DE	Germany	n/a	n/a
19	IE	Ireland	n/a	n/a
20	SG	Singapore	n/a	n/a

2.1.3 School life expentancy

School life expectancy, primary to tertiary education (years)| 2008

Rank	Ccode	Country	Value	Score (0-100)
1	IE	Ireland	17.88	100.00
2	NO	Norway	17.32	92.56
3	FI	Finland	17.07	89.24
4	DK	Denmark	16.83	86.06
5	KR	Korea, Rep.	16.82	85.92
6	US	United States of America (201	16.76	85.13
7	NL	Netherlands	16.71	84.46
8	GB	United Kingdom	16.13	76.76
9	EE	Estonia	15.73	71.45
10	HK	Hong Kong (China) (2009)	15.73	71.45
11	SE	Sweden	15.60	69.72
12	CH	Switzerland	15.47	67.99
13	CA	Canada (2002)	15.13	63.48
14	IR	Iran, Islamic Rep. (2009)	12.72	31.47
15	MY	Malaysia (2008)	12.59	29.75
16	QA	Qatar (2009)	12.01	22.05
17	CN	China (2009)	11.56	16.07
18	IN	India (2007)	10.35	0.00
19	DE	Germany	n/a	n/a
20	SG	Singapore	n/a	n/a

Tables for Innovation Index 2012

2.1.1 Expenditure on education

Current expenditure on education (% of GNI) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	DK	Denmark	7.44	100.00
2	NO	Norway	6.16	77.35
3	SE	Sweden	6.08	75.93
4	FI	Finland	5.54	66.37
5	IE	Ireland	5.23	60.88
6	GB	United Kingdom	5.09	58.41
7	CH	Switzerland	4.79	53.10
8	US	United States of America	4.79	53.10
9	NL	Netherlands	4.74	52.21
10	CA	Canada	4.67	50.97
11	EE	Estonia	4.42	46.55
12	DE	Germany	4.33	44.96
13	MY	Malaysia	4.15	41.77
14	IR	Iran, Islamic Rep. (2010)	4.11	41.06
15	KR	Korea, Rep.	3.94	38.05
16	IN	India	3.07	22.65
17	HK	Hong Kong (China) (2010)	3.06	22.48
18	SG	Singapore (2010)	3.02	21.77
19	CN	China	1.81	0.35
20	QA	Qatar (2008)	1.79	0.00

2.1.2 Public expenditure on education per pupil

Public expenditure on education per pupil, all levels (% of GDP per capita) | 2008

Rank	Ccode	Country	Value	Score (0-100)
1	DK	Denmark	30.86	100.00
2	SE	Sweden	28.98	89.85
3	CH	Switzerland	27.42	81.43
4	FI	Finland	26.03	73.92
5	NO	Norway	25.12	69.01
6	GB	United Kingdom	24.82	67.39
7	EE	Estonia	24.75	67.01
8	NL	Netherlands	23.99	62.90
9	CA	Canada (2002)	23.46	60.04
10	US	United States of America	21.99	52.11
11	MY	Malaysia (2009)	21.56	49.78
12	KR	Korea, Rep.	20.51	44.11
13	HK	Hong Kong (China) (2010)	19.50	38.66
14	IR	Iran, Islamic Rep. (2009)	19.48	38.55
15	QA	Qatar	15.90	19.22
16	IN	India	12.34	0.00
17	CN	China	n/a	n/a
18	DE	Germany	n/a	n/a
19	IE	Ireland	n/a	n/a
20	SG	Singapore	n/a	n/a

2.1.3 School life expectancy

School life expectancy, primary to tertiary education (years) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	IE	Ireland	18.31	100.00
2	NO	Norway	17.28	86.23
3	KR	Korea, Rep.	16.99	82.35
4	NL	Netherlands	16.86	80.61
5	FI	Finland	16.83	80.21
6	US	United States of America (201	16.76	79.28
7	DK	Denmark	16.75	79.14
8	GB	United Kingdom	16.38	74.20
9	EE	Estonia	15.82	66.71
10	SE	Sweden	15.77	66.04
11	HK	Hong Kong (China) (2010)	15.49	62.30
12	CH	Switzerland	15.45	61.76
13	CA	Canada (2002)	15.13	57.49
14	IR	Iran, Islamic Rep.	13.09	30.21
15	MY	Malaysia (2008)	12.59	23.53
16	QA	Qatar (2010)	12.24	18.85
17	CN	China (2010)	11.72	11.90
18	IN	India (2008)	10.83	0.00
19	DE	Germany	n/a	n/a
20	SG	Singapore	n/a	n/a

Source: Compiled the data value from the Dutta, S. & INSEAD. (2011), and Dutta, S. & INSEAD. (2012).

Tables for Innovation Index 2011

2.1.4 Assessment in reading, mathematics, and science

PISA average scales in reading, mathematics, and science | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	CN	China	576.83	100.00
2	HK	Hong Kong (China)	545.57	87.02
3	FI	Finland	543.50	86.16
4	SG	Singapore	543.20	86.03
5	KR	Korea, Rep.	541.17	85.19
6	CA	Canada	526.57	79.13
7	NL	Netherlands	518.80	75.90
8	CH	Switzerland	517.03	75.17
9	EE	Estonia	513.63	73.76
10	DE	Germany	510.17	72.32
11	NO	Norway	500.37	68.25
12	GB	United Kingdom	500.10	68.14
13	DK	Denmark	499.17	67.75
14	IE	Ireland	496.90	66.81
15	US	United States of America	496.40	66.60
16	SE	Sweden	495.57	66.26
17	MY	Malaysia (2010)	413.43	32.15
18	QA	Qatar	373.07	15.39
19	IN	India (2010)	336.02	0.00
20	IR	Iran, Islamic Rep.	n/a	n/a

2.1.5 Pupil-teacher ratio

Pupil-teacher ratio, secondary| 2008

Rank	Ccode	Country	Value	Score (0-100)
1	NO	Norway (2004)	8.79	100.00
2	EE	Estonia	9.41	97.41
3	QA	Qatar (2009)	9.62	96.53
4	SE	Sweden	9.68	96.28
5	FI	Finland	10.03	94.81
6	DK	Denmark (2001)	10.05	94.73
7	IE	Ireland (2006)	10.54	92.68
8	NL	Netherlands	13.18	81.64
9	DE	Germany	13.24	81.39
10	MY	Malaysia	14.22	77.29
11	GB	United Kingdom	14.27	77.08
12	US	United States of America	14.38	76.62
13	SG	Singapore (2009)	14.91	74.40
14	CN	China (2009)	15.72	71.02
15	KR	Korea, Rep.	18.05	61.27
16	CA	Canada (2000)	18.40	59.81
17	IN	India (2004)	32.70	0.00
18	HK	Hong Kong (China) (2005)	n/a	n/a
19	IR	Iran, Islamic Rep. (2008)	n/a	n/a
20	CH	Switzerland	n/a	n/a

2.2.1 Tertiary school enrolment

Tertiary school enrolment (% gross)| 2008

Rank	Ccode	Country	Value	Score (0-100)
1	KR	Korea, Rep.	98.09	100.00
2	FI	Finland	94.44	95.85
3	US	United States of America (201	94.81	96.27
4	DK	Denmark	78.05	77.19
5	NO	Norway	73.19	71.66
6	SE	Sweden	71.05	69.22
7	EE	Estonia	63.71	60.87
8	CA	Canada (2004)	62.27	59.23
9	NL	Netherlands	60.60	57.32
10	IE	Ireland	58.31	54.72
11	GB	United Kingdom	57.42	53.71
12	HK	Hong Kong (China) (2009)	56.63	52.81
13	CH	Switzerland	49.40	44.58
14	IR	Iran, Islamic Rep. (2009)	36.49	29.88
15	MY	Malaysia	36.46	29.85
16	CN	China (2009)	24.53	16.27
17	IN	India (2007)	13.48	3.69
18	QA	Qatar (2009)	10.24	0.00
19	DE	Germany	n/a	n/a
20	SG	Singapore	n/a	n/a

Tables for Innovation Index 2012

2.1.4 Assessment in reading, mathematics, and science

PISA average scales in reading, mathematics, and science | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	CN	China	576.83	100.00
2	HK	Hong Kong (China)	545.57	87.02
3	FI	Finland	543.50	86.16
4	SG	Singapore	543.20	86.03
5	KR	Korea, Rep.	541.17	85.19
6	CA	Canada	526.57	79.13
7	NL	Netherlands	518.80	75.90
8	CH	Switzerland	517.03	75.17
9	EE	Estonia	513.63	73.76
10	DE	Germany	510.17	72.32
11	NO	Norway	500.37	68.25
12	GB	United Kingdom	500.10	68.14
13	DK	Denmark	499.17	67.75
14	IE	Ireland	496.90	66.81
15	US	United States of America	496.40	66.60
16	SE	Sweden	495.57	66.26
17	MY	Malaysia (2010)	413.43	32.15
18	QA	Qatar	373.07	15.39
19	IN	India (2010)	336.02	0.00
20	IR	Iran, Islamic Rep.	n/a	n/a

2.1.5 Pupil-teacher ratio, secondary

Pupil-teacher ratio, secondary | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	CA	Canada (2008)	7.08	100.00
2	NO	Norway (2008)	8.79	93.33
3	EE	Estonia	9.44	90.79
4	SE	Sweden	9.62	90.09
5	FI	Finland	9.89	89.03
6	QA	Qatar (2010)	9.93	88.88
7	DK	Denmark (2001)	10.05	88.41
8	IE	Ireland (2006)	10.54	86.49
9	DE	Germany	13.24	75.96
10	NL	Netherlands	13.40	75.33
11	MY	Malaysia	13.65	74.36
12	US	United States of America (201	13.76	73.93
13	GB	United Kingdom (2008)	14.27	71.94
14	SG	Singapore	14.91	69.44
15	CN	China (2010)	15.46	67.29
16	HK	Hong Kong (China) (2005)	17.76	58.31
17	KR	Korea, Rep.	17.98	57.46
18	IR	Iran, Islamic Rep. (2008)	21.69	42.97
19	IN	India (2004)	32.70	0.00
20	CH	Switzerland	n/a	n/a

2.2.1 Tertiary enrolment

School enrolment, tertiary (% gross) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	KR	Korea, Rep.	103.87	100.00
2	US	United States of America (201	94.81	90.35
3	FI	Finland	91.59	86.92
4	DK	Denmark	74.40	68.62
5	NO	Norway	73.79	67.97
6	SE	Sweden	70.78	64.76
7	EE	Estonia	62.70	56.16
8	NL	Netherlands	62.70	56.16
9	CA	Canada (2004)	62.27	55.70
10	IE	Ireland	60.96	54.30
11	HK	Hong Kong (China) (2010)	59.72	52.98
12	GB	United Kingdom	58.53	51.71
13	CH	Switzerland	51.45	44.17
14	IR	Iran, Islamic Rep. (2010)	42.77	34.93
15	MY	Malaysia	40.24	32.24
16	CN	China (2010)	25.95	17.02
17	IN	India	16.23	6.67
18	QA	Qatar (2010)	9.97	0.00
19	DE	Germany	n/a	n/a
20	SG	Singapore	n/a	n/a

Source: Compiled the data value from the Dutta, S. & INSEAD. (2011), and Dutta, S. & INSEAD. (2012).

Tables for Innovation Index 2011

2.2.2 Graduates in science and engineering

Tertiary graduates in engineering, manufacturing, and construction (% of total tertiary graduates) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	IR	Iran, Islamic Rep. (2010)	44.42	100.00
2	MY	Malaysia	37.72	77.98
3	HK	Hong Kong (China) (2006)	34.67	67.95
4	KR	Korea, Rep.	31.46	57.40
5	FI	Finland	28.17	46.58
6	DE	Germany	24.62	34.91
7	SE	Sweden	24.18	33.46
8	QA	Qatar (2010)	24.00	32.87
9	GB	United Kingdom	21.71	25.35
10	IE	Ireland	21.62	25.05
11	CH	Switzerland	21.56	24.85
12	CA	Canada (2002)	21.06	23.21
13	DK	Denmark	19.62	18.47
14	EE	Estonia	19.38	17.69
15	US	United States of America (201	15.47	4.83
16	NO	Norway	15.23	4.04
17	NL	Netherlands	14.00	0.00
18	CN	China	n/a	n/a
19	IN	India	n/a	n/a
20	SG	Singapore	n/a	n/a

2.2.3 Tertiary inbound mobility

Tertiary inbound mobility ratio (%) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	QA	Qatar (2010)	38.91	100.00
2	SG	Singapore (2010)	22.78	58.55
3	GB	United Kingdom	15.28	39.27
4	CH	Switzerland	14.92	38.34
5	NO	Norway	7.98	20.51
6	IE	Ireland	7.08	18.20
7	SE	Sweden	6.40	16.45
8	MY	Malaysia	5.78	14.85
9	DK	Denmark	5.36	13.78
10	CA	Canada (2004)	4.90	12.59
11	FI	Finland	4.25	10.92
12	HK	Hong Kong (China) (2010)	3.90	10.02
13	NL	Netherlands	3.83	9.84
14	US	United States of America (201	3.35	8.61
15	EE	Estonia	1.59	4.09
16	KR	Korea, Rep.	1.55	3.98
17	CN	China (2010)	0.00	0.00
18	IN	India (2006)	0.00	0.00
19	IR	Iran, Islamic Rep. (2010)	0.00	0.00
20	DE	Germany	n/a	n/a

2.2.4 Gross tertiary outbound enrolment

Gross tertiary outbound enrolment ratio (%) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	HK	Hong Kong (China) (2010)	7.38	100.00
2	IE	Ireland	6.10	82.25
3	NO	Norway	4.14	55.06
4	EE	Estonia	3.46	45.63
5	SE	Sweden	2.45	31.62
6	CH	Switzerland	2.41	31.07
7	MY	Malaysia (2010)	2.18	27.88
8	FI	Finland	2.16	27.60
9	CA	Canada	2.04	25.94
10	QA	Qatar (2010)	1.92	24.27
11	DE	Germany	1.83	23.02
12	DK	Denmark	1.63	20.25
13	KR	Korea, Rep. (2010)	1.56	19.28
14	NL	Netherlands	1.13	13.31
15	GB	United Kingdom	0.55	5.27
16	CN	China (2010)	0.43	3.61
17	IR	Iran, Islamic Rep. (2010)	0.35	2.50
18	US	United States of America	0.25	1.11
19	IN	India (2010)	0.17	0.00
20	SG	Singapore	n/a	n/a

Tables for Innovation Index 2012

2.2.2 Graduates in science and engineering

Tertiary graduates in engineering, manufacturing, and construction (% of total tertiary graduates) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	IR	Iran, Islamic Rep. (2010)	44.42	100.00
2	MY	Malaysia	37.72	77.98
3	HK	Hong Kong (China) (2006)	34.67	67.95
4	KR	Korea, Rep.	31.46	57.40
5	FI	Finland	28.17	46.58
6	DE	Germany	24.62	34.91
7	SE	Sweden	24.18	33.46
8	QA	Qatar (2010)	24.00	32.87
9	GB	United Kingdom	21.71	25.35
10	IE	Ireland	21.62	25.05
11	CH	Switzerland	21.56	24.85
12	CA	Canada (2002)	21.06	23.21
13	DK	Denmark	19.62	18.47
14	EE	Estonia	19.38	17.69
15	US	United States of America (201	15.47	4.83
16	NO	Norway	15.23	4.04
17	NL	Netherlands	14.00	0.00
18	CN	China	n/a	n/a
19	IN	India	n/a	n/a
20	SG	Singapore	n/a	n/a

2.2.3 Tertiary inbound mobility

Tertiary inbound mobility ratio (%) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	QA	Qatar (2010)	38.91	100.00
2	SG	Singapore (2010)	22.78	58.55
3	GB	United Kingdom	15.28	39.27
4	CH	Switzerland	14.92	38.34
5	NO	Norway	7.98	20.51
6	IE	Ireland	7.08	18.20
7	SE	Sweden	6.40	16.45
8	MY	Malaysia	5.78	14.85
9	DK	Denmark	5.36	13.78
10	CA	Canada (2004)	4.90	12.59
11	FI	Finland	4.25	10.92
12	HK	Hong Kong (China) (2010)	3.90	10.02
13	NL	Netherlands	3.83	9.84
14	US	United States of America (201	3.35	8.61
15	EE	Estonia	1.59	4.09
16	KR	Korea, Rep.	1.55	3.98
17	CN	China (2010)	0.00	0.00
18	IN	India (2006)	0.00	0.00
19	IR	Iran, Islamic Rep. (2010)	0.00	0.00
20	DE	Germany	n/a	n/a

2.2.4 Gross tertiary outbound enrolment

Gross tertiary outbound enrolment ratio (%) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	HK	Hong Kong (China) (2010)	7.38	100.00
2	IE	Ireland	6.10	82.25
3	NO	Norway	4.14	55.06
4	EE	Estonia	3.46	45.63
5	SE	Sweden	2.45	31.62
6	CH	Switzerland	2.41	31.07
7	MY	Malaysia (2010)	2.18	27.88
8	FI	Finland	2.16	27.60
9	CA	Canada	2.04	25.94
10	QA	Qatar (2010)	1.92	24.27
11	DE	Germany	1.83	23.02
12	DK	Denmark	1.63	20.25
13	KR	Korea, Rep. (2010)	1.56	19.28
14	NL	Netherlands	1.13	13.31
15	GB	United Kingdom	0.55	5.27
16	CN	China (2010)	0.43	3.61
17	IR	Iran, Islamic Rep. (2010)	0.35	2.50
18	US	United States of America	0.25	1.11
19	IN	India (2010)	0.17	0.00
20	SG	Singapore	n/a	n/a

Source: Compiled the data value from the Dutta, S. & INSEAD. (2011), and Dutta, S. & INSEAD. (2012).

Tables for Innovation Index 2011

2.3.1 Researchers

Researchers, headcounts (per million people)| 2007

Rank	Ccode	Country	Value	Score (0-100)
1	FI	Finland	10,111.15	100.00
2	NO	Norway	8,845.12	87.31
3	SE	Sweden	7,982.41	78.66
4	DK	Denmark	7,895.37	77.78
5	SG	Singapore	7,059.12	69.40
6	GB	United Kingdom	6,218.64	60.97
7	KR	Korea, Rep.	6,027.64	59.06
8	CH	Switzerland (2004)	5,845.87	57.24
9	DE	Germany	5,316.57	51.93
10	EE	Estonia (2008)	5,173.74	50.50
11	US	United States of America (200	4,663.28	45.38
12	IE	Ireland	4,450.14	43.24
13	CA	Canada (2006)	4,260.42	41.34
14	HK	Hong Kong (China) (2006)	2,983.71	28.54
15	NL	Netherlands (2003)	2,818.31	26.88
16	CN	China (2007)	1,070.94	9.36
17	IR	Iran, Islamic Rep. (2006)	947.06	8.12
18	MY	Malaysia (2006)	728.92	5.94
19	IN	India (2005)	136.94	0.00
20	QA	Qatar	n/a	n/a

2.3.2 Gross expenditure on R&D (GERD)

Gross expenditure on R&D (% of GDP)| 2007

Rank	Ccode	Country	Value	Score (0-100)
1	SE	Sweden (2008)	3.75	100.00
2	FI	Finland (2008)	3.46	90.71
3	KR	Korea, Rep.	3.21	82.69
4	CH	Switzerland (2004)	2.90	72.76
5	US	United States of America (200	2.79	69.23
6	DK	Denmark (2008)	2.72	66.99
7	DE	Germany	2.54	61.22
8	SG	Singapore	2.52	60.58
9	GB	United Kingdom (2008)	1.88	40.06
10	CA	Canada (2008)	1.84	38.78
11	NL	Netherlands (2008)	1.63	32.05
12	NO	Norway (2008)	1.62	31.73
13	CN	China	1.44	25.96
14	IE	Ireland (2008)	1.42	25.32
15	EE	Estonia (2008)	1.29	21.15
16	HK	Hong Kong (China) (2006)	0.81	5.77
17	IN	India	0.80	5.45
18	IR	Iran, Islamic Rep. (2006)	0.67	1.28
19	MY	Malaysia (2006)	0.63	0.00
20	QA	Qatar	n/a	n/a

2.3.3 Quality of research institutions

Average answer to the question: How would you assess the quality of scientific research institutions in your country? 1=very poor; 7=the best in their field internationally| 2010

Rank	Ccode	Country	Value	Score (0-100)
1	CH	Switzerland	6.20	100.00
2	GB	United Kingdom	6.05	93.33
3	US	United States of America	5.95	88.89
4	SE	Sweden	5.92	87.56
5	DE	Germany	5.87	85.33
6	CA	Canada	5.71	78.22
7	NL	Netherlands	5.63	74.67
8	SG	Singapore	5.54	70.67
9	DK	Denmark	5.52	69.78
10	FI	Finland	5.37	63.11
11	IE	Ireland	5.29	59.56
12	QA	Qatar	5.08	50.22
13	NO	Norway	5.00	46.67
14	KR	Korea, Rep.	4.82	38.67
15	EE	Estonia	4.75	35.56
16	IN	India	4.70	33.33
17	MY	Malaysia	4.67	32.00
18	HK	Hong Kong (China)	4.46	22.67
19	CN	China	4.32	16.44
20	IR	Iran, Islamic Rep.	3.95	0.00

Tables for Innovation Index 2012

2.3.1 Researchers

Researchers, headcounts (per million population) | 2008

Rank	Ccode	Country	Value	Score (0-100)
1	FI	Finland	10,382.21	100.00
2	NO	Norway	9,237.37	88.83
3	DK	Denmark	8,812.03	84.67
4	SG	Singapore	6,991.51	66.90
5	KR	Korea, Rep.	6,285.88	60.02
6	CH	Switzerland	6,057.41	57.79
7	EE	Estonia	5,383.92	51.21
8	DE	Germany (2007)	5,305.37	50.45
9	SE	Sweden	5,238.68	49.80
10	IE	Ireland	4,842.79	45.93
11	US	United States of America (200	4,663.28	44.18
12	GB	United Kingdom	4,269.18	40.33
13	CA	Canada (2006)	4,260.42	40.25
14	HK	Hong Kong (China) (2009)	3,293.37	30.81
15	NL	Netherlands	3,088.89	28.81
16	IR	Iran, Islamic Rep.	1,491.37	13.22
17	CN	China (2007)	1,070.94	9.12
18	MY	Malaysia (2006)	715.44	5.65
19	IN	India (2005)	136.94	0.00
20	QA	Qatar	n/a	n/a

2.3.2 Gross expenditure on R&D (GERD)

GERD: Gross expenditure on R&D (% of GDP) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	FI	Finland (2010)	3.84	100.00
2	SE	Sweden	3.62	93.15
3	KR	Korea, Rep. (2008)	3.36	85.05
4	DK	Denmark	3.02	74.45
5	CH	Switzerland (2008)	3.00	73.83
6	DE	Germany	2.82	68.22
7	US	United States of America (200	2.79	67.29
8	SG	Singapore (2008)	2.66	63.24
9	CA	Canada	1.95	41.12
10	NL	Netherlands	1.84	37.69
11	GB	United Kingdom (2010)	1.82	37.07
12	NO	Norway	1.80	36.45
13	IE	Ireland	1.77	35.51
14	CN	China (2008)	1.47	26.17
15	EE	Estonia	1.44	25.23
16	HK	Hong Kong (China)	0.79	4.98
17	IR	Iran, Islamic Rep.	0.79	4.98
18	IN	India (2007)	0.76	4.05
19	MY	Malaysia (2006)	0.63	0.00
20	QA	Qatar	n/a	n/a

2.3.3 Quality of science research institutions

Average answer to the question: How would you assess the quality of scientific research institutions in your country? 1= very poor; 7= the best in their field internationally | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	CH	Switzerland	6.27	100.00
2	GB	United Kingdom	6.12	93.24
3	SE	Sweden	5.98	86.94
4	QA	Qatar	5.83	80.18
5	US	United States of America	5.83	80.18
6	NL	Netherlands	5.68	73.42
7	CA	Canada	5.61	70.27
8	DE	Germany	5.59	69.37
9	SG	Singapore	5.53	66.67
10	DK	Denmark	5.36	59.01
11	IE	Ireland	5.29	55.86
12	FI	Finland	5.22	52.70
13	MY	Malaysia	4.86	36.49
14	KR	Korea, Rep.	4.82	34.68
15	EE	Estonia	4.80	33.78
16	NO	Norway	4.73	30.63
17	HK	Hong Kong (China)	4.62	25.68
18	IN	India	4.51	20.72
19	CN	China	4.31	11.71
20	IR	Iran, Islamic Rep.	4.05	0.00

Source: Compiled the data value from the Dutta, S. & INSEAD. (2011), and Dutta, S. & INSEAD. (2012).

Tables for Innovation Index 2011

3.1.1 ICT access

Information and Communication Technologies (ICT) access index (0-100)| 2008

Rank	Ccode	Country	Value	Score (0-100)
1	HK	Hong Kong (China)	8.82	100.00
2	SE	Sweden	8.75	98.99
3	DE	Germany	8.54	95.97
4	CH	Switzerland	8.50	95.39
5	NL	Netherlands	8.42	94.24
6	DK	Denmark	8.34	93.08
7	GB	United Kingdom	8.23	91.50
8	SG	Singapore	8.02	88.47
9	NO	Norway	7.91	86.89
10	IE	Ireland	7.66	83.29
11	KR	Korea, Rep.	7.60	82.42
12	EE	Estonia	7.59	82.28
13	CA	Canada	7.51	81.12
14	FI	Finland	7.40	79.54
15	US	United States of America	7.11	75.36
16	QA	Qatar	6.58	67.72
17	MY	Malaysia	4.38	36.02
18	CN	China	3.75	26.95
19	IR	Iran, Islamic Rep.	3.36	21.33
20	IN	India	1.88	0.00

3.1.2 ICT use

Information and Communication Technologies (ICT) use index (0-10)| 2008

Rank	Ccode	Country	Value	Score (0-100)
1	KR	Korea, Rep.	6.69	100.00
2	SE	Sweden	6.39	95.40
3	SG	Singapore	5.81	86.50
4	DK	Denmark	5.76	85.74
5	NL	Netherlands	5.66	84.20
6	CH	Switzerland	5.40	80.21
7	NO	Norway	5.29	78.53
8	FI	Finland	5.25	77.91
9	GB	United Kingdom	5.23	77.61
10	HK	Hong Kong (China)	5.22	77.45
11	DE	Germany	4.76	70.40
12	US	United States of America	4.64	68.56
13	CA	Canada	4.31	63.50
14	IE	Ireland	4.28	63.04
15	EE	Estonia	4.02	59.05
16	MY	Malaysia	2.43	34.66
17	QA	Qatar	1.83	25.46
18	CN	China	1.09	14.11
19	IR	Iran, Islamic Rep.	1.07	13.80
20	IN	India	0.17	0.00

3.1.3 Government's online service

Government's online service index (0-1)| 2010

Rank	Ccode	Country	Value	Score (0-100)
1	KR	Korea, Rep.	1.00	100.00
2	US	United States of America	0.94	91.78
3	CA	Canada	0.88	83.56
4	GB	United Kingdom	0.77	68.49
5	NO	Norway	0.74	64.38
6	SG	Singapore	0.69	57.53
7	NL	Netherlands	0.68	56.16
8	DK	Denmark	0.67	54.79
9	MY	Malaysia	0.63	49.32
10	DE	Germany	0.55	38.36
11	SE	Sweden	0.53	35.62
12	EE	Estonia	0.50	31.51
13	IE	Ireland	0.50	31.51
14	FI	Finland	0.48	28.77
15	CH	Switzerland	0.44	23.29
16	IN	India	0.37	13.70
17	CN	China	0.37	13.70
18	QA	Qatar	0.28	1.37
19	IR	Iran, Islamic Rep.	0.27	0.00
20	HK	Hong Kong (China)	n/a	n/a

Tables for Innovation Index 2012

3.1.1 ICT access

Information and Communication Technologies (ICT) access index (0-100)| 2010

Rank	Ccode	Country	Value	Score (0-100)
1	HK	Hong Kong (China)	9.06	100.00
2	CH	Switzerland	8.70	94.62
3	SE	Sweden	8.57	92.68
4	DE	Germany	8.41	90.28
5	GB	United Kingdom	8.36	89.54
6	DK	Denmark	8.33	89.09
7	NL	Netherlands	8.29	88.49
8	KR	Korea, Rep.	8.21	87.29
9	SG	Singapore	8.14	86.25
10	NO	Norway	7.88	82.36
11	FI	Finland	7.61	78.33
12	IE	Ireland	7.45	75.93
13	CA	Canada	7.43	75.64
14	US	United States of America	7.24	72.80
15	QA	Qatar	7.09	70.55
16	EE	Estonia	6.91	67.86
17	MY	Malaysia	4.70	34.83
18	IR	Iran, Islamic Rep.	4.60	33.33
19	CN	China	3.86	22.27
20	IN	India	2.37	0.00

3.1.2 ICT use

Information and Communication Technologies (ICT) use index (0-10)| 2010

Rank	Ccode	Country	Value	Score (0-100)
1	KR	Korea, Rep.	7.85	100.00
2	SE	Sweden	7.55	96.01
3	FI	Finland	7.11	90.16
4	DK	Denmark	6.85	86.70
5	NO	Norway	6.60	83.38
6	HK	Hong Kong (China)	6.46	81.52
7	GB	United Kingdom	6.44	81.25
8	NL	Netherlands	6.38	80.45
9	CH	Switzerland	6.37	80.32
10	SG	Singapore	6.03	75.80
11	US	United States of America	5.89	73.94
12	DE	Germany	5.69	71.28
13	IE	Ireland	5.17	64.36
14	CA	Canada	4.87	60.37
15	EE	Estonia	4.09	50.00
16	QA	Qatar	3.75	45.48
17	MY	Malaysia	3.15	37.50
18	CN	China	1.73	18.62
19	IR	Iran, Islamic Rep.	0.47	1.86
20	IN	India	0.33	0.00

3.1.3 Government's online services

Government's online service index (0-1)| 2011

Rank	Ccode	Country	Value	Score (0-100)
1	KR	Korea, Rep.	1.00	100.00
2	SG	Singapore	1.00	100.00
3	US	United States of America	1.00	100.00
4	GB	United Kingdom	0.97	94.12
5	NL	Netherlands	0.96	92.16
6	CA	Canada	0.89	78.43
7	FI	Finland	0.88	76.47
8	DK	Denmark	0.86	72.55
9	NO	Norway	0.86	72.55
10	SE	Sweden	0.84	68.63
11	EE	Estonia	0.82	64.71
12	MY	Malaysia	0.79	58.82
13	DE	Germany	0.75	50.98
14	QA	Qatar	0.74	49.02
15	CH	Switzerland	0.67	35.29
16	IN	India	0.54	9.80
17	IE	Ireland	0.54	9.80
18	CN	China	0.53	7.84
19	IR	Iran, Islamic Rep.	0.49	0.00
20	HK	Hong Kong (China)	n/a	n/a

Source: Compiled the data value from the Dutta, S. & INSEAD. (2011), and Dutta, S. & INSEAD. (2012).

Tables for Innovation Index 2011

3.1.4 E-participation

E-participation index (0-1)| 2010

Rank	Ccode	Country	Value	Score (0-100)
1	KR	Korea, Rep.	1.00	100.00
2	GB	United Kingdom	0.77	75.27
3	US	United States of America	0.76	74.19
4	CA	Canada	0.73	70.97
5	SG	Singapore	0.69	66.67
6	EE	Estonia	0.69	66.67
7	MY	Malaysia	0.66	63.44
8	DK	Denmark	0.64	61.29
9	DE	Germany	0.61	58.06
10	NL	Netherlands	0.60	56.99
11	NO	Norway	0.50	46.24
12	SE	Sweden	0.49	45.16
13	IE	Ireland	0.44	39.78
14	FI	Finland	0.41	36.56
15	CN	China	0.37	32.26
16	CH	Switzerland	0.20	13.98
17	IN	India	0.20	13.98
18	QA	Qatar	0.13	6.45
19	IR	Iran, Islamic Rep.	0.07	0.00
20	HK	Hong Kong (China)	n/a	n/a

3.2.1 Electricity output

Electricity output (kWh per capita)| 2008

Rank	Ccode	Country	Value	Score (0-100)
1	NO	Norway (2009)	27,549.69	100.00
2	CA	Canada (2009)	18,566.03	66.51
3	QA	Qatar	16,887.50	60.25
4	SE	Sweden (2009)	14,374.49	50.88
5	US	United States of America (200	13,531.10	47.73
6	FI	Finland (2009)	13,427.20	47.35
7	KR	Korea, Rep. (2009)	9,105.69	31.23
8	CH	Switzerland (2009)	8,699.22	29.72
9	SG	Singapore	8,619.21	29.42
10	EE	Estonia	7,896.27	26.73
11	DE	Germany (2009)	7,199.79	24.13
12	NL	Netherlands (2009)	6,777.23	22.55
13	DK	Denmark (2009)	6,583.27	21.83
14	IE	Ireland (2009)	6,054.32	19.86
15	GB	United Kingdom (2009)	5,958.09	19.50
16	HK	Hong Kong (China)	5,443.27	17.58
17	MY	Malaysia	3,608.45	10.74
18	IR	Iran, Islamic Rep.	2,981.25	8.40
19	CN	China	2,607.73	7.01
20	IN	India	728.20	0.00

3.2.2 Electricity consumption

Electricity consumption (kWh per capita)| 2008

Rank	Ccode	Country	Value	Score (0-100)
1	NO	Norway (2009)	23,726.00	100.00
2	CA	Canada (2009)	16,003.00	66.65
3	QA	Qatar	15,680.00	65.26
4	FI	Finland (2009)	15,063.00	62.59
5	SE	Sweden (2009)	13,707.00	56.74
6	US	United States of America (200	12,917.00	53.33
7	KR	Korea, Rep. (2009)	8,833.00	35.70
8	SG	Singapore	8,186.00	32.90
9	CH	Switzerland (2009)	8,084.00	32.46
10	NL	Netherlands (2009)	6,793.00	26.89
11	DE	Germany (2009)	6,757.00	26.73
12	EE	Estonia	6,346.00	24.96
13	DK	Denmark (2009)	6,212.00	24.38
14	HK	Hong Kong (China)	5,866.00	22.88
15	IE	Ireland (2009)	5,799.00	22.59
16	GB	United Kingdom (2009)	5,607.00	21.77
17	MY	Malaysia	3,493.00	12.64
18	CN	China	2,453.00	8.15
19	IR	Iran, Islamic Rep.	2,423.00	8.02
20	IN	India	566.00	0.00

Tables for Innovation Index 2012

3.1.4 E-participation

E-participation index (0-1)| 2011

Rank	Ccode	Country	Value	Score (0-100)
1	KR	Korea, Rep.	1.00	100.00
2	NL	Netherlands	1.00	100.00
3	SG	Singapore	0.95	94.25
4	GB	United Kingdom	0.92	90.80
5	US	United States of America	0.92	90.80
6	EE	Estonia	0.76	72.41
7	DE	Germany	0.76	72.41
8	FI	Finland	0.74	70.11
9	CA	Canada	0.68	63.22
10	NO	Norway	0.68	63.22
11	SE	Sweden	0.68	63.22
12	QA	Qatar	0.63	57.47
13	DK	Denmark	0.55	48.28
14	MY	Malaysia	0.50	42.53
15	CH	Switzerland	0.34	24.14
16	CN	China	0.21	9.20
17	IN	India	0.18	5.75
18	IR	Iran, Islamic Rep.	0.18	5.75
19	IE	Ireland	0.13	0.00
20	HK	Hong Kong (China)	n/a	n/a

3.2.1 Electricity output

Electricity output (kWh per capita) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	NO	Norway (2010)	25,275.88	100.00
2	CA	Canada (2010)	17,557.36	68.51
3	SE	Sweden (2010)	16,380.94	63.71
4	QA	Qatar	15,128.74	58.60
5	FI	Finland (2010)	14,949.58	57.87
6	US	United States of America (201	13,990.68	53.96
7	KR	Korea, Rep. (2010)	9,780.67	36.78
8	EE	Estonia (2010)	9,696.34	36.44
9	CH	Switzerland (2010)	8,544.87	31.74
10	SG	Singapore	8,233.41	30.47
11	DE	Germany (2010)	7,525.08	27.58
12	DK	Denmark (2010)	6,968.02	25.30
13	NL	Netherlands (2010)	6,905.45	25.05
14	IE	Ireland (2010)	6,320.29	22.66
15	GB	United Kingdom (2010)	6,076.56	21.67
16	HK	Hong Kong (China)	5,482.24	19.24
17	MY	Malaysia	3,767.02	12.24
18	CN	China	2,769.02	8.17
19	IR	Iran, Islamic Rep.	2,758.78	8.13
20	IN	India	766.09	0.00

3.2.2 Electricity consumption

Electricity consumption (kWh per capita) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	NO	Norway (2010)	25,181.10	100.00
2	FI	Finland (2010)	16,439.20	64.44
3	QA	Qatar	16,352.70	64.09
4	SE	Sweden (2010)	15,476.50	60.53
5	CA	Canada (2010)	15,449.30	60.41
6	US	United States of America (201	13,268.10	51.54
7	KR	Korea, Rep. (2010)	9,509.60	36.25
8	CH	Switzerland (2010)	8,327.80	31.45
9	SG	Singapore	7,948.30	29.90
10	DE	Germany (2010)	7,107.80	26.48
11	NL	Netherlands (2010)	6,794.70	25.21
12	DK	Denmark (2010)	6,370.50	23.49
13	EE	Estonia	5,951.50	21.78
14	HK	Hong Kong (China)	5,924.30	21.67
15	IE	Ireland (2010)	5,898.80	21.57
16	GB	United Kingdom (2010)	5,741.80	20.93
17	MY	Malaysia	3,676.90	12.53
18	CN	China	2,631.20	8.28
19	IR	Iran, Islamic Rep.	2,244.70	6.70
20	IN	India	596.80	0.00

Source: Compiled the data value from the Dutta, S. & INSEAD. (2011), and Dutta, S. & INSEAD. (2012).

Tables for Innovation Index 2011

3.2.3 Trade and transport-related infrastructure

Logistics Performance Index: Quality of trade and transport-related infrastructure (1= low to 5= high) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	DE	Germany	4.34	100.00
2	NL	Netherlands	4.25	95.45
3	SG	Singapore	4.22	93.94
4	NO	Norway	4.22	93.94
5	CH	Switzerland	4.17	91.41
6	US	United States of America	4.15	90.40
7	FI	Finland	4.08	86.87
8	CA	Canada	4.03	84.34
9	SE	Sweden	4.03	84.34
10	HK	Hong Kong (China)	4.00	82.83
11	DK	Denmark	3.99	82.32
12	GB	United Kingdom	3.95	80.30
13	IE	Ireland	3.76	70.71
14	KR	Korea, Rep.	3.62	63.64
15	CN	China	3.54	59.60
16	MY	Malaysia	3.50	57.58
17	IN	India	2.91	27.78
18	EE	Estonia	2.75	19.70
19	QA	Qatar	2.75	19.70
20	IR	Iran, Islamic Rep.	2.36	0.00

3.2.4 Gross capital formation

Gross capital formation (% of GDP) | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	CN	China	47.78	100.00
2	QA	Qatar (2009)	38.93	76.07
3	IN	India	34.77	64.83
4	IR	Iran, Islamic Rep. (2007)	33.16	60.48
5	KR	Korea, Rep.	29.15	49.64
6	SG	Singapore	23.83	35.25
7	HK	Hong Kong (China)	23.71	34.93
8	CA	Canada	22.20	30.85
9	MY	Malaysia	21.42	28.74
10	NO	Norway	21.32	28.47
11	EE	Estonia	19.97	24.82
12	CH	Switzerland	19.24	22.84
13	NL	Netherlands	18.68	21.33
14	FI	Finland	18.59	21.09
15	SE	Sweden	18.45	20.71
16	DE	Germany	17.34	17.71
17	DK	Denmark	16.40	15.17
18	US	United States of America	15.05	11.52
19	GB	United Kingdom	15.03	11.46
20	IE	Ireland	10.79	0.00

3.3.1 GDP per unit of energy use

GDP per unit of energy use (2000 PPP$ per kg of oil equivalent) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	HK	Hong Kong (China)	16.03	100.00
2	CH	Switzerland (2010)	10.18	59.66
3	IE	Ireland (2010)	9.35	53.93
4	GB	United Kingdom (2010)	8.64	49.03
5	DK	Denmark (2010)	8.36	47.10
6	SG	Singapore	7.94	44.21
7	DE	Germany (2010)	7.01	37.79
8	IN	India	6.76	36.07
9	NL	Netherlands (2010)	6.42	33.72
10	NO	Norway (2010)	6.13	31.72
11	SE	Sweden (2010)	5.97	30.62
12	CN	China	5.40	26.69
13	US	United States of America (201	5.23	25.52
14	KR	Korea, Rep. (2010)	4.91	23.31
15	MY	Malaysia	4.48	20.34
16	FI	Finland (2010)	4.46	20.21
17	CA	Canada (2010)	4.12	17.86
18	EE	Estonia	4.03	17.24
19	IR	Iran, Islamic Rep.	2.67	7.86
20	QA	Qatar	1.53	0.00

Tables for Innovation Index 2012

3.2.3 Trade and transport-related infrastructure

Logistics Performance Index: Quality of trade and transport-related infrastructure (1= low to 5= high) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	DE	Germany	4.34	100.00
2	NL	Netherlands	4.25	95.45
3	SG	Singapore	4.22	93.94
4	NO	Norway	4.22	93.94
5	CH	Switzerland	4.17	91.41
6	US	United States of America	4.15	90.40
7	FI	Finland	4.08	86.87
8	CA	Canada	4.03	84.34
9	SE	Sweden	4.03	84.34
10	HK	Hong Kong (China)	4.00	82.83
11	DK	Denmark	3.99	82.32
12	GB	United Kingdom	3.95	80.30
13	IE	Ireland	3.76	70.71
14	KR	Korea, Rep.	3.62	63.64
15	CN	China	3.54	59.60
16	MY	Malaysia	3.50	57.58
17	IN	India	2.91	27.78
18	EE	Estonia	2.75	19.70
19	QA	Qatar	2.75	19.70
20	IR	Iran, Islamic Rep.	2.36	0.00

3.2.4 Gross capital formation

Gross capital formation (% of GDP) | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	CN	China	47.78	100.00
2	QA	Qatar (2009)	38.93	76.07
3	IN	India	34.77	64.83
4	IR	Iran, Islamic Rep. (2007)	33.16	60.48
5	KR	Korea, Rep.	29.15	49.64
6	SG	Singapore	23.83	35.25
7	HK	Hong Kong (China)	23.71	34.93
8	CA	Canada	22.20	30.85
9	MY	Malaysia	21.42	28.74
10	NO	Norway	21.32	28.47
11	EE	Estonia	19.97	24.82
12	CH	Switzerland	19.24	22.84
13	NL	Netherlands	18.68	21.33
14	FI	Finland	18.59	21.09
15	SE	Sweden	18.45	20.71
16	DE	Germany	17.34	17.71
17	DK	Denmark	16.40	15.17
18	US	United States of America	15.05	11.52
19	GB	United Kingdom	15.03	11.46
20	IE	Ireland	10.79	0.00

3.3.1 GDP per unit of energy use

GDP per unit of energy use (2000 PPP$ per kg of oil equivalent) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	HK	Hong Kong (China)	16.03	100.00
2	CH	Switzerland (2010)	10.18	59.66
3	IE	Ireland (2010)	9.35	53.93
4	GB	United Kingdom (2010)	8.64	49.03
5	DK	Denmark (2010)	8.36	47.10
6	SG	Singapore	7.94	44.21
7	DE	Germany (2010)	7.01	37.79
8	IN	India	6.76	36.07
9	NL	Netherlands (2010)	6.42	33.72
10	NO	Norway (2010)	6.13	31.72
11	SE	Sweden (2010)	5.97	30.62
12	CN	China	5.40	26.69
13	US	United States of America (201	5.23	25.52
14	KR	Korea, Rep. (2010)	4.91	23.31
15	MY	Malaysia	4.48	20.34
16	FI	Finland (2010)	4.46	20.21
17	CA	Canada (2010)	4.12	17.86
18	EE	Estonia	4.03	17.24
19	IR	Iran, Islamic Rep.	2.67	7.86
20	QA	Qatar	1.53	0.00

Source: Compiled the data value from the Dutta, S. & INSEAD. (2011), and Dutta, S. & INSEAD. (2012).

Tables for Innovation Index 2011

3.3.2 Environmental performance

Environmental performance index | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	CH	Switzerland	76.69	100.00
2	NO	Norway	69.92	83.27
3	SE	Sweden	68.82	80.55
4	GB	United Kingdom	68.82	80.55
5	DE	Germany	66.91	75.83
6	NL	Netherlands	65.65	72.71
7	FI	Finland	64.44	69.72
8	DK	Denmark	63.61	67.67
9	MY	Malaysia	62.51	64.95
10	IE	Ireland	58.69	55.51
11	CA	Canada	58.41	54.82
12	KR	Korea, Rep.	57.20	51.83
13	US	United States of America	56.59	50.32
14	SG	Singapore	56.36	49.75
15	EE	Estonia	56.09	49.09
16	QA	Qatar	46.59	25.61
17	IR	Iran, Islamic Rep.	42.73	16.07
18	CN	China	42.24	14.85
19	IN	India	36.23	0.00
20	HK	Hong Kong (China)	n/a	n/a

3.3.3 ISO 14001 environmental certificates

ISO 14001 Environmental management systems-Requirements with guidance for use: Number of certificates issued (per billion GDP in PPP$) | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	SE	Sweden	12.97	100.00
2	EE	Estonia	12.36	95.19
3	CH	Switzerland	7.88	59.83
4	CN	China	6.90	52.09
5	KR	Korea, Rep.	6.60	49.72
6	GB	United Kingdom	6.58	49.57
7	FI	Finland	5.98	44.83
8	DK	Denmark	5.00	37.10
9	MY	Malaysia	4.02	29.36
10	NO	Norway	3.42	24.63
11	IE	Ireland	3.38	24.31
12	HK	Hong Kong (China)	3.09	22.02
13	SG	Singapore	2.81	19.81
14	NL	Netherlands	2.19	14.92
15	DE	Germany	2.04	13.73
16	IN	India	0.96	5.21
17	IR	Iran, Islamic Rep.	0.87	4.50
18	CA	Canada	0.81	4.03
19	QA	Qatar	0.58	2.21
20	US	United States of America	0.30	0.00

4.1.1 Ease of getting credit

Ease of getting credit, percent rank index | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	MY	Malaysia	1.00	100.00
2	GB	United Kingdom	1.00	100.00
3	HK	Hong Kong (China)	0.98	97.18
4	US	United States of America	0.98	97.18
5	IE	Ireland	0.96	94.37
6	KR	Korea, Rep.	0.96	94.37
7	SG	Singapore	0.96	94.37
8	CA	Canada	0.89	84.51
9	DK	Denmark	0.89	84.51
10	DE	Germany	0.89	84.51
11	CH	Switzerland	0.89	84.51
12	EE	Estonia	0.80	71.83
13	FI	Finland	0.80	71.83
14	IN	India	0.80	71.83
15	NL	Netherlands	0.76	66.20
16	NO	Norway	0.76	66.20
17	SE	Sweden	0.76	66.20
18	CN	China	0.65	50.70
19	IR	Iran, Islamic Rep.	0.48	26.76
20	QA	Qatar	0.29	0.00

Tables for Innovation Index 2012

3.3.2 Environmental performance

Environmental performance index | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	CH	Switzerland	76.69	100.00
2	NO	Norway	69.92	83.27
3	SE	Sweden	68.82	80.55
4	GB	United Kingdom	68.82	80.55
5	DE	Germany	66.91	75.83
6	NL	Netherlands	65.65	72.71
7	FI	Finland	64.44	69.72
8	DK	Denmark	63.61	67.67
9	MY	Malaysia	62.51	64.95
10	IE	Ireland	58.69	55.51
11	CA	Canada	58.41	54.82
12	KR	Korea, Rep.	57.20	51.83
13	US	United States of America	56.59	50.32
14	SG	Singapore	56.36	49.75
15	EE	Estonia	56.09	49.09
16	QA	Qatar	46.59	25.61
17	IR	Iran, Islamic Rep.	42.73	16.07
18	CN	China	42.24	14.85
19	IN	India	36.23	0.00
20	HK	Hong Kong (China)	n/a	n/a

3.3.3 ISO 14001 environmental certificates

ISO 14001 Environmental management systems-Requirements with guidance for use: Number of certificates issued (per billion GDP in PPP$) | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	SE	Sweden	12.97	100.00
2	EE	Estonia	12.36	95.19
3	CH	Switzerland	7.88	59.83
4	CN	China	6.90	52.09
5	KR	Korea, Rep.	6.60	49.72
6	GB	United Kingdom	6.58	49.57
7	FI	Finland	5.98	44.83
8	DK	Denmark	5.00	37.10
9	MY	Malaysia	4.02	29.36
10	NO	Norway	3.42	24.63
11	IE	Ireland	3.38	24.31
12	HK	Hong Kong (China)	3.09	22.02
13	SG	Singapore	2.81	19.81
14	NL	Netherlands	2.19	14.92
15	DE	Germany	2.04	13.73
16	IN	India	0.96	5.21
17	IR	Iran, Islamic Rep.	0.87	4.50
18	CA	Canada	0.81	4.03
19	QA	Qatar	0.58	2.21
20	US	United States of America	0.30	0.00

4.1.1 Ease of getting credit

Ease of getting credit, percent rank index | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	MY	Malaysia	1.00	100.00
2	GB	United Kingdom	1.00	100.00
3	HK	Hong Kong (China)	0.98	97.18
4	US	United States of America	0.98	97.18
5	IE	Ireland	0.96	94.37
6	KR	Korea, Rep.	0.96	94.37
7	SG	Singapore	0.96	94.37
8	CA	Canada	0.89	84.51
9	DK	Denmark	0.89	84.51
10	DE	Germany	0.89	84.51
11	CH	Switzerland	0.89	84.51
12	EE	Estonia	0.80	71.83
13	FI	Finland	0.80	71.83
14	IN	India	0.80	71.83
15	NL	Netherlands	0.76	66.20
16	NO	Norway	0.76	66.20
17	SE	Sweden	0.76	66.20
18	CN	China	0.65	50.70
19	IR	Iran, Islamic Rep.	0.48	26.76
20	QA	Qatar	0.29	0.00

Source: Compiled the data value from the Dutta, S. & INSEAD. (2011), and Dutta, S. & INSEAD. (2012).

Tables for Innovation Index 2011

4.1.2 Domestic credit to private sector

Domestic credit to private sector (% of GDP) | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	DK	Denmark	225.00	100.00
2	IE	Ireland	210.19	92.14
3	GB	United Kingdom	204.02	88.86
4	US	United States of America	202.21	87.90
5	NL	Netherlands	199.30	86.35
6	HK	Hong Kong (China)	189.04	80.91
7	CH	Switzerland	174.62	73.25
8	SE	Sweden	140.02	54.88
9	CN	China	130.02	49.57
10	CA	Canada (2008)	128.25	48.63
11	MY	Malaysia	114.88	41.53
12	DE	Germany	107.77	37.76
13	SG	Singapore	102.15	34.77
14	KR	Korea, Rep.	100.84	34.08
15	EE	Estonia	97.22	32.15
16	FI	Finland	94.94	30.94
17	NO	Norway (2006)	87.04	26.75
18	QA	Qatar (2009)	51.46	7.86
19	IN	India	49.01	6.56
20	IR	Iran, Islamic Rep.	36.66	0.00

4.1.3 Microfinance institutions' gross loan portfolio

Microfinance institutions: Gross loan portfolio (%GDP)| 2009

Rank	Ccode	Country	Value	Score (0-100)
1	CN	China	0.37	100.00
2	IN	India	0.34	88.89
3	MY	Malaysia	0.10	0.00
4	CA	Canada	n/a	n/a
5	DK	Denmark	n/a	n/a
6	EE	Estonia	n/a	n/a
7	FI	Finland	n/a	n/a
8	DE	Germany	n/a	n/a
9	HK	Hong Kong (China)	n/a	n/a
10	IR	Iran, Islamic Rep.	n/a	n/a
11	IE	Ireland	n/a	n/a
12	KR	Korea, Rep.	n/a	n/a
13	NL	Netherlands	n/a	n/a
14	NO	Norway	n/a	n/a
15	QA	Qatar	n/a	n/a
16	SG	Singapore	n/a	n/a
17	SE	Sweden	n/a	n/a
18	CH	Switzerland	n/a	n/a
19	GB	United Kingdom	n/a	n/a
20	US	United States of America	n/a	n/a

4.2.1 Ease of protecting investors

Ease of protecting investors, percent rank index | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	HK	Hong Kong (China)	0.99	100.00
2	SG	Singapore	0.99	100.00
3	CA	Canada	0.98	98.89
4	IE	Ireland	0.98	98.89
5	MY	Malaysia	0.98	98.89
6	US	United States of America	0.98	98.89
7	GB	United Kingdom	0.95	95.56
8	NO	Norway	0.89	88.89
9	DK	Denmark	0.85	84.44
10	SE	Sweden	0.85	84.44
11	IN	India	0.76	74.44
12	EE	Estonia	0.68	65.56
13	FI	Finland	0.68	65.56
14	KR	Korea, Rep.	0.60	56.67
15	CN	China	0.49	44.44
16	DE	Germany	0.49	44.44
17	QA	Qatar	0.49	44.44
18	NL	Netherlands	0.41	35.56
19	IR	Iran, Islamic Rep.	0.09	0.00
20	CH	Switzerland	0.09	0.00

Tables for Innovation Index 2012

4.1.2 Domestic credit to private sector

Domestic credit to private sector (% of GDP) | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	DK	Denmark	225.00	100.00
2	IE	Ireland	210.19	92.14
3	GB	United Kingdom	204.02	88.86
4	US	United States of America	202.21	87.90
5	NL	Netherlands	199.30	86.35
6	HK	Hong Kong (China)	189.04	80.91
7	CH	Switzerland	174.62	73.25
8	SE	Sweden	140.02	54.88
9	CN	China	130.02	49.57
10	CA	Canada (2008)	128.25	48.63
11	MY	Malaysia	114.88	41.53
12	DE	Germany	107.77	37.76
13	SG	Singapore	102.15	34.77
14	KR	Korea, Rep.	100.84	34.08
15	EE	Estonia	97.22	32.15
16	FI	Finland	94.94	30.94
17	NO	Norway (2006)	87.04	26.75
18	QA	Qatar (2009)	51.46	7.86
19	IN	India	49.01	6.56
20	IR	Iran, Islamic Rep.	36.66	0.00

4.1.3 Microfinance institutions' gross loan portfolio

Microfinance institutions: Gross loan portfolio (% of GDP) | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	IN	India	0.34	100.00
2	CN	China	0.24	54.55
3	MY	Malaysia	0.12	0.00
4	CA	Canada	n/a	n/a
5	DK	Denmark	n/a	n/a
6	EE	Estonia	n/a	n/a
7	FI	Finland	n/a	n/a
8	DE	Germany	n/a	n/a
9	HK	Hong Kong (China)	n/a	n/a
10	IR	Iran, Islamic Rep.	n/a	n/a
11	IE	Ireland	n/a	n/a
12	KR	Korea, Rep.	n/a	n/a
13	NL	Netherlands	n/a	n/a
14	NO	Norway	n/a	n/a
15	QA	Qatar	n/a	n/a
16	SG	Singapore	n/a	n/a
17	SE	Sweden	n/a	n/a
18	CH	Switzerland	n/a	n/a
19	GB	United Kingdom	n/a	n/a
20	US	United States of America	n/a	n/a

4.2.1 Ease of protecting investors

Ease of protecting investors, percent rank index | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	HK	Hong Kong (China)	0.99	100.00
2	SG	Singapore	0.99	100.00
3	CA	Canada	0.98	98.89
4	IE	Ireland	0.98	98.89
5	MY	Malaysia	0.98	98.89
6	US	United States of America	0.98	98.89
7	GB	United Kingdom	0.95	95.56
8	NO	Norway	0.89	88.89
9	DK	Denmark	0.85	84.44
10	SE	Sweden	0.85	84.44
11	IN	India	0.76	74.44
12	EE	Estonia	0.68	65.56
13	FI	Finland	0.68	65.56
14	KR	Korea, Rep.	0.60	56.67
15	CN	China	0.49	44.44
16	DE	Germany	0.49	44.44
17	QA	Qatar	0.49	44.44
18	NL	Netherlands	0.41	35.56
19	IR	Iran, Islamic Rep.	0.09	0.00
20	CH	Switzerland	0.09	0.00

Source: Compiled the data value from the Dutta, S. & INSEAD. (2011), and Dutta, S. & INSEAD. (2012).

Tables for Innovation Index 2011

4.2.2 Market capitalization

Market capitalization of listed companies (% of GDP)| 2009

Rank	Ccode	Country	Value	Score (0-100)
1	HK	Hong Kong (China)	617.05	100.00
2	CH	Switzerland (2008)	172.44	26.38
3	SG	Singapore	170.53	26.06
4	QA	Qatar (2007)	134.41	20.08
5	MY	Malaysia	133.59	19.94
6	GB	United Kingdom	128.60	19.12
7	CA	Canada	125.81	18.66
8	SE	Sweden	106.46	15.45
9	US	United States of America	105.76	15.34
10	KR	Korea, Rep.	100.47	14.46
11	CN	China	100.46	14.46
12	IN	India	90.01	12.73
13	NL	Netherlands	68.49	9.16
14	DK	Denmark	60.35	7.82
15	NO	Norway	59.52	7.68
16	DE	Germany	38.77	4.24
17	FI	Finland	38.32	4.17
18	IR	Iran, Islamic Rep.	19.12	0.99
19	EE	Estonia	13.91	0.13
20	IE	Ireland	13.15	0.00

4.2.3 Total value of stocks trade

Total value of stocks traded (% of GDP)| 2009

Rank	Ccode	Country	Value	Score (0-100)
1	HK	Hong Kong (China) (2008)	755.10	100.00
2	US	United States of America	327.83	43.27
3	CH	Switzerland (2008)	300.90	39.69
4	KR	Korea, Rep.	189.97	24.96
5	CN	China	179.67	23.60
6	GB	United Kingdom	156.47	20.52
7	SG	Singapore	138.43	18.12
8	SE	Sweden	96.12	12.50
9	CA	Canada	92.78	12.06
10	IN	India	83.11	10.77
11	NL	Netherlands	76.27	9.87
12	NO	Norway	64.90	8.36
13	DK	Denmark	47.91	6.10
14	QA	Qatar (2007)	42.11	5.33
15	DE	Germany	38.51	4.85
16	FI	Finland	38.38	4.84
17	MY	Malaysia	38.08	4.80
18	IE	Ireland	8.13	0.82
19	IR	Iran, Islamic Rep.	5.15	0.42
20	EE	Estonia	1.96	0.00

4.2.4 Venture capital deals

Venture capital per investment location: number of deals (per trillion PPP$ GDP)| 2010

Rank	Ccode	Country	Value	Score (0-100)
1	CA	Canada	497.30	100.00
2	US	United States of America	376.81	75.77
3	SE	Sweden	299.41	60.21
4	IE	Ireland	284.91	57.29
5	EE	Estonia	277.48	55.80
6	NO	Norway	238.99	48.06
7	DK	Denmark	196.27	39.47
8	GB	United Kingdom	186.63	37.53
9	FI	Finland	170.38	34.26
10	CH	Switzerland	115.51	23.23
11	SG	Singapore	91.58	18.42
12	NL	Netherlands	84.85	17.06
13	DE	Germany	71.94	14.47
14	CN	China	58.39	11.74
15	IN	India	54.07	10.87
16	HK	Hong Kong (China)	43.65	8.78
17	KR	Korea, Rep.	26.55	5.34
18	MY	Malaysia	11.45	2.30
19	IR	Iran, Islamic Rep.	0.00	0.00
20	QA	Qatar	0.00	0.00

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4.2.2 Market capitalization

Market capitalization of listed companies (% of GDP) | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	HK	Hong Kong (China)	1,207.95	100.00
2	CH	Switzerland	234.71	18.62
3	MY	Malaysia	172.64	13.42
4	SG	Singapore	166.18	12.88
5	GB	United Kingdom	138.33	10.56
6	CA	Canada	137.24	10.46
7	SE	Sweden	126.89	9.60
8	US	United States of America	117.53	8.82
9	KR	Korea, Rep.	107.37	7.97
10	IN	India	93.46	6.80
11	QA	Qatar (2009)	89.36	6.46
12	NL	Netherlands	84.40	6.05
13	CN	China	81.02	5.76
14	DK	Denmark	74.66	5.23
15	NO	Norway	60.54	4.05
16	FI	Finland	49.48	3.13
17	DE	Germany	43.20	2.60
18	IR	Iran, Islamic Rep.	19.12	0.59
19	IE	Ireland	16.54	0.37
20	EE	Estonia	12.10	0.00

4.2.3 Total value of stock traded

Total value of stocks traded (% of GDP) | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	HK	Hong Kong (China)	711.73	100.00
2	US	United States of America	208.85	29.17
3	CH	Switzerland	166.00	23.14
4	KR	Korea, Rep.	160.34	22.34
5	CN	China	136.60	19.00
6	GB	United Kingdom	133.86	18.61
7	SG	Singapore	126.69	17.60
8	SE	Sweden	95.98	13.28
9	CA	Canada	86.76	11.98
10	NL	Netherlands	75.58	10.40
11	IN	India	61.12	8.37
12	NO	Norway	52.39	7.14
13	DK	Denmark	46.58	6.32
14	FI	Finland	42.66	5.77
15	DE	Germany	42.45	5.74
16	MY	Malaysia	37.93	5.10
17	QA	Qatar (2009)	25.95	3.41
18	IE	Ireland	8.25	0.92
19	IR	Iran, Islamic Rep.	5.15	0.48
20	EE	Estonia	1.72	0.00

4.2.4 Venture capital deals

Venture capital per investment location: number of deals (per trillion PPP$ GDP)| 2011

Rank	Ccode	Country	Value	Score (0-100)
1	SE	Sweden	315.84	100.00
2	IE	Ireland	281.77	89.21
3	US	United States of America	243.35	77.05
4	CA	Canada	225.72	71.47
5	NO	Norway	188.78	59.77
6	GB	United Kingdom	146.88	46.50
7	DK	Denmark	143.44	45.42
8	CH	Switzerland	120.26	38.08
9	FI	Finland	95.79	30.33
10	DE	Germany	90.63	28.69
11	SG	Singapore	53.97	17.09
12	IN	India	51.01	16.15
13	KR	Korea, Rep.	45.63	14.45
14	HK	Hong Kong (China)	42.34	13.41
15	EE	Estonia	37.11	11.75
16	NL	Netherlands	33.96	10.75
17	CN	China	32.34	10.24
18	MY	Malaysia	6.70	2.12
19	IR	Iran, Islamic Rep.	0.00	0.00
20	QA	Qatar	0.00	0.00

Source: Compiled the data value from the Dutta, S. & INSEAD. (2011), and Dutta, S. & INSEAD. (2012).

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4.3.1 Applied tariff rate

Applied tariff rate, weighted mean, all products (%)| 2008

Rank	Ccode	Country	Value	Score (0-100)
1	HK	Hong Kong (China)	0.00	100.00
2	SG	Singapore	0.00	100.00
3	CH	Switzerland	0.00	100.00
4	NO	Norway	0.42	97.91
5	CA	Canada	0.95	95.28
6	DK	Denmark	1.15	94.28
7	EE	Estonia	1.15	94.28
8	FI	Finland	1.15	94.28
9	DE	Germany	1.15	94.28
10	IE	Ireland	1.15	94.28
11	NL	Netherlands	1.15	94.28
12	SE	Sweden	1.15	94.28
13	GB	United Kingdom	1.15	94.28
14	US	United States of America	1.49	92.59
15	MY	Malaysia (2007)	3.13	84.44
16	QA	Qatar	3.71	81.56
17	CN	China	3.92	80.52
18	IN	India	6.09	69.73
19	KR	Korea, Rep.	7.10	64.71
20	IR	Iran, Islamic Rep.	20.12	0.00

4.3.2 Market access for non-agricultural exports

Non-agricultural market access: Five major export markets weighted actual applied tariff (%) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	CA	Canada	0.18	100.00
2	NO	Norway	0.44	90.19
3	MY	Malaysia	0.46	89.43
4	SG	Singapore	0.59	84.53
5	QA	Qatar	0.96	70.57
6	IR	Iran, Islamic Rep. (2008)	1.05	67.17
7	US	United States of America	1.10	65.28
8	CH	Switzerland	1.44	52.45
9	DK	Denmark	1.99	31.70
10	EE	Estonia	1.99	31.70
11	FI	Finland	1.99	31.70
12	DE	Germany	1.99	31.70
13	IE	Ireland	1.99	31.70
14	NL	Netherlands	1.99	31.70
15	SE	Sweden	1.99	31.70
16	GB	United Kingdom	1.99	31.70
17	IN	India	2.49	12.83
18	CN	China	2.63	7.55
19	KR	Korea, Rep.	2.80	1.13
20	HK	Hong Kong (China)	2.83	0.00

4.3.3 Import of goods and services

Imports of goods and services (% of GDP) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	SG	Singapore (2008)	202.58	100.00
2	HK	Hong Kong (China) (2008)	201.63	99.50
3	MY	Malaysia	74.88	32.31
4	IE	Ireland	73.61	31.64
5	EE	Estonia	65.23	27.20
6	NL	Netherlands	62.19	25.59
7	KR	Korea, Rep.	45.98	16.99
8	DK	Denmark	43.96	15.92
9	SE	Sweden	41.63	14.69
10	CH	Switzerland	40.74	14.22
11	DE	Germany	35.89	11.65
12	FI	Finland	34.91	11.13
13	QA	Qatar	31.22	9.17
14	CA	Canada	30.43	8.75
15	GB	United Kingdom	30.04	8.54
16	NO	Norway	27.34	7.11
17	IN	India	25.25	6.01
18	CN	China	22.33	4.46
19	IR	Iran, Islamic Rep. (2007)	21.54	4.04
20	US	United States of America	13.92	0.00

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4.3.1 Applied tariff rate

Applied tariff rate, weighted mean, all products (%)| 2010

Rank	Ccode	Country	Value	Score (0-100)
1	HK	Hong Kong (China)	0.00	100.00
2	SG	Singapore	0.00	100.00
3	CH	Switzerland	0.00	100.00
4	NO	Norway	0.44	97.76
5	CA	Canada	1.04	94.70
6	DK	Denmark	1.61	91.80
7	EE	Estonia	1.61	91.80
8	FI	Finland	1.61	91.80
9	DE	Germany	1.61	91.80
10	IE	Ireland	1.61	91.80
11	NL	Netherlands	1.61	91.80
12	SE	Sweden	1.61	91.80
13	GB	United Kingdom	1.61	91.80
14	US	United States of America	1.78	90.94
15	QA	Qatar (2009)	3.76	80.86
16	MY	Malaysia (2009)	3.95	79.89
17	CN	China	4.29	78.16
18	IN	India (2009)	8.22	58.15
19	KR	Korea, Rep.	8.71	55.65
20	IR	Iran, Islamic Rep. (2008)	19.64	0.00

4.3.2 Market access for non-agricultural exports

Non-agricultural market access: Five major export markets weighted actual applied tariff (%) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	CA	Canada	0.18	100.00
2	NO	Norway	0.44	90.19
3	MY	Malaysia	0.46	89.43
4	SG	Singapore	0.59	84.53
5	QA	Qatar	0.96	70.57
6	IR	Iran, Islamic Rep. (2008)	1.05	67.17
7	US	United States of America	1.10	65.28
8	CH	Switzerland	1.44	52.45
9	DK	Denmark	1.99	31.70
10	EE	Estonia	1.99	31.70
11	FI	Finland	1.99	31.70
12	DE	Germany	1.99	31.70
13	IE	Ireland	1.99	31.70
14	NL	Netherlands	1.99	31.70
15	SE	Sweden	1.99	31.70
16	GB	United Kingdom	1.99	31.70
17	IN	India	2.49	12.83
18	CN	China	2.63	7.55
19	KR	Korea, Rep.	2.80	1.13
20	HK	Hong Kong (China)	2.83	0.00

4.3.3 Imports of goods and services

Imports of goods and services (% of GDP) | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	HK	Hong Kong (China)	217.35	100.00
2	SG	Singapore	183.01	82.93
3	IE	Ireland	80.14	31.80
4	MY	Malaysia	79.49	31.48
5	EE	Estonia	71.59	27.55
6	NL	Netherlands	70.58	27.05
7	KR	Korea, Rep.	49.60	16.62
8	DK	Denmark	44.96	14.31
9	SE	Sweden	43.92	13.80
10	CH	Switzerland	42.21	12.95
11	DE	Germany	41.36	12.53
12	FI	Finland	39.00	11.35
13	GB	United Kingdom	32.84	8.29
14	CA	Canada	31.31	7.53
15	QA	Qatar (2009)	31.22	7.49
16	NO	Norway	28.63	6.20
17	CN	China	25.66	4.72
18	IN	India	24.78	4.28
19	IR	Iran, Islamic Rep. (2007)	21.54	2.67
20	US	United States of America	16.16	0.00

Source: Compiled the data value from the Dutta, S. & INSEAD. (2011), and Dutta, S. & INSEAD. (2012).

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4.3.4 Exports of goods and services

Exports of goods and services (% of GDP)| 2009

Rank	Ccode	Country	Value	Score (0-100)
1	SG	Singapore (2008)	220.53	100.00
2	HK	Hong Kong (China) (2008)	212.46	96.15
3	MY	Malaysia	96.42	40.72
4	IE	Ireland	88.53	36.95
5	EE	Estonia	70.60	28.38
6	NL	Netherlands	69.44	27.83
7	CH	Switzerland	51.68	19.35
8	KR	Korea, Rep.	49.90	18.50
9	SE	Sweden	48.50	17.83
10	DK	Denmark	47.77	17.48
11	QA	Qatar	46.75	16.99
12	NO	Norway	42.02	14.73
13	DE	Germany	40.83	14.16
14	FI	Finland	37.37	12.51
15	IR	Iran, Islamic Rep. (2007)	32.18	10.03
16	CA	Canada	28.72	8.38
17	GB	United Kingdom	27.67	7.88
18	CN	China	26.74	7.43
19	IN	India	20.59	4.49
20	US	United States of America	11.18	0.00

4.3.5 Intensity of local competition

Average answer to the question: How would you assess the intensity of competition in the local markets in your country? 1=limited in most industries; 7=intense in most industries| 2010

Rank	Ccode	Country	Value	Score (0-100)
1	DE	Germany	6.10	100.00
2	QA	Qatar	6.07	98.42
3	SE	Sweden	5.86	87.37
4	GB	United Kingdom	5.84	86.32
5	NL	Netherlands	5.77	82.63
6	KR	Korea, Rep.	5.66	76.84
7	US	United States of America	5.64	75.79
8	CN	China	5.62	74.74
9	CA	Canada	5.59	73.16
10	DK	Denmark	5.57	72.11
11	NO	Norway	5.49	67.89
12	SG	Singapore	5.46	66.32
13	IN	India	5.45	65.79
14	EE	Estonia	5.44	65.26
15	HK	Hong Kong (China)	5.41	63.68
16	CH	Switzerland	5.37	61.58
17	MY	Malaysia	5.31	58.42
18	IE	Ireland	5.10	47.37
19	FI	Finland	5.10	47.37
20	IR	Iran, Islamic Rep.	4.20	0.00

5.1.1 Employment in knowledge-intensive services

Employment in knowledge-intensive services (% of workforce) | 2008

Rank	Ccode	Country	Value	Score (0-100)
1	SG	Singapore	51.02	100.00
2	NL	Netherlands	47.20	91.25
3	CH	Switzerland	47.13	91.09
4	DK	Denmark	45.15	86.55
5	SE	Sweden	44.46	84.97
6	FI	Finland	43.82	83.51
7	NO	Norway	43.46	82.68
8	GB	United Kingdom	42.53	80.55
9	CA	Canada	42.39	80.23
10	DE	Germany	41.91	79.13
11	IE	Ireland	38.82	72.05
12	EE	Estonia	38.80	72.00
13	US	United States of America	36.30	66.28
14	HK	Hong Kong (China)	35.95	65.48
15	MY	Malaysia	26.82	44.56
16	QA	Qatar	24.20	38.56
17	KR	Korea, Rep.	22.44	34.52
18	IR	Iran, Islamic Rep.	15.04	17.57
19	CN	China (2005)	7.37	0.00
20	IN	India	n/a	n/a

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4.3.4 Exports of goods and services

Exports of goods and services (% of GDP) | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	HK	Hong Kong (China)	222.96	100.00
2	SG	Singapore	211.06	94.34
3	IE	Ireland	98.79	40.97
4	MY	Malaysia	97.30	40.26
5	EE	Estonia	78.27	31.21
6	NL	Netherlands	78.05	31.11
7	CH	Switzerland	53.55	19.46
8	KR	Korea, Rep.	52.39	18.91
9	DK	Denmark	50.56	18.04
10	SE	Sweden	49.96	17.76
11	DE	Germany	46.83	16.27
12	QA	Qatar (2009)	46.75	16.23
13	NO	Norway	41.94	13.94
14	FI	Finland	40.30	13.16
15	IR	Iran, Islamic Rep. (2007)	32.18	9.30
16	CN	China	29.57	8.06
17	GB	United Kingdom	29.45	8.01
18	CA	Canada	29.43	8.00
19	IN	India	21.54	4.25
20	US	United States of America	12.61	0.00

4.3.5 Intensity of local competition

Average answer to the question: How would you assess the intensity of competition in the local markets in your country? 1= limited in most industries; 7= intense in most industries | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	GB	United Kingdom	5.93	100.00
2	QA	Qatar	5.88	97.04
3	NL	Netherlands	5.87	96.45
4	DE	Germany	5.80	92.31
5	SE	Sweden	5.78	91.12
6	HK	Hong Kong (China)	5.68	85.21
7	KR	Korea, Rep.	5.65	83.43
8	US	United States of America	5.61	81.07
9	CA	Canada	5.58	79.29
10	CN	China	5.55	77.51
11	CH	Switzerland	5.46	72.19
12	MY	Malaysia	5.45	71.60
13	EE	Estonia	5.40	68.64
14	IN	India	5.39	68.05
15	NO	Norway	5.38	67.46
16	SG	Singapore	5.38	67.46
17	DK	Denmark	5.17	55.03
18	IE	Ireland	5.03	46.75
19	FI	Finland	4.80	33.14
20	IR	Iran, Islamic Rep.	4.24	0.00

5.1.1 Employment in knowledge-intensive services

Employment in knowledge-intensive services (% of workforce) | 2008

Rank	Ccode	Country	Value	Score (0-100)
1	SG	Singapore	51.02	100.00
2	NL	Netherlands	47.20	91.25
3	CH	Switzerland	47.13	91.09
4	DK	Denmark	45.15	86.55
5	SE	Sweden	44.46	84.97
6	FI	Finland	43.82	83.51
7	NO	Norway	43.46	82.68
8	GB	United Kingdom	42.53	80.55
9	CA	Canada	42.39	80.23
10	DE	Germany	41.91	79.13
11	IE	Ireland	38.82	72.05
12	EE	Estonia	38.80	72.00
13	US	United States of America	36.30	66.28
14	HK	Hong Kong (China)	35.95	65.48
15	MY	Malaysia	26.82	44.56
16	QA	Qatar	24.20	38.56
17	KR	Korea, Rep.	22.44	34.52
18	IR	Iran, Islamic Rep.	15.04	17.57
19	CN	China (2005)	7.37	0.00
20	IN	India	n/a	n/a

Source: Compiled the data value from the Dutta, S. & INSEAD. (2011), and Dutta, S. & INSEAD. (2012).

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5.1.2 Firms offering formal training

Firms offering formal training (% of firms) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	CN	China (2003)	84.78	100.00
2	IE	Ireland (2005)	73.16	83.12
3	EE	Estonia	69.26	77.46
4	MY	Malaysia (2007)	50.14	49.69
5	KR	Korea, Rep. (2005)	39.45	34.16
6	DE	Germany (2005)	35.38	28.25
7	IN	India (2006)	15.93	0.00
8	CA	Canada	n/a	n/a
9	DK	Denmark	n/a	n/a
10	FI	Finland	n/a	n/a
11	HK	Hong Kong (China)	n/a	n/a
12	IR	Iran, Islamic Rep.	n/a	n/a
13	NL	Netherlands	n/a	n/a
14	NO	Norway	n/a	n/a
15	QA	Qatar	n/a	n/a
16	SG	Singapore	n/a	n/a
17	SE	Sweden	n/a	n/a
18	CH	Switzerland	n/a	n/a
19	GB	United Kingdom	n/a	n/a
20	US	United States of America	n/a	n/a

5.1.3 GERD performed by business enterprise

Gross expenditure on R&D (GERD) performed by business enterprise (% of total)| 2008

Rank	Ccode	Country	Value	Score (0-100)
1	MY	Malaysia (2006)	84.91	100.00
2	KR	Korea, Rep. (2007)	76.24	87.74
3	SE	Sweden	74.05	84.64
4	CH	Switzerland (2004)	73.74	84.20
5	US	United States of America	72.62	82.62
6	FI	Finland	72.31	82.18
7	CN	China (2007)	72.28	82.14
8	DK	Denmark	70.13	79.09
9	DE	Germany (2007)	69.99	78.90
10	SG	Singapore (2007)	66.81	74.40
11	IE	Ireland	64.87	71.65
12	GB	United Kingdom	64.23	70.75
13	NL	Netherlands	54.98	57.67
14	CA	Canada (2009)	54.08	56.39
15	NO	Norway	53.84	56.05
16	HK	Hong Kong (China) (2006)	52.63	54.34
17	EE	Estonia	43.20	41.00
18	IN	India (2007)	29.63	21.81
19	IR	Iran, Islamic Rep. (2006)	14.21	0.00
20	QA	Qatar	n/a	n/a

5.1.4 GERD financed by business enterprise

Gross expenditure on R&D (GERD) financed by business enterprise (% of total)| 2007

Rank	Ccode	Country	Value	Score (0-100)
1	MY	Malaysia (2006)	84.49	100.00
2	KR	Korea, Rep.	73.65	84.58
3	CN	China	70.37	79.91
4	CH	Switzerland (2004)	69.73	79.00
5	FI	Finland	68.20	76.82
6	DE	Germany	67.92	76.42
7	US	United States of America (200	67.27	75.50
8	SE	Sweden	63.95	70.77
9	DK	Denmark (2008)	61.15	66.79
10	SG	Singapore	59.84	64.93
11	HK	Hong Kong (China) (2006)	52.79	54.89
12	NL	Netherlands (2003)	51.06	52.43
13	IE	Ireland	49.59	50.34
14	CA	Canada (2009)	47.47	47.32
15	GB	United Kingdom (2008)	47.21	46.96
16	NO	Norway	45.25	44.17
17	EE	Estonia (2008)	33.64	27.65
18	IN	India	29.63	21.94
19	IR	Iran, Islamic Rep. (2006)	14.21	0.00
20	QA	Qatar	n/a	n/a

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5.1.2 Firms offering formal training

Firms offering formal training (% of firms) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	CN	China (2003)	84.78	100.00
2	IE	Ireland (2005)	73.16	83.12
3	EE	Estonia	69.26	77.46
4	MY	Malaysia (2007)	50.14	49.69
5	KR	Korea, Rep. (2005)	39.45	34.16
6	DE	Germany (2005)	35.38	28.25
7	IN	India (2006)	15.93	0.00
8	CA	Canada	n/a	n/a
9	DK	Denmark	n/a	n/a
10	FI	Finland	n/a	n/a
11	HK	Hong Kong (China)	n/a	n/a
12	IR	Iran, Islamic Rep.	n/a	n/a
13	NL	Netherlands	n/a	n/a
14	NO	Norway	n/a	n/a
15	QA	Qatar	n/a	n/a
16	SG	Singapore	n/a	n/a
17	SE	Sweden	n/a	n/a
18	CH	Switzerland	n/a	n/a
19	GB	United Kingdom	n/a	n/a
20	US	United States of America	n/a	n/a

5.1.3 GERD performed by business enterprise

Gross expenditure on R&D (GERD) performed by business enterprise (% of total)| 2009

Rank	Ccode	Country	Value	Score (0-100)
1	MY	Malaysia (2006)	84.91	100.00
2	KR	Korea, Rep. (2008)	75.37	87.16
3	CH	Switzerland (2008)	73.50	84.64
4	CN	China (2008)	73.26	84.32
5	US	United States of America (200	72.60	83.43
6	SG	Singapore (2008)	71.83	82.40
7	FI	Finland (2010)	71.03	81.32
8	SE	Sweden	70.49	80.59
9	DE	Germany	68.16	77.46
10	DK	Denmark	66.82	75.65
11	IE	Ireland	66.27	74.91
12	GB	United Kingdom (2010)	61.99	69.15
13	CA	Canada	54.08	58.51
14	NO	Norway	52.61	56.53
15	NL	Netherlands	47.88	50.16
16	EE	Estonia	44.66	45.83
17	HK	Hong Kong (China)	42.65	43.12
18	IN	India (2007)	33.92	31.37
19	IR	Iran, Islamic Rep. (2008)	10.61	0.00
20	QA	Qatar	n/a	n/a

5.1.4 GERD financed by business enterprise

Gross expenditure on R&D (GERD) financed by business enterprise (% of total) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	MY	Malaysia (2006)	84.49	100.00
2	KR	Korea, Rep. (2008)	72.88	78.33
3	CN	China (2008)	71.74	76.20
4	CH	Switzerland (2008)	68.19	69.57
5	FI	Finland	68.10	69.40
6	DE	Germany (2008)	67.27	67.86
7	US	United States of America (200	67.27	67.86
8	SG	Singapore (2008)	63.48	60.78
9	DK	Denmark	60.18	54.62
10	SE	Sweden	58.93	52.29
11	IE	Ireland	50.84	37.18
12	NL	Netherlands (2007)	48.79	33.36
13	CA	Canada	47.47	30.89
14	HK	Hong Kong (China)	45.83	27.83
15	GB	United Kingdom (2010)	45.42	27.07
16	NO	Norway (2007)	45.25	26.75
17	EE	Estonia	38.42	14.00
18	IN	India (2007)	33.92	5.60
19	IR	Iran, Islamic Rep. (2008)	30.92	0.00
20	QA	Qatar	n/a	n/a

Source: Compiled the data value from the Dutta, S. & INSEAD. (2011), and Dutta, S. & INSEAD. (2012).

Tables for Innovation Index 2011

5.1.5 GMAT mean score

Weighted mean score at the Graduate Management Admission Test (GMAT) by residency and by citizenship (weighted by the total numbers of test takers) | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	SG	Singapore	596.31	100.00
2	CN	China	595.01	98.83
3	GB	United Kingdom	586.10	90.81
4	KR	Korea, Rep.	583.10	88.11
5	IN	India	580.58	85.84
6	HK	Hong Kong (China)	574.00	79.92
7	DE	Germany	565.49	72.25
8	CH	Switzerland	560.99	68.20
9	EE	Estonia	560.88	68.10
10	CA	Canada	557.62	65.17
11	IE	Ireland	554.60	62.45
12	DK	Denmark	549.46	57.82
13	MY	Malaysia	545.93	54.65
14	NL	Netherlands	542.13	51.22
15	US	United States of America	529.36	39.73
16	IR	Iran, Islamic Rep.	518.70	30.13
17	SE	Sweden	513.01	25.01
18	NO	Norway	512.39	24.45
19	FI	Finland	507.78	20.30
20	QA	Qatar	485.23	0.00

5.1.6 GMAT test takers

Number of test takers of the Graduate Management Admission Test (GMAT) by citizenship (scaled by million population 20-34 years old) | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	US	United States of America	1,832.03	100.00
2	HK	Hong Kong (China)	1,458.35	79.30
3	SG	Singapore	1,150.07	62.23
4	CA	Canada	1,053.23	56.87
5	KR	Korea, Rep.	505.56	26.53
6	CH	Switzerland	400.45	20.71
7	NL	Netherlands	310.94	15.76
8	IE	Ireland	307.07	15.54
9	NO	Norway	292.03	14.71
10	SE	Sweden	273.87	13.70
11	DE	Germany	260.45	12.96
12	FI	Finland	225.05	11.00
13	EE	Estonia	162.03	7.51
14	GB	United Kingdom	131.96	5.84
15	CN	China	128.10	5.63
16	DK	Denmark	112.28	4.75
17	IN	India	80.95	3.02
18	MY	Malaysia	65.11	2.14
19	QA	Qatar	43.36	0.94
20	IR	Iran, Islamic Rep.	26.45	0.00

5.2.1 University/ industry research collaboration

Average answer to the survey question: To what extent do business and universities collaborate on research and development (R&D) in your country? 1= do not collaborate at all; 7= collaborate extensively | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	US	United States of America	5.79	100.00
2	CH	Switzerland	5.71	96.93
3	FI	Finland	5.64	94.25
4	GB	United Kingdom	5.59	92.34
5	SE	Sweden	5.54	90.42
6	SG	Singapore	5.44	86.59
7	CA	Canada	5.40	85.06
8	DK	Denmark	5.34	82.76
9	DE	Germany	5.24	78.93
10	NL	Netherlands	5.19	77.01
11	IE	Ireland	4.97	68.58
12	NO	Norway	4.85	63.98
13	MY	Malaysia	4.70	58.24
14	KR	Korea, Rep.	4.68	57.47
15	CN	China	4.59	54.02
16	HK	Hong Kong (China)	4.57	53.26
17	QA	Qatar	4.52	51.34
18	EE	Estonia	4.19	38.70
19	IN	India	3.74	21.46
20	IR	Iran, Islamic Rep.	3.18	0.00

Tables for Innovation Index 2012

5.1.5 GMAT mean score

Weighted mean score at the Graduate Management Admission Test (GMAT) by residency and by citizenship (weighted by the total numbers of test takers) | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	SG	Singapore	596.31	100.00
2	CN	China	595.01	98.83
3	GB	United Kingdom	586.10	90.81
4	KR	Korea, Rep.	583.10	88.11
5	IN	India	580.58	85.84
6	HK	Hong Kong (China)	574.00	79.92
7	DE	Germany	565.49	72.25
8	CH	Switzerland	560.99	68.20
9	EE	Estonia	560.88	68.10
10	CA	Canada	557.62	65.17
11	IE	Ireland	554.60	62.45
12	DK	Denmark	549.46	57.82
13	MY	Malaysia	545.93	54.65
14	NL	Netherlands	542.13	51.22
15	US	United States of America	529.36	39.73
16	IR	Iran, Islamic Rep.	518.70	30.13
17	SE	Sweden	513.01	25.01
18	NO	Norway	512.39	24.45
19	FI	Finland	507.78	20.30
20	QA	Qatar	485.23	0.00

5.1.6 GMAT test takers

Number of test takers of the Graduate Management Admission Test (GMAT) by citizenship (scaled by million population 20-34 years old) | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	US	United States of America	1,832.03	100.00
2	HK	Hong Kong (China)	1,458.35	79.30
3	SG	Singapore	1,150.07	62.23
4	CA	Canada	1,053.23	56.87
5	KR	Korea, Rep.	505.56	26.53
6	CH	Switzerland	400.45	20.71
7	NL	Netherlands	310.94	15.76
8	IE	Ireland	307.07	15.54
9	NO	Norway	292.03	14.71
10	SE	Sweden	273.87	13.70
11	DE	Germany	260.45	12.96
12	FI	Finland	225.05	11.00
13	EE	Estonia	162.03	7.51
14	GB	United Kingdom	131.96	5.84
15	CN	China	128.10	5.63
16	DK	Denmark	112.28	4.75
17	IN	India	80.95	3.02
18	MY	Malaysia	65.11	2.14
19	QA	Qatar	43.36	0.94
20	IR	Iran, Islamic Rep.	26.45	0.00

5.2.1 University/ industry research collaboration

Average answer to the survey question: To what extent do business and universities collaborate on research and development (R&D) in your country? 1= do not collaborate at all; 7= collaborate extensively | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	CH	Switzerland	5.78	100.00
2	GB	United Kingdom	5.75	98.81
3	US	United States of America	5.71	97.23
4	FI	Finland	5.58	92.09
5	SE	Sweden	5.52	89.72
6	SG	Singapore	5.47	87.75
7	NL	Netherlands	5.32	81.82
8	QA	Qatar	5.27	79.84
9	CA	Canada	5.20	77.08
10	DE	Germany	5.16	75.49
11	DK	Denmark	5.15	75.10
12	IE	Ireland	4.96	67.59
13	MY	Malaysia	4.91	65.61
14	NO	Norway	4.79	60.87
15	HK	Hong Kong (China)	4.74	58.89
16	KR	Korea, Rep.	4.66	55.73
17	CN	China	4.53	50.59
18	EE	Estonia	4.34	43.08
19	IN	India	3.82	22.53
20	IR	Iran, Islamic Rep.	3.25	0.00

Source: Compiled the data value from the Dutta, S. & INSEAD. (2011), and Dutta, S. & INSEAD. (2012).

Tables for Innovation Index 2011

5.2.2 State of cluster development

Mean of the average responses to three survey questions on the role of clusters in the economy. 'Clusters' are defined as geographic concentrations of firms, suppliers, producers of related products and services, and specialized institutions in a particular field (e.g., financial services in New York, leather and footwear in Italy, consumer electronics in Japan). The questions are: (1) In your country's economy, how prevalent are well-developed and deep clusters? 1 = nonexistent; 7 = widespread in many fields. (2) In your country, how extensive is collaboration among firms, suppliers, partners, and associated institutions within clusters? 1 = collaboration is nonexistent; 7 = collaboration is extensive. (3) In your country, what is the state of formal policies supporting cluster development? 1 = nonexistent; 7 = extensive and covers many clusters and regions. | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	SG	Singapore	5.14	100.00
2	FI	Finland	5.11	98.47
3	SE	Sweden	4.92	88.78
4	CN	China	4.88	86.73
5	DE	Germany	4.86	85.71
6	HK	Hong Kong (China)	4.81	83.16
7	US	United States of America	4.80	82.65
8	CH	Switzerland	4.74	79.59
9	MY	Malaysia	4.73	79.08
10	NL	Netherlands	4.68	76.53
11	CA	Canada	4.60	72.45
12	GB	United Kingdom	4.58	71.43
13	DK	Denmark	4.58	71.43
14	QA	Qatar	4.51	67.86
15	NO	Norway	4.48	66.33
16	KR	Korea, Rep.	4.28	56.12
17	IN	India	4.11	47.45
18	IE	Ireland	4.07	45.41
19	EE	Estonia	3.32	7.14
20	IR	Iran, Islamic Rep.	3.18	0.00

Tables for Innovation Index 2012

5.2.2 State of cluster development

Mean of the average responses to three survey questions on the role of clusters in the economy. 'Clusters' are defined as geographic concentrations of firms, suppliers, producers of related products and services, and specialized institutions in a particular field (e.g., financial services in New York, leather and footwear in Italy, consumer electronics in Japan). The questions are: (1) In your country's economy, how prevalent are well-developed and deep clusters? 1 = nonexistent; 7 = widespread in many fields. (2) In your country, how extensive is collaboration among firms, suppliers, partners, and associated institutions within clusters? 1 = collaboration is nonexistent; 7 = collaboration is extensive. (3) In your country, what is the state of formal policies supporting cluster development? 1 = nonexistent; 7 = extensive and covers many clusters and regions. | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	FI	Finland	5.34	100.00
2	SG	Singapore	5.14	90.87
3	MY	Malaysia	4.93	81.28
4	SE	Sweden	4.87	78.54
5	CN	China	4.86	78.08
6	QA	Qatar	4.83	76.71
7	US	United States of America	4.79	74.89
8	GB	United Kingdom	4.75	73.06
9	CH	Switzerland	4.72	71.69
10	DE	Germany	4.72	71.69
11	DK	Denmark	4.69	70.32
12	HK	Hong Kong (China)	4.69	70.32
13	NL	Netherlands	4.67	69.41
14	CA	Canada	4.53	63.01
15	NO	Norway	4.52	62.56
16	KR	Korea, Rep.	4.29	52.05
17	IE	Ireland	4.16	46.12
18	IN	India	4.11	43.84
19	EE	Estonia	3.50	15.98
20	IR	Iran, Islamic Rep.	3.15	0.00

Source: Compiled the data value from the Dutta, S. & INSEAD. (2011), and Dutta, S. & INSEAD. (2012).

Tables for Innovation Index 2011

5.2.3 GERD financed by abroad

Gross expenditure on R&D (GERD) financed by abroad (% of total)| 2007

Rank	Ccode	Country	Value	Score (0-100)
1	GB	United Kingdom (2008)	17.57	100.00
2	IE	Ireland	15.89	90.44
3	EE	Estonia (2008)	15.51	88.28
4	NL	Netherlands (2003)	11.28	64.20
5	DK	Denmark (2008)	9.71	55.26
6	SE	Sweden	9.32	53.04
7	CA	Canada (2009)	9.32	53.04
8	NO	Norway (2007)	8.31	47.30
9	FI	Finland	6.52	37.11
10	CH	Switzerland (2004)	5.23	29.77
11	SG	Singapore	4.33	24.64
12	DE	Germany	4.01	22.82
13	HK	Hong Kong (China) (2006)	3.88	22.08
14	CN	China	1.35	7.68
15	KR	Korea, Rep.	0.22	1.25
16	MY	Malaysia (2006)	0.19	1.08
17	US	United States of America (200	0.00	0.00
18	IN	India	n/a	n/a
19	IR	Iran, Islamic Rep.	n/a	n/a
20	QA	Qatar	n/a	n/a

5.2.4 Joint venture/ strategic alliance deals

Joint ventures/ strategic alliances: number of deals, fractional counting (per trillion PPP$ GDP) | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	CA	Canada	97.03	100.00
2	SG	Singapore	85.76	88.31
3	HK	Hong Kong (China)	82.14	84.55
4	MY	Malaysia	49.60	50.79
5	FI	Finland	48.68	49.83
6	DK	Denmark	47.66	48.78
7	NO	Norway	31.87	32.39
8	QA	Qatar	31.35	31.85
9	CH	Switzerland	29.75	30.19
10	SE	Sweden	27.72	28.09
11	GB	United Kingdom	25.45	25.73
12	US	United States of America	24.00	24.23
13	EE	Estonia	23.12	23.31
14	IE	Ireland	21.68	21.82
15	IN	India	18.91	18.95
16	CN	China	14.63	14.51
17	KR	Korea, Rep.	14.62	14.49
18	NL	Netherlands	12.62	12.42
19	DE	Germany	11.86	11.63
20	IR	Iran, Islamic Rep.	0.65	0.00

Tables for Innovation Index 2012

5.2.3 GERD financed by abroad

Gross expenditure on R&D (GERD) financed by abroad (% of total)| 2009

Rank	Ccode	Country	Value	Score (0-100)
1	GB	United Kingdom (2010)	17.75	100.00
2	IE	Ireland	15.59	87.70
3	EE	Estonia	11.37	63.67
4	NL	Netherlands (2007)	10.65	59.57
5	SE	Sweden	10.49	58.66
6	CA	Canada	9.32	51.99
7	DK	Denmark	8.71	48.52
8	NO	Norway (2007)	8.31	46.24
9	FI	Finland	6.61	36.56
10	HK	Hong Kong (China)	6.09	33.60
11	CH	Switzerland (2008)	5.95	32.80
12	SG	Singapore (2008)	5.30	29.10
13	DE	Germany (2008)	4.01	21.75
14	CN	China (2008)	1.24	5.98
15	KR	Korea, Rep. (2008)	0.31	0.68
16	MY	Malaysia (2006)	0.19	0.00
17	IN	India	n/a	n/a
18	IR	Iran, Islamic Rep.	n/a	n/a
19	QA	Qatar	n/a	n/a
20	US	United States of America	n/a	n/a

5.2.4 Joint venture/ strategic alliance deals

Joint ventures/ strategic alliances: number of deals, fractional counting (per trillion PPP$ GDP) | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	CA	Canada	125.91	100.00
2	QA	Qatar	116.09	91.95
3	HK	Hong Kong (China)	104.15	82.16
4	CH	Switzerland	84.68	66.19
5	SG	Singapore	84.18	65.78
6	MY	Malaysia	78.41	61.05
7	FI	Finland	66.85	51.57
8	SE	Sweden	63.69	48.98
9	DK	Denmark	54.24	41.23
10	IE	Ireland	51.30	38.82
11	NO	Norway	48.96	36.91
12	US	United States of America	46.06	34.53
13	GB	United Kingdom	42.67	31.75
14	NL	Netherlands	39.87	29.45
15	KR	Korea, Rep.	36.85	26.98
16	IN	India	36.00	26.28
17	CN	China	34.39	24.96
18	DE	Germany	21.34	14.26
19	EE	Estonia	12.72	7.19
20	IR	Iran, Islamic Rep.	3.95	0.00

Source: Compiled the data value from the Dutta, S. & INSEAD. (2011), and Dutta, S. & INSEAD. (2012).

Tables for Innovation Index 2011

5.2.5 Share of patents with foreign inventor

Percentage of published Patent Cooperation Treaty (PCT) applications with at least one foreign inventor | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	HK	Hong Kong (China) (2009)	100.00	100.00
2	IR	Iran, Islamic Rep. (2009)	100.00	100.00
3	CH	Switzerland	79.22	77.77
4	SG	Singapore	77.46	75.89
5	IE	Ireland	65.08	62.65
6	NL	Netherlands	56.97	53.97
7	FI	Finland	46.25	42.51
8	CA	Canada	43.21	39.26
9	US	United States of America	42.32	38.30
10	SE	Sweden	42.17	38.14
11	DK	Denmark	37.55	33.20
12	MY	Malaysia	33.20	28.55
13	GB	United Kingdom	32.38	27.67
14	DE	Germany	24.50	19.24
15	NO	Norway	21.07	15.57
16	EE	Estonia	19.51	13.91
17	IN	India	8.59	2.22
18	CN	China	6.74	0.25
19	KR	Korea, Rep.	6.51	0.00
20	QA	Qatar	n/a	n/a

5.3.1 Royalty and license fees payments

Royalty and license fees, payments (per thousand GDP) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	IE	Ireland	15.35	100.00
2	SG	Singapore	6.41	41.22
3	KR	Korea, Rep.	0.85	4.67
4	HK	Hong Kong (China) (2008)	0.75	4.01
5	MY	Malaysia	0.59	2.96
6	CA	Canada	0.58	2.89
7	FI	Finland	0.54	2.63
8	NL	Netherlands	0.51	2.43
9	SE	Sweden	0.45	2.04
10	GB	United Kingdom	0.42	1.84
11	DE	Germany	0.42	1.84
12	EE	Estonia	0.24	0.66
13	CN	China	0.22	0.53
14	US	United States of America	0.18	0.26
15	IN	India	0.14	0.00
16	NO	Norway	0.14	0.00
17	DK	Denmark	n/a	n/a
18	IR	Iran, Islamic Rep.	n/a	n/a
19	QA	Qatar	n/a	n/a
20	CH	Switzerland	n/a	n/a

5.3.2 High-tech imports

High-tech net imports (% of total net imports) | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	HK	Hong Kong (China)	43.49	100.00
2	MY	Malaysia	32.66	69.22
3	SG	Singapore	32.60	69.04
4	CN	China	25.57	49.06
5	IE	Ireland	20.44	34.48
6	US	United States of America	17.35	25.70
7	NL	Netherlands	16.51	23.31
8	CH	Switzerland	15.85	21.43
9	KR	Korea, Rep. (2011)	15.63	20.81
10	DE	Germany	15.10	19.30
11	SE	Sweden	14.85	18.59
12	EE	Estonia (2011)	14.33	17.11
13	GB	United Kingdom (2011)	13.09	13.59
14	CA	Canada (2011)	12.60	12.19
15	NO	Norway	12.01	10.52
16	DK	Denmark	11.65	9.49
17	FI	Finland	11.37	8.70
18	IN	India	8.31	0.00
19	IR	Iran, Islamic Rep.	n/a	n/a
20	QA	Qatar	n/a	n/a

Tables for Innovation Index 2012

5.2.5 Share of patents with foreign inventor

Percentage of published Patent Cooperation Treaty (PCT) applications with at least one foreign inventor | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	HK	Hong Kong (China) (2009)	100.00	100.00
2	IR	Iran, Islamic Rep. (2009)	100.00	100.00
3	CH	Switzerland	79.22	77.77
4	SG	Singapore	77.46	75.89
5	IE	Ireland	65.08	62.65
6	NL	Netherlands	56.97	53.97
7	FI	Finland	46.25	42.51
8	CA	Canada	43.21	39.26
9	US	United States of America	42.32	38.30
10	SE	Sweden	42.17	38.14
11	DK	Denmark	37.55	33.20
12	MY	Malaysia	33.20	28.55
13	GB	United Kingdom	32.38	27.67
14	DE	Germany	24.50	19.24
15	NO	Norway	21.07	15.57
16	EE	Estonia	19.51	13.91
17	IN	India	8.59	2.22
18	CN	China	6.74	0.25
19	KR	Korea, Rep.	6.51	0.00
20	QA	Qatar	n/a	n/a

5.3.1 Royalty and license fees payments

Royalty and license fees, payments (per thousand GDP) | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	IE	Ireland	182.73	100.00
2	SG	Singapore	71.20	38.53
3	KR	Korea, Rep.	8.84	4.16
4	HK	Hong Kong (China)	8.12	3.76
5	MY	Malaysia (2009)	5.87	2.52
6	CA	Canada	5.49	2.31
7	FI	Finland	5.17	2.13
8	NL	Netherlands	4.75	1.90
9	GB	United Kingdom	4.30	1.65
10	DE	Germany	3.97	1.47
11	EE	Estonia	3.12	1.00
12	SE	Sweden	3.01	0.94
13	US	United States of America	2.30	0.55
14	CN	China	2.22	0.51
15	IN	India	1.49	0.10
16	NO	Norway	1.30	0.00
17	DK	Denmark	n/a	n/a
18	IR	Iran, Islamic Rep.	n/a	n/a
19	QA	Qatar	n/a	n/a
20	CH	Switzerland	n/a	n/a

5.3.2 High-tech imports

High-tech net imports (% of total net imports) | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	HK	Hong Kong (China)	43.49	100.00
2	MY	Malaysia	32.66	69.22
3	SG	Singapore	32.60	69.04
4	CN	China	25.57	49.06
5	IE	Ireland	20.44	34.48
6	US	United States of America	17.35	25.70
7	NL	Netherlands	16.51	23.31
8	CH	Switzerland	15.85	21.43
9	KR	Korea, Rep. (2011)	15.63	20.81
10	DE	Germany	15.10	19.30
11	SE	Sweden	14.85	18.59
12	EE	Estonia (2011)	14.33	17.11
13	GB	United Kingdom (2011)	13.09	13.59
14	CA	Canada (2011)	12.60	12.19
15	NO	Norway	12.01	10.52
16	DK	Denmark	11.65	9.49
17	FI	Finland	11.37	8.70
18	IN	India	8.31	0.00
19	IR	Iran, Islamic Rep.	n/a	n/a
20	QA	Qatar	n/a	n/a

Source: Compiled the data value from the Dutta, S. & INSEAD. (2011), and Dutta, S. & INSEAD. (2012).

Tables for Innovation Index 2011

5.3.3 Computer and communications service imports

Computer, communications, and other services imports (% of commercial service imports) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	IE	Ireland	75.55	100.00
2	FI	Finland	65.17	78.54
3	SE	Sweden	56.45	60.51
4	NL	Netherlands	51.44	50.16
5	KR	Korea, Rep.	49.77	46.70
6	SG	Singapore	43.98	34.73
7	GB	United Kingdom	43.78	34.32
8	DE	Germany	43.55	33.84
9	CH	Switzerland	43.55	33.84
10	EE	Estonia (2010)	40.35	27.23
11	MY	Malaysia	38.31	23.01
12	NO	Norway	36.63	19.54
13	CN	China	35.29	16.77
14	CA	Canada	35.27	16.73
15	DK	Denmark (2004)	34.84	15.84
16	US	United States of America	34.68	15.51
17	IN	India	34.59	15.32
18	HK	Hong Kong (China)	27.18	0.00
19	IR	Iran, Islamic Rep.	n/a	n/a
20	QA	Qatar	n/a	n/a

5.3.4 Foreign direct investment net inflows

Foreign direct investment (FDI), net inflows (% of GDP) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	HK	Hong Kong (China)	24.88	100.00
2	IE	Ireland	11.11	44.59
3	SG	Singapore	9.22	36.98
4	EE	Estonia	9.18	36.82
5	CH	Switzerland	5.61	22.45
6	NL	Netherlands	4.20	16.78
7	GB	United Kingdom	3.35	13.36
8	NO	Norway	2.95	11.75
9	SE	Sweden	2.84	11.31
10	IN	India	2.51	9.98
11	CN	China	1.57	6.20
12	CA	Canada	1.49	5.88
13	DE	Germany	1.18	4.63
14	US	United States of America	0.95	3.70
15	DK	Denmark	0.94	3.66
16	IR	Iran, Islamic Rep. (2009)	0.91	3.54
17	MY	Malaysia	0.72	2.78
18	KR	Korea, Rep.	0.18	0.60
19	FI	Finland	0.03	0.00
20	QA	Qatar	n/a	n/a

6.1.1 National office patent applications

Number of resident patent applications at the national patent office (per billion PPP$ GDP) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	KR	Korea, Rep.	102.45	100.00
2	CN	China	27.75	26.70
3	DE	Germany	18.12	17.25
4	US	United States of America	17.54	16.68
5	FI	Finland	10.99	10.25
6	IR	Iran, Islamic Rep. (2006)	8.61	7.92
7	DK	Denmark	8.51	7.82
8	GB	United Kingdom	8.04	7.36
9	SE	Sweden	7.31	6.64
10	CH	Switzerland	5.89	5.25
11	IE	Ireland	5.62	4.98
12	NO	Norway	5.41	4.78
13	CA	Canada	4.34	3.73
14	NL	Netherlands	4.28	3.67
15	EE	Estonia	3.51	2.91
16	SG	Singapore	3.27	2.68
17	MY	Malaysia (2008)	2.30	1.73
18	IN	India (2008)	1.94	1.37
19	HK	Hong Kong (China)	0.54	0.00
20	QA	Qatar	n/a	n/a

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5.3.3 Computer and communications service imports

Computer, communications, and other services imports (% of commercial service imports) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	IE	Ireland	75.55	100.00
2	FI	Finland	65.17	78.54
3	SE	Sweden	56.45	60.51
4	NL	Netherlands	51.44	50.16
5	KR	Korea, Rep.	49.77	46.70
6	SG	Singapore	43.98	34.73
7	GB	United Kingdom	43.78	34.32
8	DE	Germany	43.55	33.84
9	CH	Switzerland	43.55	33.84
10	EE	Estonia (2010)	40.35	27.23
11	MY	Malaysia	38.31	23.01
12	NO	Norway	36.63	19.54
13	CN	China	35.29	16.77
14	CA	Canada	35.27	16.73
15	DK	Denmark (2004)	34.84	15.84
16	US	United States of America	34.68	15.51
17	IN	India	34.59	15.32
18	HK	Hong Kong (China)	27.18	0.00
19	IR	Iran, Islamic Rep.	n/a	n/a
20	QA	Qatar	n/a	n/a

5.3.4 Foreign direct investment net inflows

Foreign direct investment (FDI), net inflows (% of GDP) | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	HK	Hong Kong (China)	30.70	100.00
2	SG	Singapore	18.51	63.03
3	IE	Ireland	12.81	45.74
4	QA	Qatar (2009)	8.26	31.94
5	EE	Estonia	8.01	31.18
6	MY	Malaysia	4.00	19.02
7	CN	China	3.12	16.35
8	NO	Norway	2.84	15.50
9	GB	United Kingdom	2.09	13.22
10	FI	Finland	1.84	12.47
11	US	United States of America	1.62	11.80
12	CA	Canada	1.50	11.43
13	DE	Germany	1.41	11.16
14	IN	India	1.40	11.13
15	SE	Sweden	1.15	10.37
16	IR	Iran, Islamic Rep. (2009)	0.91	9.65
17	KR	Korea, Rep.	-0.01	6.85
18	DK	Denmark	-0.22	6.22
19	CH	Switzerland	-1.18	3.31
20	NL	Netherlands	-2.27	0.00

6.1.1 National office patent applications

Number of resident patent applications at the national patent office (per billion PPP$ GDP) | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	KR	Korea, Rep.	89.90	100.00
2	CN	China	28.96	31.90
3	CH	Switzerland	25.60	28.15
4	DE	Germany	25.27	27.78
5	FI	Finland	17.95	19.60
6	DK	Denmark	17.20	18.76
7	US	United States of America	16.66	18.16
8	SE	Sweden	16.15	17.59
9	GB	United Kingdom	9.58	10.25
10	NL	Netherlands	8.75	9.32
11	IR	Iran, Islamic Rep. (2006)	8.61	9.16
12	IE	Ireland	7.07	7.44
13	NO	Norway	6.40	6.69
14	EE	Estonia	4.48	4.55
15	CA	Canada	3.41	3.35
16	SG	Singapore	3.06	2.96
17	MY	Malaysia	2.96	2.85
18	IN	India (2009)	1.99	1.77
19	HK	Hong Kong (China)	0.41	0.00
20	QA	Qatar	n/a	n/a

Source: Compiled the data value from the Dutta, S. & INSEAD. (2011), and Dutta, S. & INSEAD. (2012).

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6.1.2 Patent Cooperation Treaty applications

Number of resident international patent applications at the Patent Cooperation Treaty (per billion PPP$ GDP) | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	CH	Switzerland	11.73	100.00
2	FI	Finland	10.49	89.13
3	SE	Sweden	9.12	77.13
4	KR	Korea, Rep.	6.71	56.00
5	DK	Denmark	6.28	52.23
6	DE	Germany	6.01	49.87
7	NL	Netherlands	4.94	40.49
8	US	United States of America	3.23	25.50
9	NO	Norway	2.67	20.60
10	IE	Ireland	2.33	17.62
11	GB	United Kingdom	2.15	16.04
12	SG	Singapore	2.13	15.86
13	CA	Canada	2.10	15.60
14	CN	China	1.45	9.90
15	EE	Estonia	1.30	8.59
16	MY	Malaysia	0.59	2.37
17	IN	India	0.32	0.00
18	HK	Hong Kong (China)	n/a	n/a
19	IR	Iran, Islamic Rep.	n/a	n/a
20	QA	Qatar	n/a	n/a

6.1.3 National office utility model applications

Number of resident utility model applications at the national patent office (per billion PPP$ GDP) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	CN	China	37.41	100.00
2	KR	Korea, Rep.	13.52	35.99
3	EE	Estonia	5.92	15.62
4	DE	Germany	5.39	14.20
5	FI	Finland (2006)	2.86	7.42
6	HK	Hong Kong (China)	1.32	3.30
7	DK	Denmark (2008)	1.16	2.87
8	MY	Malaysia (2008)	0.09	0.00
9	CA	Canada	n/a	n/a
10	IN	India	n/a	n/a
11	IR	Iran, Islamic Rep.	n/a	n/a
12	IE	Ireland	n/a	n/a
13	NL	Netherlands	n/a	n/a
14	NO	Norway	n/a	n/a
15	QA	Qatar	n/a	n/a
16	SG	Singapore	n/a	n/a
17	SE	Sweden	n/a	n/a
18	CH	Switzerland	n/a	n/a
19	GB	United Kingdom	n/a	n/a
20	US	United States of America	n/a	n/a

6.1.4 Scientific and Technical Journal Articles

Number of scientific and technical journal articles (per billion PPP $ GDP) | 2007

Rank	Ccode	Country	Value	Score (0-100)
1	CH	Switzerland	32.15	100.00
2	SE	Sweden	31.16	96.87
3	FI	Finland	28.18	87.43
4	DK	Denmark	27.68	85.85
5	CA	Canada	23.37	72.21
6	NL	Netherlands	23.15	71.51
7	GB	United Kingdom	22.66	69.96
8	EE	Estonia	18.93	58.15
9	NO	Norway	17.75	54.42
10	SG	Singapore	16.62	50.84
11	DE	Germany	16.18	49.45
12	US	United States of America	15.93	48.65
13	KR	Korea, Rep.	15.23	46.44
14	IE	Ireland	13.88	42.17
15	CN	China	8.23	24.28
16	IN	India	6.02	17.28
17	IR	Iran, Islamic Rep.	5.94	17.03
18	MY	Malaysia	2.38	5.76
19	QA	Qatar	0.56	0.00
20	HK	Hong Kong (China)	n/a	n/a

Tables for Innovation Index 2012

6.1.2 Patent Cooperation Treaty applications

Number of resident international patent applications at the Patent Cooperation Treaty (per billion PPP$ GDP) | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	CH	Switzerland	11.73	100.00
2	FI	Finland	10.49	89.13
3	SE	Sweden	9.12	77.13
4	KR	Korea, Rep.	6.71	56.00
5	DK	Denmark	6.28	52.23
6	DE	Germany	6.01	49.87
7	NL	Netherlands	4.94	40.49
8	US	United States of America	3.23	25.50
9	NO	Norway	2.67	20.60
10	IE	Ireland	2.33	17.62
11	GB	United Kingdom	2.15	16.04
12	SG	Singapore	2.13	15.86
13	CA	Canada	2.10	15.60
14	CN	China	1.45	9.90
15	EE	Estonia	1.30	8.59
16	MY	Malaysia	0.59	2.37
17	IN	India	0.32	0.00
18	HK	Hong Kong (China)	n/a	n/a
19	IR	Iran, Islamic Rep.	n/a	n/a
20	QA	Qatar	n/a	n/a

6.1.3 National office utility model applications

Number of resident utility model applications at the national patent office (per billion PPP$ GDP) | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	CN	China	40.24	100.00
2	KR	Korea, Rep.	9.00	22.19
3	EE	Estonia	6.38	15.67
4	DE	Germany	4.65	11.36
5	FI	Finland (2006)	2.86	6.90
6	HK	Hong Kong (China)	1.18	2.71
7	DK	Denmark	0.98	2.22
8	MY	Malaysia (2008)	0.09	0.00
9	CA	Canada	n/a	n/a
10	IN	India	n/a	n/a
11	IR	Iran, Islamic Rep.	n/a	n/a
12	IE	Ireland	n/a	n/a
13	NL	Netherlands	n/a	n/a
14	NO	Norway	n/a	n/a
15	QA	Qatar	n/a	n/a
16	SG	Singapore	n/a	n/a
17	SE	Sweden	n/a	n/a
18	CH	Switzerland	n/a	n/a
19	GB	United Kingdom	n/a	n/a
20	US	United States of America	n/a	n/a

6.1.4 Scientific and Technical Journal Articles

Number of scientific and technical journal articles (per billion PPP $ GDP) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	CH	Switzerland	30.11	100.00
2	SE	Sweden	28.44	94.36
3	FI	Finland	27.64	91.66
4	DK	Denmark	27.07	89.73
5	CA	Canada	22.71	75.00
6	NL	Netherlands	22.45	74.12
7	EE	Estonia	21.82	71.99
8	GB	United Kingdom	21.45	70.74
9	NO	Norway	17.67	57.97
10	SG	Singapore	16.56	54.22
11	KR	Korea, Rep.	16.31	53.38
12	DE	Germany	16.01	52.36
13	IE	Ireland	15.96	52.20
14	US	United States of America	14.97	48.85
15	CN	China	8.16	25.84
16	IR	Iran, Islamic Rep.	7.42	23.34
17	IN	India	5.47	16.76
18	MY	Malaysia	3.52	10.17
19	QA	Qatar	0.51	0.00
20	HK	Hong Kong (China)	n/a	n/a

Source: Compiled the data value from the Dutta, S. & INSEAD. (2011), and Dutta, S. & INSEAD. (2012).

Tables for Innovation Index 2011

6.2.1 Growth rate of GDP per person engaged

Growth rate of GDP per person engaged (constant 1990 US$ at PPP, 2007 to 2008) | 2008

Rank	Ccode	Country	Value	Score (0-100)
1	QA	Qatar	15.13	100.00
2	CN	China	8.40	66.81
3	IN	India	4.51	47.63
4	US	United States of America	2.66	38.51
5	MY	Malaysia	1.99	35.21
6	KR	Korea, Rep.	1.60	33.28
7	GB	United Kingdom	1.39	32.25
8	CH	Switzerland	0.92	29.93
9	NL	Netherlands	0.60	28.35
10	IR	Iran, Islamic Rep.	0.18	26.28
11	HK	Hong Kong (China)	0.15	26.13
12	DE	Germany	-0.12	24.80
13	FI	Finland	-0.55	22.68
14	CA	Canada	-0.94	20.76
15	NO	Norway	-1.02	20.36
16	SE	Sweden	-1.13	19.82
17	IE	Ireland	-1.37	18.64
18	DK	Denmark	-2.19	14.60
19	EE	Estonia	-3.79	6.71
20	SG	Singapore	-5.15	0.00

6.2.2 New business density

New business density (new registrations per thousand population 15-64 years old) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	HK	Hong Kong (China)	19.19	100.00
2	EE	Estonia (2007)	8.10	41.85
3	GB	United Kingdom	8.05	41.58
4	CA	Canada	7.56	39.01
5	SG	Singapore	7.40	38.18
6	CH	Switzerland	4.88	24.96
7	IE	Ireland	4.67	23.86
8	DK	Denmark	4.57	23.34
9	NO	Norway (2008)	4.49	22.92
10	SE	Sweden	4.09	20.82
11	FI	Finland	3.37	17.04
12	NL	Netherlands	3.10	15.63
13	MY	Malaysia	2.55	12.74
14	KR	Korea, Rep. (2008)	1.72	8.39
15	DE	Germany (2008)	1.19	5.61
16	IN	India (2008)	0.12	0.00
17	CN	China	n/a	n/a
18	IR	Iran, Islamic Rep.	n/a	n/a
19	QA	Qatar	n/a	n/a
20	US	United States of America	n/a	n/a

6.2.3 Total computer software spending

Total computer software spending (% of GDP) | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	CH	Switzerland	1.42	100.00
2	NL	Netherlands	1.06	71.88
3	SE	Sweden	1.03	69.53
4	GB	United Kingdom	0.98	65.63
5	US	United States of America	0.92	60.94
6	FI	Finland	0.86	56.25
7	IE	Ireland	0.82	53.13
8	DK	Denmark	0.80	51.56
9	CA	Canada	0.73	46.09
10	DE	Germany	0.65	39.84
11	NO	Norway	0.63	38.28
12	SG	Singapore	0.61	36.72
13	MY	Malaysia	0.36	17.19
14	CN	China	0.34	15.63
15	KR	Korea, Rep.	0.32	14.06
16	HK	Hong Kong (China)	0.24	7.81
17	IN	India	0.16	1.56
18	IR	Iran, Islamic Rep.	0.14	0.00
19	EE	Estonia	n/a	n/a
20	QA	Qatar	n/a	n/a

Tables for Innovation Index 2012

6.2.1 Growth rate of GDP per person engaged

Growth rate of GDP per person engaged (constant 1990 US$ at PPP, 2009 to 2010) | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	QA	Qatar	14.83	100.00
2	SG	Singapore	13.57	91.86
3	CN	China	9.12	63.09
4	EE	Estonia	8.62	59.86
5	IN	India	5.55	40.01
6	HK	Hong Kong (China)	5.13	37.30
7	KR	Korea, Rep.	4.92	35.94
8	MY	Malaysia	4.65	34.20
9	DK	Denmark	3.98	29.86
10	IE	Ireland	3.57	27.21
11	US	United States of America	3.46	26.50
12	SE	Sweden	3.24	25.08
13	DE	Germany	3.09	24.11
14	FI	Finland	2.99	23.46
15	NL	Netherlands	2.35	19.33
16	CH	Switzerland	2.07	17.52
17	GB	United Kingdom	1.75	15.45
18	CA	Canada	1.27	12.35
19	NO	Norway	0.44	6.98
20	IR	Iran, Islamic Rep.	-0.64	0.00

6.2.2 New business density

New business density (new registrations per thousand population 15-64 years old) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	HK	Hong Kong (China)	19.19	100.00
2	EE	Estonia (2007)	8.10	41.85
3	GB	United Kingdom	8.05	41.58
4	CA	Canada	7.56	39.01
5	SG	Singapore	7.40	38.18
6	CH	Switzerland	4.88	24.96
7	IE	Ireland	4.67	23.86
8	DK	Denmark	4.57	23.34
9	NO	Norway (2008)	4.49	22.92
10	SE	Sweden	4.09	20.82
11	FI	Finland	3.37	17.04
12	NL	Netherlands	3.10	15.63
13	MY	Malaysia	2.55	12.74
14	KR	Korea, Rep. (2008)	1.72	8.39
15	DE	Germany (2008)	1.19	5.61
16	IN	India (2008)	0.12	0.00
17	CN	China	n/a	n/a
18	IR	Iran, Islamic Rep.	n/a	n/a
19	QA	Qatar	n/a	n/a
20	US	United States of America	n/a	n/a

6.2.3 Total computer software spending

Total computer software spending (% of GDP) | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	CH	Switzerland	1.20	100.00
2	NL	Netherlands	1.13	93.58
3	GB	United Kingdom	0.97	78.90
4	IE	Ireland	0.97	78.90
5	US	United States of America	0.92	74.31
6	FI	Finland	0.87	69.72
7	SE	Sweden	0.84	66.97
8	DK	Denmark	0.82	65.14
9	DE	Germany	0.67	51.38
10	CA	Canada	0.60	44.95
11	NO	Norway	0.58	43.12
12	SG	Singapore	0.45	31.19
13	MY	Malaysia	0.31	18.35
14	CN	China	0.27	14.68
15	KR	Korea, Rep.	0.25	12.84
16	HK	Hong Kong (China)	0.22	10.09
17	IN	India	0.12	0.92
18	IR	Iran, Islamic Rep.	0.11	0.00
19	EE	Estonia	n/a	n/a
20	QA	Qatar	n/a	n/a

Source: Compiled the data value from the Dutta, S. & INSEAD. (2011), and Dutta, S. & INSEAD. (2012).

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6.2.4 ISO 9001 quality certificates

ISO 9001 Quality management systems-Requirements: Number of certificates issued (per billion PPP$ GDP) | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	CH	Switzerland	37.06	100.00
2	EE	Estonia	31.22	83.46
3	CN	China	29.35	78.16
4	MY	Malaysia	20.68	53.60
5	GB	United Kingdom	20.56	53.26
6	DE	Germany	17.18	43.68
7	KR	Korea, Rep.	16.90	42.89
8	NL	Netherlands	16.47	41.67
9	SE	Sweden	15.96	40.23
10	SG	Singapore	13.43	33.06
11	IE	Ireland	13.36	32.86
12	HK	Hong Kong (China)	12.14	29.41
13	FI	Finland	11.44	27.42
14	DK	Denmark	9.20	21.08
15	IN	India	8.19	18.22
16	NO	Norway	7.38	15.92
17	CA	Canada (2009)	5.69	11.13
18	IR	Iran, Islamic Rep.	3.78	5.72
19	US	United States of America (200	1.80	0.11
20	QA	Qatar	1.76	0.00

6.3.1 Royalty and license fees receipts

Royalty and license fees, receipts (per thousand GDP) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	SE	Sweden	1.16	100.00
2	IE	Ireland	0.75	64.35
3	SG	Singapore	0.74	63.48
4	FI	Finland	0.73	62.61
5	NL	Netherlands	0.69	59.13
6	US	United States of America	0.64	54.78
7	GB	United Kingdom	0.55	46.96
8	DE	Germany	0.41	34.78
9	KR	Korea, Rep.	0.38	32.17
10	CA	Canada	0.24	20.00
11	HK	Hong Kong (China) (2008)	0.18	14.78
12	NO	Norway	0.17	13.91
13	MY	Malaysia	0.14	11.30
14	EE	Estonia	0.13	10.43
15	CN	China	0.01	0.00
16	IN	India	0.01	0.00
17	DK	Denmark	n/a	n/a
18	IR	Iran, Islamic Rep.	n/a	n/a
19	QA	Qatar	n/a	n/a
20	CH	Switzerland	n/a	n/a

6.3.2 High-tech exports

High-tech net exports (% of total net exports) | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	SG	Singapore	38.10	100.00
2	MY	Malaysia	33.03	86.69
3	CN	China	30.06	78.90
4	KR	Korea, Rep.	24.04	63.10
5	CH	Switzerland	22.51	59.08
6	IE	Ireland	19.64	51.55
7	HK	Hong Kong (China)	17.08	44.83
8	GB	United Kingdom (2011)	15.89	41.71
9	NL	Netherlands	15.73	41.29
10	US	United States of America	14.76	38.74
11	SE	Sweden	14.48	38.01
12	EE	Estonia (2011)	13.98	36.69
13	DE	Germany	13.72	36.01
14	FI	Finland	10.06	26.40
15	DK	Denmark	9.46	24.83
16	CA	Canada (2011)	6.53	17.14
17	IN	India	4.84	12.70
18	NO	Norway	3.76	9.87
19	QA	Qatar (2009)	0.00	0.00
20	IR	Iran, Islamic Rep.	n/a	n/a

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6.2.4 ISO 9001 quality certificates

ISO 9001 Quality management systems-Requirements: Number of certificates issued (per billion PPP$ GDP) | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	CH	Switzerland	37.06	100.00
2	EE	Estonia	31.22	83.46
3	CN	China	29.35	78.16
4	MY	Malaysia	20.68	53.60
5	GB	United Kingdom	20.56	53.26
6	DE	Germany	17.18	43.68
7	KR	Korea, Rep.	16.90	42.89
8	NL	Netherlands	16.47	41.67
9	SE	Sweden	15.96	40.23
10	SG	Singapore	13.43	33.06
11	IE	Ireland	13.36	32.86
12	HK	Hong Kong (China)	12.14	29.41
13	FI	Finland	11.44	27.42
14	DK	Denmark	9.20	21.08
15	IN	India	8.19	18.22
16	NO	Norway	7.38	15.92
17	CA	Canada (2009)	5.69	11.13
18	IR	Iran, Islamic Rep.	3.78	5.72
19	US	United States of America (200	1.80	0.11
20	QA	Qatar	1.76	0.00

6.3.1 Royalty and license fees receipts

Royalty and license fees, receipts (per thousand GDP) | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	SE	Sweden	13.37	100.00
2	IE	Ireland	10.88	81.26
3	FI	Finland	9.79	73.06
4	SG	Singapore	8.38	62.45
5	US	United States of America	7.27	54.10
6	NL	Netherlands	7.03	52.29
7	GB	United Kingdom	6.35	47.18
8	DE	Germany	4.38	32.36
9	KR	Korea, Rep.	3.10	22.72
10	CA	Canada	2.42	17.61
11	HK	Hong Kong (China) (2009)	1.83	13.17
12	MY	Malaysia (2009)	1.38	9.78
13	NO	Norway	1.21	8.50
14	EE	Estonia	1.06	7.37
15	CN	China	0.14	0.45
16	IN	India	0.08	0.00
17	DK	Denmark	n/a	n/a
18	IR	Iran, Islamic Rep.	n/a	n/a
19	QA	Qatar	n/a	n/a
20	CH	Switzerland	n/a	n/a

6.3.2 High-tech exports

High-tech net exports (% of total net exports) | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	SG	Singapore	38.10	100.00
2	MY	Malaysia	33.03	86.69
3	CN	China	30.06	78.90
4	KR	Korea, Rep.	24.04	63.10
5	CH	Switzerland	22.51	59.08
6	IE	Ireland	19.64	51.55
7	HK	Hong Kong (China)	17.08	44.83
8	GB	United Kingdom (2011)	15.89	41.71
9	NL	Netherlands	15.73	41.29
10	US	United States of America	14.76	38.74
11	SE	Sweden	14.48	38.01
12	EE	Estonia (2011)	13.98	36.69
13	DE	Germany	13.72	36.01
14	FI	Finland	10.06	26.40
15	DK	Denmark	9.46	24.83
16	CA	Canada (2011)	6.53	17.14
17	IN	India	4.84	12.70
18	NO	Norway	3.76	9.87
19	QA	Qatar (2009)	0.00	0.00
20	IR	Iran, Islamic Rep.	n/a	n/a

Source: Compiled the data value from the Dutta, S. & INSEAD. (2011), and Dutta, S. & INSEAD. (2012).

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6.3.3 Computer and communications service exports

Computer, communications, and other services (% of commercial service exports) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	FI	Finland	77.33	100.00
2	IE	Ireland	70.77	86.69
3	IN	India	70.52	86.19
4	NL	Netherlands	57.18	59.13
5	DE	Germany	54.18	53.04
6	CA	Canada	49.47	43.49
7	CN	China	49.24	43.02
8	SG	Singapore	46.83	38.13
9	GB	United Kingdom	46.17	36.80
10	US	United States of America	45.44	35.31
11	SE	Sweden	44.25	32.90
12	CH	Switzerland	44.25	32.90
13	NO	Norway	44.12	32.64
14	KR	Korea, Rep.	43.22	30.81
15	HK	Hong Kong (China)	39.92	24.12
16	DK	Denmark (2004)	37.36	18.92
17	EE	Estonia (2010)	34.28	12.68
18	MY	Malaysia	28.03	0.00
19	IR	Iran, Islamic Rep.	n/a	n/a
20	QA	Qatar	n/a	n/a

6.3.4 Foreign direct investment net outflows

Foreign direct investment, net outflows (% of GDP) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	HK	Hong Kong (China)	30.39	100.00
2	IE	Ireland	10.64	35.01
3	EE	Estonia	8.23	27.08
4	SE	Sweden	7.86	25.86
5	NO	Norway	7.06	23.23
6	CH	Switzerland	6.83	22.47
7	MY	Malaysia	4.15	13.66
8	NL	Netherlands	3.55	11.68
9	SG	Singapore	3.28	10.79
10	CA	Canada	3.02	9.94
11	DK	Denmark	2.08	6.84
12	GB	United Kingdom	1.97	6.48
13	US	United States of America	1.90	6.25
14	DE	Germany	1.80	5.92
15	FI	Finland	1.61	5.30
16	KR	Korea, Rep.	1.27	4.18
17	IN	India	1.08	3.55
18	CN	China	0.88	2.90
19	IR	Iran, Islamic Rep. (2000)	0.00	0.00
20	QA	Qatar	n/a	n/a

7.1.1 National office trademark registrations

Number of trademark registration issued to residents by the national office (per billion PPP$ GDP) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	CN	China	89.85	100.00
2	KR	Korea, Rep.	87.04	96.26
3	EE	Estonia	52.77	50.70
4	CH	Switzerland	41.45	35.66
5	SE	Sweden	38.17	31.29
6	IN	India (2008)	37.66	30.62
7	MY	Malaysia	36.65	29.27
8	IR	Iran, Islamic Rep. (2006)	34.97	27.04
9	HK	Hong Kong (China)	34.39	26.27
10	DE	Germany	31.05	21.83
11	NL	Netherlands	29.26	19.45
12	DK	Denmark	24.11	12.60
13	FI	Finland	24.02	12.48
14	SG	Singapore	17.90	4.35
15	US	United States of America	17.55	3.88
16	GB	United Kingdom	16.50	2.49
17	CA	Canada	16.00	1.82
18	NO	Norway	14.96	0.44
19	IE	Ireland	14.63	0.00
20	QA	Qatar	n/a	n/a

Tables for Innovation Index 2012

6.3.3 Computer and communications service exports

Computer, communications, and other services (% of commercial service exports) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	FI	Finland	77.33	100.00
2	IE	Ireland	70.77	86.69
3	IN	India	70.52	86.19
4	NL	Netherlands	57.18	59.13
5	DE	Germany	54.18	53.04
6	CA	Canada	49.47	43.49
7	CN	China	49.24	43.02
8	SG	Singapore	46.83	38.13
9	GB	United Kingdom	46.17	36.80
10	US	United States of America	45.44	35.31
11	SE	Sweden	44.25	32.90
12	CH	Switzerland	44.25	32.90
13	NO	Norway	44.12	32.64
14	KR	Korea, Rep.	43.22	30.81
15	HK	Hong Kong (China)	39.92	24.12
16	DK	Denmark (2004)	37.36	18.92
17	EE	Estonia (2010)	34.28	12.68
18	MY	Malaysia	28.03	0.00
19	IR	Iran, Islamic Rep.	n/a	n/a
20	QA	Qatar	n/a	n/a

6.3.4 Foreign direct investment net outflows

Foreign direct investment, net outflows (% of GDP) | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	HK	Hong Kong (China)	33.90	100.00
2	SG	Singapore	9.46	27.91
3	IE	Ireland	8.57	25.28
4	CH	Switzerland	7.38	21.77
5	SE	Sweden	7.00	20.65
6	NL	Netherlands	6.32	18.64
7	MY	Malaysia	5.68	16.76
8	FI	Finland	4.46	13.16
9	DE	Germany	3.30	9.73
10	NO	Norway	2.97	8.76
11	CA	Canada	2.48	7.32
12	US	United States of America	2.41	7.11
13	KR	Korea, Rep.	1.90	5.60
14	DK	Denmark	1.07	3.16
15	CN	China	1.01	2.98
16	IN	India	0.76	2.24
17	EE	Estonia	0.66	1.95
18	GB	United Kingdom	0.47	1.39
19	IR	Iran, Islamic Rep.	0.00	0.00
20	QA	Qatar	n/a	n/a

7.1.1 National office trademark registrations

Number of trademark registration issued to residents by the national office (per billion PPP$ GDP) | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	CN	China	119.71	100.00
2	CH	Switzerland	95.20	79.53
3	EE	Estonia	77.50	64.74
4	DE	Germany	69.39	57.97
5	FI	Finland	53.53	44.72
6	SE	Sweden	49.36	41.23
7	NO	Norway	47.96	40.06
8	HK	Hong Kong (China)	45.78	38.24
9	GB	United Kingdom	41.57	34.73
10	IE	Ireland	38.14	31.86
11	KR	Korea, Rep.	32.95	27.52
12	CA	Canada	30.24	25.26
13	DK	Denmark	17.47	14.59
14	SG	Singapore	16.90	14.12
15	NL	Netherlands	15.87	13.26
16	MY	Malaysia	13.55	11.32
17	US	United States of America	11.25	9.40
18	IR	Iran, Islamic Rep.	0.00	0.00
19	IN	India	n/a	n/a
20	QA	Qatar	n/a	n/a

Source: Compiled the data value from the Dutta, S. & INSEAD. (2011), and Dutta, S. & INSEAD. (2012).

Tables for Innovation Index 2011

7.1.2 Madrid Agreement trademark registrations

Number of international trademark registration issued to residents through the Madrid system (per billion PPP$ GDP) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	CH	Switzerland	98.44	100.00
2	DE	Germany	18.80	19.10
3	DK	Denmark	17.20	17.47
4	FI	Finland	9.66	9.81
5	EE	Estonia	9.62	9.77
6	NO	Norway	8.63	8.77
7	SE	Sweden	7.27	7.39
8	SG	Singapore	5.97	6.06
9	GB	United Kingdom	3.87	3.93
10	CN	China	2.24	2.28
11	IE	Ireland	2.01	2.04
12	KR	Korea, Rep.	1.68	1.71
13	US	United States of America	1.47	1.49
14	IR	Iran, Islamic Rep.	0.58	0.59
15	NL	Netherlands	0.00	0.00
16	CA	Canada	n/a	n/a
17	HK	Hong Kong (China)	n/a	n/a
18	IN	India	n/a	n/a
19	MY	Malaysia	n/a	n/a
20	QA	Qatar	n/a	n/a

7.1.3 ICT and business model creation

Average answer to the question: To what extent are information and communication technologies creating new business models, services and products in your country? 1= not at all; 7- significantly | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	SE	Sweden	6.33	100.00
2	KR	Korea, Rep.	5.88	81.48
3	SG	Singapore	5.83	79.42
4	GB	United Kingdom	5.82	79.01
5	NO	Norway	5.76	76.54
6	CA	Canada	5.69	73.66
7	US	United States of America	5.67	72.84
8	CH	Switzerland	5.65	72.02
9	DE	Germany	5.65	72.02
10	EE	Estonia	5.56	68.31
11	NL	Netherlands	5.45	63.79
12	FI	Finland	5.43	62.96
13	QA	Qatar	5.41	62.14
14	HK	Hong Kong (China)	5.41	62.14
15	MY	Malaysia	5.35	59.67
16	IN	India	5.08	48.56
17	CN	China	5.08	48.56
18	DK	Denmark	5.05	47.33
19	IE	Ireland	4.96	43.62
20	IR	Iran, Islamic Rep.	3.90	0.00

Tables for Innovation Index 2012

7.1.2 Madrid Agreement trademark registrations

Number of international trademark registration issued to residents through the Madrid system (per billion PPP$ GDP) | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	CH	Switzerland	9.47	100.00
2	DK	Denmark	1.92	19.94
3	EE	Estonia	1.57	16.22
4	DE	Germany	1.54	15.91
5	NO	Norway	1.25	12.83
6	FI	Finland	1.10	11.24
7	SE	Sweden	0.75	7.53
8	SG	Singapore	0.61	6.04
9	GB	United Kingdom	0.49	4.77
10	US	United States of America	0.27	2.44
11	IE	Ireland	0.24	2.12
12	KR	Korea, Rep.	0.21	1.80
13	CN	China	0.18	1.48
14	IR	Iran, Islamic Rep.	0.04	0.00
15	CA	Canada	n/a	n/a
16	HK	Hong Kong (China)	n/a	n/a
17	IN	India	n/a	n/a
18	MY	Malaysia	n/a	n/a
19	NL	Netherlands	n/a	n/a
20	QA	Qatar	n/a	n/a

7.1.3 ICT and business model creation

Average answer to the question: To what extent are information and communication technologies creating new business models, services and products in your country? 1= not at all; 7- significantly | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	SE	Sweden	5.80	100.00
2	US	United States of America	5.62	91.59
3	GB	United Kingdom	5.59	90.19
4	SG	Singapore	5.52	86.92
5	NO	Norway	5.45	83.64
6	QA	Qatar	5.43	82.71
7	DK	Denmark	5.35	78.97
8	MY	Malaysia	5.35	78.97
9	EE	Estonia	5.28	75.70
10	NL	Netherlands	5.26	74.77
11	CA	Canada	5.25	74.30
12	FI	Finland	5.25	74.30
13	CH	Switzerland	5.16	70.09
14	HK	Hong Kong (China)	5.16	70.09
15	KR	Korea, Rep.	5.13	68.69
16	DE	Germany	4.92	58.88
17	IN	India	4.84	55.14
18	IE	Ireland	4.84	55.14
19	CN	China	4.77	51.87
20	IR	Iran, Islamic Rep.	3.66	0.00

Source: Compiled the data value from the Dutta, S. & INSEAD. (2011), and Dutta, S. & INSEAD. (2012).

Tables for Innovation Index 2011

7.1.4 ICT and organizational models creation

Average answer to the question: To what extent are information and communication technologies creating new organizational models (virtual teams, remote working, tele-commuting, etc.) within businesses in your country? 1= not at all; 7= significantly | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	SE	Sweden	6.03	100.00
2	US	United States of America	5.64	83.82
3	GB	United Kingdom	5.53	79.25
4	NO	Norway	5.53	79.25
5	SG	Singapore	5.52	78.84
6	CA	Canada	5.48	77.18
7	QA	Qatar	5.43	75.10
8	FI	Finland	5.39	73.44
9	NL	Netherlands	5.30	69.71
10	MY	Malaysia	5.25	67.63
11	HK	Hong Kong (China)	5.19	65.15
12	DE	Germany	5.17	64.32
13	EE	Estonia	5.16	63.90
14	CH	Switzerland	5.16	63.90
15	KR	Korea, Rep.	5.12	62.24
16	DK	Denmark	5.03	58.51
17	IN	India	4.73	46.06
18	IE	Ireland	4.73	46.06
19	CN	China	4.70	44.81
20	IR	Iran, Islamic Rep.	3.62	0.00

7.2.1 Recreation and culture consumption

Recreation and culture (% total individual consumption) | 2008

Rank	Ccode	Country	Value	Score (0-100)
1	SG	Singapore (2009)	9.67	100.00
2	NO	Norway (2006)	9.15	93.76
3	GB	United Kingdom	9.08	92.92
4	FI	Finland	8.88	90.52
5	US	United States of America	8.46	85.47
6	EE	Estonia	8.33	83.91
7	CA	Canada	7.95	79.35
8	SE	Sweden (2009)	7.86	78.27
9	DK	Denmark	7.84	78.03
10	KR	Korea, Rep.	7.80	77.55
11	NL	Netherlands	7.74	76.83
12	DE	Germany	7.49	73.83
13	CH	Switzerland (2007)	7.05	68.55
14	HK	Hong Kong (China)	6.78	65.31
15	IE	Ireland	5.32	47.78
16	MY	Malaysia	4.83	41.90
17	IR	Iran, Islamic Rep. (2007)	3.60	27.13
18	IN	India	1.34	0.00
19	CN	China	n/a	n/a
20	QA	Qatar	n/a	n/a

Tables for Innovation Index 2012

7.1.4 ICT and organizational models creation

Average answer to the question: To what extent are information and communication technologies creating new organizational models (virtual teams, remote working, tele-commuting, etc.) within businesses in your country? 1= not at all; 7= significantly | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	SG	Singapore	5.88	100.00
2	QA	Qatar	5.72	92.63
3	SE	Sweden	5.36	76.04
4	MY	Malaysia	5.35	75.58
5	KR	Korea, Rep.	4.99	58.99
6	CN	China	4.97	58.06
7	DK	Denmark	4.91	55.30
8	EE	Estonia	4.91	55.30
9	FI	Finland	4.88	53.92
10	US	United States of America	4.61	41.47
11	HK	Hong Kong (China)	4.60	41.01
12	GB	United Kingdom	4.59	40.55
13	NO	Norway	4.50	36.41
14	IN	India	4.45	34.10
15	CH	Switzerland	4.43	33.18
16	NL	Netherlands	4.33	28.57
17	DE	Germany	4.25	24.88
18	CA	Canada	4.20	22.58
19	IE	Ireland	4.04	15.21
20	IR	Iran, Islamic Rep.	3.71	0.00

7.2.1 Recreation and culture consumption

Recreation and culture (% total individual consumption) | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	NO	Norway	13.63	100.00
2	GB	United Kingdom	11.40	82.55
3	SE	Sweden	11.30	81.77
4	DK	Denmark	11.21	81.06
5	FI	Finland	11.10	80.20
6	NL	Netherlands	10.25	73.55
7	DE	Germany	9.52	67.84
8	CA	Canada	9.32	66.28
9	US	United States of America	9.28	65.96
10	SG	Singapore	8.68	61.27
11	KR	Korea, Rep.	7.79	54.30
12	EE	Estonia	7.68	53.44
13	CH	Switzerland	7.68	53.44
14	QA	Qatar	6.86	47.03
15	HK	Hong Kong (China)	6.76	46.24
16	IE	Ireland	6.73	46.01
17	CN	China	5.30	34.82
18	MY	Malaysia	5.06	32.94
19	IN	India	1.28	3.36
20	IR	Iran, Islamic Rep.	0.85	0.00

Source: Compiled the data value from the Dutta, S. & INSEAD. (2011), and Dutta, S. & INSEAD. (2012).

Tables for Innovation Index 2011

7.2.2 National feature films produced

Number of national feature films produced (per million population 15-69 years old) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	CH	Switzerland (2011)	18.99	100.00
2	HK	Hong Kong (China)	12.75	66.31
3	EE	Estonia (2011)	10.34	53.29
4	IE	Ireland (2011)	9.16	46.92
5	DK	Denmark (2011)	8.37	42.66
6	NO	Norway (2011)	6.93	34.88
7	SE	Sweden (2011)	6.31	31.53
8	FI	Finland (2011)	6.28	31.37
9	KR	Korea, Rep.	4.34	20.90
10	NL	Netherlands (2011)	3.95	18.79
11	US	United States of America (201	3.49	16.31
12	CA	Canada	3.26	15.06
13	DE	Germany (2011)	2.68	11.93
14	GB	United Kingdom (2011)	2.16	9.13
15	IN	India	1.61	6.16
16	SG	Singapore	1.59	6.05
17	MY	Malaysia	1.45	5.29
18	IR	Iran, Islamic Rep. (2005)	0.53	0.32
19	CN	China	0.47	0.00
20	QA	Qatar	n/a	n/a

7.2.3 Daily newspaper circulation

Paid-for dailies average circulation (per thousand population 15-69 years old) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	NO	Norway	604.20	100.00
2	FI	Finland	537.94	88.46
3	SE	Sweden	485.53	79.34
4	HK	Hong Kong (China)	400.84	64.59
5	CH	Switzerland	383.49	61.57
6	KR	Korea, Rep.	351.43	55.99
7	DE	Germany	333.65	52.89
8	GB	United Kingdom	321.02	50.69
9	NL	Netherlands	297.35	46.57
10	SG	Singapore	269.83	41.78
11	DK	Denmark	269.77	41.77
12	IE	Ireland	244.68	37.40
13	EE	Estonia	233.63	35.47
14	US	United States of America	212.39	31.78
15	CA	Canada	165.92	23.68
16	MY	Malaysia	139.66	19.11
17	IN	India	137.68	18.77
18	CN	China	108.98	13.77
19	QA	Qatar	88.05	10.13
20	IR	Iran, Islamic Rep.	29.90	0.00

7.2.4 Creative goods exports

Creative goods exports (% of total exports) | 2008

Rank	Ccode	Country	Value	Score (0-100)
1	HK	Hong Kong (China)	9.17	100.00
2	CN	China	5.94	64.66
3	CH	Switzerland	4.94	53.72
4	IN	India	4.86	52.84
5	GB	United Kingdom	4.35	47.26
6	DK	Denmark	3.72	40.37
7	EE	Estonia	3.08	33.37
8	US	United States of America	2.69	29.10
9	SE	Sweden	2.68	28.99
10	DE	Germany	2.39	25.82
11	CA	Canada	2.04	21.99
12	IE	Ireland	1.75	18.82
13	MY	Malaysia	1.68	18.05
14	NL	Netherlands	1.66	17.83
15	SG	Singapore	1.49	15.97
16	FI	Finland	1.16	12.36
17	IR	Iran, Islamic Rep. (2006)	1.11	11.82
18	KR	Korea, Rep.	1.01	10.72
19	NO	Norway	0.26	2.52
20	QA	Qatar (2009)	0.03	0.00

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7.2.2 National feature films produced

Number of national feature films produced (per million population 15-69 years old) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	CH	Switzerland (2011)	18.99	100.00
2	HK	Hong Kong (China)	12.75	66.31
3	EE	Estonia (2011)	10.34	53.29
4	IE	Ireland (2011)	9.16	46.92
5	DK	Denmark (2011)	8.37	42.66
6	NO	Norway (2011)	6.93	34.88
7	SE	Sweden (2011)	6.31	31.53
8	FI	Finland (2011)	6.28	31.37
9	KR	Korea, Rep.	4.34	20.90
10	NL	Netherlands (2011)	3.95	18.79
11	US	United States of America (201	3.49	16.31
12	CA	Canada	3.26	15.06
13	DE	Germany (2011)	2.68	11.93
14	GB	United Kingdom (2011)	2.16	9.13
15	IN	India	1.61	6.16
16	SG	Singapore	1.59	6.05
17	MY	Malaysia	1.45	5.29
18	IR	Iran, Islamic Rep. (2005)	0.53	0.32
19	CN	China	0.47	0.00
20	QA	Qatar	n/a	n/a

7.2.3 Daily newspaper circulation

Paid-for dailies average circulation (per thousand population 15-69 years old) | 2009

Rank	Ccode	Country	Value	Score (0-100)
1	NO	Norway	604.20	100.00
2	FI	Finland	537.94	88.46
3	SE	Sweden	485.53	79.34
4	HK	Hong Kong (China)	400.84	64.59
5	CH	Switzerland	383.49	61.57
6	KR	Korea, Rep.	351.43	55.99
7	DE	Germany	333.65	52.89
8	GB	United Kingdom	321.02	50.69
9	NL	Netherlands	297.35	46.57
10	SG	Singapore	269.83	41.78
11	DK	Denmark	269.77	41.77
12	IE	Ireland	244.68	37.40
13	EE	Estonia	233.63	35.47
14	US	United States of America	212.39	31.78
15	CA	Canada	165.92	23.68
16	MY	Malaysia	139.66	19.11
17	IN	India	137.68	18.77
18	CN	China	108.98	13.77
19	QA	Qatar	88.05	10.13
20	IR	Iran, Islamic Rep.	29.90	0.00

7.2.4 Creative goods exports

Creative goods exports (% of total exports) | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	HK	Hong Kong (China)	7.11	100.00
2	IN	India	6.23	87.52
3	CN	China	6.19	86.95
4	CH	Switzerland	4.92	68.94
5	GB	United Kingdom	4.53	63.40
6	DK	Denmark	3.86	53.90
7	EE	Estonia	3.26	45.39
8	SE	Sweden	2.62	36.31
9	US	United States of America	2.51	34.75
10	DE	Germany	2.24	30.92
11	MY	Malaysia	2.02	27.80
12	SG	Singapore	1.98	27.23
13	CA	Canada	1.82	24.96
14	NL	Netherlands	1.44	19.57
15	IE	Ireland	1.32	17.87
16	IR	Iran, Islamic Rep.	1.23	16.60
17	FI	Finland	0.99	13.19
18	KR	Korea, Rep.	0.86	11.35
19	NO	Norway	0.24	2.55
20	QA	Qatar (2009)	0.06	0.00

Source: Compiled the data value from the Dutta, S. & INSEAD. (2011), and Dutta, S. & INSEAD. (2012).

Tables for Innovation Index 2011

7.2.5 Creative services exports

Creative services: Exports (% of total services exports) | 2008

Rank	Ccode	Country	Value	Score (0-100)
1	NL	Netherlands	29.89	100.00
2	CA	Canada	18.60	62.23
3	DE	Germany	14.23	47.61
4	NO	Norway	10.88	36.40
5	SE	Sweden	9.56	31.98
6	MY	Malaysia	5.75	19.24
7	IN	India	5.44	18.20
8	EE	Estonia	5.31	17.77
9	KR	Korea, Rep.	2.97	9.94
10	GB	United Kingdom	2.33	7.80
11	CN	China	2.07	6.93
12	IE	Ireland	1.75	5.85
13	SG	Singapore	0.32	1.07
14	HK	Hong Kong (China) (2009)	0.29	0.97
15	FI	Finland	0.04	0.13
16	CH	Switzerland	0.00	0.00
17	DK	Denmark	n/a	n/a
18	IR	Iran, Islamic Rep.	n/a	n/a
19	QA	Qatar	n/a	n/a
20	US	United States of America	n/a	n/a

7.3.1 Generic top-level domains (gTLDs)

Generic top-level domains gTLDs (per thousand population 15-69 years old) | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	GB	United Kingdom	100.00	100.00
2	NL	Netherlands	100.00	100.00
3	CH	Switzerland	100.00	100.00
4	DK	Denmark	99.65	99.65
5	DE	Germany	98.94	98.93
6	US	United States of America	91.19	91.10
7	NO	Norway	74.46	74.20
8	SE	Sweden	73.51	73.24
9	CA	Canada	66.56	66.22
10	IE	Ireland	51.49	50.99
11	HK	Hong Kong (China)	51.36	50.86
12	FI	Finland	31.61	30.91
13	EE	Estonia	26.49	25.73
14	SG	Singapore	23.37	22.58
15	KR	Korea, Rep.	12.96	12.06
16	MY	Malaysia	5.45	4.48
17	QA	Qatar	4.59	3.61
18	IR	Iran, Islamic Rep.	2.25	1.24
19	CN	China	1.91	0.90
20	IN	India	1.02	0.00

7.3.2 Country-code top-level domains (ccTLDs)

Country-code top-level domains ccTLDs (per thousand population 15-69 years old) | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	NL	Netherlands	84.15	100.00
2	DK	Denmark	79.68	94.59
3	CH	Switzerland	79.59	94.49
4	DE	Germany	77.48	91.93
5	GB	United Kingdom	75.93	90.06
6	SE	Sweden	73.14	86.69
7	NO	Norway	70.91	83.99
8	FI	Finland	60.37	71.25
9	CA	Canada	60.32	71.19
10	EE	Estonia	59.29	69.94
11	IE	Ireland	56.34	66.37
12	HK	Hong Kong (China)	50.86	59.75
13	SG	Singapore	50.15	58.89
14	KR	Korea, Rep.	47.98	56.26
15	US	United States of America	30.42	35.03
16	MY	Malaysia	30.31	34.90
17	IR	Iran, Islamic Rep.	23.13	26.22
18	CN	China	21.06	23.71
19	IN	India	11.98	12.73
20	QA	Qatar (2003)	1.45	0.00

Tables for Innovation Index 2012

7.2.5 Creative services exports

Creative services: Exports (% of total services exports) | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	NL	Netherlands	29.46	100.00
2	CA	Canada	19.35	65.68
3	DE	Germany	13.84	46.98
4	NO	Norway	11.45	38.87
5	US	United States of America	5.35	18.16
6	EE	Estonia	5.11	17.35
7	MY	Malaysia (2009)	4.49	15.24
8	FI	Finland	3.57	12.12
9	IN	India	3.44	11.68
10	KR	Korea, Rep.	2.68	9.10
11	GB	United Kingdom	2.42	8.21
12	IE	Ireland	2.28	7.74
13	CN	China	1.83	6.21
14	DK	Denmark	0.72	2.44
15	SE	Sweden	0.62	2.10
16	SG	Singapore	0.19	0.64
17	HK	Hong Kong (China) (2009)	0.16	0.54
18	CH	Switzerland	0.00	0.00
19	IR	Iran, Islamic Rep.	n/a	n/a
20	QA	Qatar	n/a	n/a

7.3.1 Generic top-level domains (gTLDs)

Generic top-level domains gTLDs (per thousand population 15-69 years old) | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	GB	United Kingdom	100.00	100.00
2	NL	Netherlands	100.00	100.00
3	CH	Switzerland	100.00	100.00
4	DK	Denmark	99.65	99.65
5	DE	Germany	98.94	98.93
6	US	United States of America	91.19	91.10
7	NO	Norway	74.46	74.20
8	SE	Sweden	73.51	73.24
9	CA	Canada	66.56	66.22
10	IE	Ireland	51.49	50.99
11	HK	Hong Kong (China)	51.36	50.86
12	FI	Finland	31.61	30.91
13	EE	Estonia	26.49	25.73
14	SG	Singapore	23.37	22.58
15	KR	Korea, Rep.	12.96	12.06
16	MY	Malaysia	5.45	4.48
17	QA	Qatar	4.59	3.61
18	IR	Iran, Islamic Rep.	2.25	1.24
19	CN	China	1.91	0.90
20	IN	India	1.02	0.00

7.3.2 Country-code top-level domains (ccTLDs)

Country-code top-level domains ccTLDs (per thousand population 15-69 years old) | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	NL	Netherlands	84.15	100.00
2	DK	Denmark	79.68	94.59
3	CH	Switzerland	79.59	94.49
4	DE	Germany	77.48	91.93
5	GB	United Kingdom	75.93	90.06
6	SE	Sweden	73.14	86.69
7	NO	Norway	70.91	83.99
8	FI	Finland	60.37	71.25
9	CA	Canada	60.32	71.19
10	EE	Estonia	59.29	69.94
11	IE	Ireland	56.34	66.37
12	HK	Hong Kong (China)	50.86	59.75
13	SG	Singapore	50.15	58.89
14	KR	Korea, Rep.	47.98	56.26
15	US	United States of America	30.42	35.03
16	MY	Malaysia	30.31	34.90
17	IR	Iran, Islamic Rep.	23.13	26.22
18	CN	China	21.06	23.71
19	IN	India	11.98	12.73
20	QA	Qatar (2003)	1.45	0.00

Source: Compiled the data value from the Dutta, S. & INSEAD. (2011), and Dutta, S. & INSEAD. (2012).

Tables for Innovation Index 2011

7.3.3 Wikipedia monthly edits

Wikipedia monthly page edits per adult (per population 15-69 years old) | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	EE	Estonia	19,654.88	100.00
2	NO	Norway	17,624.87	89.65
3	FI	Finland	15,167.58	77.13
4	SE	Sweden	13,527.54	68.77
5	NL	Netherlands	11,586.53	58.88
6	GB	United Kingdom	9,311.92	47.28
7	HK	Hong Kong (China)	8,435.77	42.82
8	DE	Germany	8,222.97	41.73
9	DK	Denmark	8,116.00	41.19
10	CH	Switzerland	8,060.57	40.90
11	IE	Ireland	7,894.48	40.06
12	CA	Canada	7,570.42	38.40
13	US	United States of America	5,004.93	25.33
14	QA	Qatar	1,986.90	9.95
15	KR	Korea, Rep.	1,826.03	9.13
16	SG	Singapore	1,280.46	6.34
17	MY	Malaysia	1,053.96	5.19
18	IR	Iran, Islamic Rep.	367.91	1.69
19	IN	India	131.49	0.49
20	CN	China	35.66	0.00

7.3.4 Video uploads on Youtube

Number of video uploads on Youtube (scaled by population 15-69 years old) | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	FI	Finland	83.29	100.00
2	US	United States of America	83.17	99.78
3	NL	Netherlands	79.74	93.55
4	GB	United Kingdom	78.93	92.08
5	CA	Canada	78.56	91.41
6	IE	Ireland	78.24	90.83
7	SE	Sweden	77.65	89.75
8	NO	Norway	77.15	88.85
9	EE	Estonia	76.91	88.41
10	DK	Denmark	75.93	86.63
11	HK	Hong Kong (China)	73.52	82.25
12	SG	Singapore	73.07	81.44
13	CH	Switzerland	70.52	76.80
14	DE	Germany	70.46	76.69
15	QA	Qatar	60.54	58.67
16	MY	Malaysia	56.06	50.54
17	KR	Korea, Rep.	49.15	37.98
18	IN	India	28.24	0.00
19	CN	China	n/a	n/a
20	IR	Iran, Islamic Rep.	n/a	n/a

Tables for Innovation Index 2012

7.3.3 Wikipedia monthly edits

Wikipedia monthly page edits per adult (per population 15-69 years old) | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	EE	Estonia	19,654.88	100.00
2	NO	Norway	17,624.87	89.65
3	FI	Finland	15,167.58	77.13
4	SE	Sweden	13,527.54	68.77
5	NL	Netherlands	11,586.53	58.88
6	GB	United Kingdom	9,311.92	47.28
7	HK	Hong Kong (China)	8,435.77	42.82
8	DE	Germany	8,222.97	41.73
9	DK	Denmark	8,116.00	41.19
10	CH	Switzerland	8,060.57	40.90
11	IE	Ireland	7,894.48	40.06
12	CA	Canada	7,570.42	38.40
13	US	United States of America	5,004.93	25.33
14	QA	Qatar	1,986.90	9.95
15	KR	Korea, Rep.	1,826.03	9.13
16	SG	Singapore	1,280.46	6.34
17	MY	Malaysia	1,053.96	5.19
18	IR	Iran, Islamic Rep.	367.91	1.69
19	IN	India	131.49	0.49
20	CN	China	35.66	0.00

7.3.4 Video uploads on Youtube

Number of video uploads on Youtube (scaled by population 15-69 years old) | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	FI	Finland	83.29	100.00
2	US	United States of America	83.17	99.78
3	NL	Netherlands	79.74	93.55
4	GB	United Kingdom	78.93	92.08
5	CA	Canada	78.56	91.41
6	IE	Ireland	78.24	90.83
7	SE	Sweden	77.65	89.75
8	NO	Norway	77.15	88.85
9	EE	Estonia	76.91	88.41
10	DK	Denmark	75.93	86.63
11	HK	Hong Kong (China)	73.52	82.25
12	SG	Singapore	73.07	81.44
13	CH	Switzerland	70.52	76.80
14	DE	Germany	70.46	76.69
n/a	QA	Qatar	60.54	58.67
16	MY	Malaysia	56.06	50.54
17	KR	Korea, Rep.	49.15	37.98
18	IN	India	28.24	0.00
19	CN	China	n/a	n/a
20	IR	Iran, Islamic Rep.	n/a	n/a

Source: Compiled the data value from the Dutta, S. & INSEAD. (2011), and Dutta, S. & INSEAD. (2012).

Appendix 3: Data Tables: B) New Adding Media Indicators

Tables for Innovation Index 2011

ICT (Access & Use)

ICT Access Index ICT Use Index | 2008

Rank	Ccode	Country	Value	Score (0-100)
1	SE	Sweden	15.14	100.00
2	KR	Korea, Rep.	14.29	93.51
3	HK	Hong Kong (China)	14.04	91.60
4	DK	Denmark	14.10	92.06
5	CH	Switzerland	13.90	90.53
6	GB	United Kingdom	13.46	87.17
7	FI	Finland	12.65	80.98
8	NL	Netherlands	14.08	91.90
9	NO	Norway	13.20	85.18
10	SG	Singapore	13.83	89.99
11	DE	Germany	13.30	85.94
12	US	United States of America	11.75	74.10
13	IE	Ireland	11.94	75.55
14	CA	Canada	11.82	74.64
15	EE	Estonia	11.61	73.03
16	QA	Qatar	8.41	48.59
17	MY	Malaysia	6.81	36.36
18	CN	China	4.84	21.31
19	IR	Iran, Islamic Rep.	4.43	18.18
20	IN	India	2.05	0.00

* Notes: The combination of 3.1.1 ICT Access and 3.1.2 ICT Use.

*Source: Compiled from Dutta, S. & INSEAD. (2011) and Dutta, S. & INSEAD. (2012)

Broadcast Media

Number of TV and Radio Networks, Channels, and Stations, or licenses (for both publicly-own, private-own in terms of nationwide or regional) | 2011

Rank	Ccode	Country	Value	Score (0-100)
1	US	United States of America (200	15,004.00	100.00
2	CA	Canada (2008)	2,156.00	14.36
3	CN	China (2008)	2,000.00	13.32
4	SE	Sweden (2008)	1,080.00	7.19
5	IN	India (2007)	720.00	4.79
6	NL	Netherlands (2008)	605.00	4.02
7	DE	Germany (2008)	400.00	2.65
8	NO	Norway (2008)	301.00	1.99
9	DK	Denmark (2007)	286.00	1.89
10	IR	Iran, Islamic Rep. (2009)	63.00	0.41
11	MY	Malaysia (2008)	61.00	0.39
12	FI	Finland (2008)	40.00	0.25
13	CH	Switzerland (2009)	32.00	0.20
14	SG	Singapore	30.00	0.19
15	HK	Hong Kong, China	27.00	0.17
16	EE	Estonia (2008)	7.00	0.03
17	IE	Ireland (2007)	6.00	0.03
18	KR	Korea, Rep. (2010)	4.00	0.01
19	GB	United Kingdom (2011)	3.00	0.01
20	QA	Qatar (2011)	2.00	0.00

Tables for Innovation Index 2012

ICT (Access & Use)

ICT Access Index ICT Use Index | 2010

Rank	Ccode	Country	Value	Score (0-100)
1	SE	Sweden	16.12	100.00
2	KR	Korea, Rep.	16.06	99.55
3	HK	Hong Kong (China)	15.52	95.53
4	DK	Denmark	15.18	93.00
5	CH	Switzerland	15.07	92.18
6	GB	United Kingdom	14.80	90.16
7	FI	Finland	14.72	89.57
8	NL	Netherlands	14.67	89.20
9	NO	Norway	14.48	87.78
10	SG	Singapore	14.17	85.47
11	DE	Germany	14.10	84.95
12	US	United States of America	13.13	77.72
13	IE	Ireland	12.62	73.92
14	CA	Canada	12.30	71.54
15	EE	Estonia	11.00	61.85
16	QA	Qatar	10.84	60.66
17	MY	Malaysia	7.85	38.38
18	CN	China	5.59	21.54
19	IR	Iran, Islamic Rep.	5.07	17.66
20	IN	India	2.70	0.00

Broadcast Media

Number of TV and Radio Networks, Channels, and Stations, or licenses (for both publicly-own, private-own in terms of nationwide or regional) | 2012

Rank	Ccode	Country	Value	Score (0-100)
1	US	United States of America (200	15,004.00	100.00
2	CA	Canada (2008)	2,156.00	14.36
3	CN	China (2008)	2,000.00	13.32
4	SE	Sweden (2008)	1,080.00	7.19
5	IN	India (2007)	720.00	4.79
6	NL	Netherlands (2008)	605.00	4.02
7	DE	Germany (2008)	400.00	2.65
8	NO	Norway (2008)	301.00	1.99
9	DK	Denmark (2007)	286.00	1.89
10	IR	Iran, Islamic Rep. (2009)	63.00	0.41
11	MY	Malaysia (2008)	61.00	0.39
12	FI	Finland (2008)	40.00	0.25
13	HK	Hong Kong, China (2012)	35.00	0.22
14	CH	Switzerland (2009)	32.00	0.20
15	SG	Singapore	30.00	0.19
16	EE	Estonia (2008)	7.00	0.03
17	IE	Ireland (2007)	6.00	0.03
18	KR	Korea, Rep. (2010)	4.00	0.01
19	GB	United Kingdom (2012)	3.00	0.01
20	QA	Qatar (2012)	2.00	0.00

Source: CIA. (2013). ; Hong Kong Government Yearbook. (2011).; Hong Kong Government Fact sheets. (2012); Freedom House. (2011).; Freedom House. (2012); StatCounter GlobalStats. (2011)., and StatCounter GlobalStats. (2012).

Tables for Innovation Index 2011

Search Engine (Google)

Google Market Share (%)| 2011

Rank	Ccode	Country	Value	Score (0-100)
1	FI	Finland	97.90	100.00
2	IN	India	97.53	99.45
3	SE	Sweden	96.80	98.36
4	DK	Denmark	96.57	98.02
5	CH	Switzerland	96.35	97.69
6	EE	Estonia	95.80	96.87
7	DE	Germany	95.73	96.77
8	NL	Netherlands	94.61	95.10
9	IE	Ireland	94.60	95.09
10	NO	Norway	93.77	93.85
11	CA	Canada	91.83	90.96
12	GB	United Kingdom	91.78	90.89
13	QA	Qatar	90.23	88.58
14	IR	Iran, Islamic Rep.	89.87	88.05
15	MY	Malaysia	86.21	82.60
16	SG	Singapore	85.91	82.15
17	US	United States of America	79.71	72.92
18	HK	Hong Kong (China)	59.60	42.98
19	KR	Korea, Rep.	34.16	5.11
20	CN	China	30.73	0.00

Social Media (Facebook)

Facebook Market Share (%)| 2011

Rank	Ccode	Country	Value	Score (0-100)
1	MY	Malaysia	90.50	100.00
2	QA	Qatar	88.11	96.75
3	IN	India	85.63	93.37
4	IR	Iran, Islamic Rep.	85.22	92.82
5	HK	Hong Kong (China)	84.41	91.71
6	DE	Germany	79.84	85.50
7	SG	Singapore	77.37	82.14
8	SE	Sweden	72.74	75.84
9	KR	Korea, Rep.	70.78	73.17
10	CH	Switzerland	67.63	68.88
11	DK	Denmark	66.24	66.99
12	FI	Finland	65.91	66.54
13	NO	Norway	64.66	64.84
14	EE	Estonia	59.94	58.42
15	GB	United Kingdom	58.24	56.11
16	NL	Netherlands	52.95	48.91
17	IE	Ireland	48.98	43.51
18	US	United States of America	46.97	40.78
19	CA	Canada	41.52	33.36
20	CN	China	17.00	0.00

Tables for Innovation Index 2012

Search Engine (Google)

Google Market Share (%)| 2012

Rank	Ccode	Country	Value	Score (0-100)
1	IN	India	97.40	100.00
2	FI	Finland	97.22	99.75
3	DK	Denmark	96.56	98.83
4	EE	Estonia	96.41	98.62
5	SE	Sweden	96.31	98.48
6	CH	Switzerland	95.81	97.78
7	DE	Germany	94.86	96.45
8	IE	Ireland	94.62	96.12
9	NL	Netherlands	94.39	95.80
10	NO	Norway	92.05	92.53
11	IR	Iran, Islamic Rep.	91.79	92.17
12	GB	United Kingdom	91.64	91.96
13	CA	Canada	91.26	91.43
14	QA	Qatar	91.05	91.13
15	MY	Malaysia	90.72	90.67
16	SG	Singapore	88.64	87.77
17	US	United States of America	79.83	75.47
18	KR	Korea, Rep.	70.46	62.38
19	HK	Hong Kong (China)	65.41	55.33
20	CN	China	25.78	0.00

Social Media (Facebook)

Facebook Market Share (%)| 2012

Rank	Ccode	Country	Value	Score (0-100)
1	MY	Malaysia	86.49	100.00
2	KR	Korea, Rep.	79.32	89.84
3	IR	Iran, Islamic Rep.	78.76	89.05
4	HK	Hong Kong (China)	77.54	87.32
5	QA	Qatar	76.99	86.54
6	DE	Germany	76.65	86.06
7	IN	India	75.03	83.77
8	SG	Singapore	73.90	82.17
9	CH	Switzerland	72.76	80.55
10	EE	Estonia	71.08	78.17
11	FI	Finland	70.35	77.14
12	SE	Sweden	70.27	77.03
13	DK	Denmark	70.24	76.98
14	NO	Norway	68.88	75.06
15	IE	Ireland	65.59	70.40
16	GB	United Kingdom	61.77	64.99
17	NL	Netherlands	54.61	54.84
18	CA	Canada	49.64	47.80
19	US	United States of America	47.34	44.55
20	CN	China	15.89	0.00

Source: CIA. (2013). ; Hong Kong Government Yearbook. (2011).; Hong Kong Government Fact sheets. (2012); Freedom House. (2011).; Freedom House. (2012); StatCounter GlobalStats. (2011)., and StatCounter GlobalStats. (2012).

Appendix 4: Country/ Economy Profile of the Selected 20 Countries

Switzerland (CH)	2011 Score (0-100) (Collected)	2011 Score (0-100) (Removed Media Indicator)	2012 Score (0-100) (Collected)	2012 Score (0-100) (Removed Media Indicator)
Key Indicators				
Population (millions)	**7.6**	**7.6**	**7.8**	**7.8**
GDP per capita, PPP$	**45,116.9**	**45,116.9**	**43,508.6**	**43,508.6**
GDP (US$ billion)	**491.9**	**491.9**	**665.9**	**665.9**
Innovation index	**61.3**	**59.5**	**61.8**	**60.4**
Innovation output sub-index	**60.3**	**58.8**	**61.4**	**60.6**
Innovation input sub-index	**62.4**	**60.1**	**62.2**	**60.3**
Innovation efficiency index	**1.0**	**1.0**	**1.0**	**1.0**
1. Institutions	**87.5**	**87.5**	**85.7**	**85.7**
1.1. Political environment	**97.9**	**97.9**	**93.1**	**93.1**
1.1.1 Political Stability	96.2	96.2	94.2	94.2
1.1.2 Government effectiveness	97.4	97.4	87.7	87.7
1.1.3 Press freedom	100.0	100.0	97.4	97.4
1.2. Regulatory environment	**91.9**	**91.9**	**91.1**	**91.1**
1.2.1 Regulatory quality	94.6	94.6	92.9	92.9
1.2.2 Rule of law	94.7	94.7	93.4	93.4
1.2.3 Cost of redundancy dismissal	89.1	89.1	89.1	89.1
1.3. Business environment	**72.8**	**72.8**	**72.8**	**72.8**
1.3.1 Ease of starting a business	54.4	54.4	54.4	54.4
1.3.2 Ease of resolving insolvency	70.7	70.7	70.7	70.7
1.3.3 Ease of paying taxes	93.3	93.3	93.3	93.3
2. Human capital and research	**58.6**	**58.6**	**58.9**	**58.9**
2.1. Education	**66.3**	**66.3**	**66.8**	**66.8**
2.1.1 Expenditure on education	50.9	50.9	53.1	53.1
2.1.2 Public expenditure on education per pupil	75.7	75.7	81.4	81.4
2.1.3 School life expentancy	68.0	68.0	61.8	61.8
2.1.4 Assessment in reading, mathematics, and	75.2	75.2	75.2	75.2
2.1.5 Pupil-teacher ratio	n/a	n/a	n/a	n/a
2.2. Tertiary education	**32.7**	**32.7**	**32.7**	**32.7**
2.2.1 Tertiary school enrolment	44.6	44.6	44.2	44.2
2.2.2 Graduates in science and engineering	24.9	24.9	24.9	24.9
2.2.3 Tertiary inbound mobility	38.3	38.3	38.3	38.3
2.2.4 Gross tertiary outbound enrolment	31.1	31.1	31.1	31.1
2.3. Research and development (R&D)	**76.7**	**76.7**	**77.2**	**77.2**
2.3.1 Researchers	57.2	57.2	57.8	57.8
2.3.2 Gross expenditure on R&D (GERD)	72.8	72.8	73.8	73.8
2.3.3 Quality of research institutions	100.0	100.0	100.0	100.0
3. Infrastructure	**58.3**	**46.8**	**60.1**	**50.5**
3.1. Information & Communication	**53.2**	**18.6**	**58.6**	**29.7**
3.1.1 ICT access	95.4	0.0	94.6	0.0
3.1.2 ICT use	80.2	0.0	80.3	0.0
3.1.3 Government's online service	23.3	23.3	35.3	35.3
3.1.4 E-participation	14.0	14.0	24.1	24.1
3.2. General infrastructure	**48.4**	**48.6**	**48.6**	**48.6**
3.2.1 Electricity output	29.7	31.7	31.7	31.7
3.2.2 Electricity consumption	32.5	31.4	31.4	31.4
3.2.3 Trade and transport-related infrastructure	91.4	91.4	91.4	91.4
3.2.4 Gross capital formation	22.8	22.8	22.8	22.8
3.3. Ecological sustainability	**73.2**	**73.2**	**73.2**	**73.2**
3.3.1 GDP per unit of energy use	59.7	59.7	59.7	59.7
3.3.2 Environmental performance	100.0	100.0	100.0	100.0
3.3.3 ISO 14001 environmental certificates	59.8	59.8	59.8	59.8

4. Market sophistication	**53.0**	**53.0**	**53.0**	**53.0**
4.1. Credit	**78.9**	**78.9**	**78.9**	**78.9**
4.1.1 Ease of getting credit	84.5	84.5	84.5	84.5
4.1.2 Domestic credit to private sector	73.3	73.3	73.3	73.3
4.1.3 Microfinance institutions' gross loan	n/a	n/a	n/a	n/a
4.2. Investment	**22.3**	**22.3**	**20.0**	**20.0**
4.2.1 Ease of protecting investors	0.0	0.0	0.0	0.0
4.2.2 Market capitalization	26.4	26.4	18.6	18.6
4.2.3 Total value of stocks trade	39.7	39.7	23.1	23.1
4.2.4 Venture capital deals	23.2	23.2	38.1	38.1
4.3. Trade and competition	**57.7**	**57.7**	**60.2**	**60.2**
4.3.1 Applied tariff rate	100.0	100.0	100.0	100.0
4.3.2 Market access for non-agricultural exports	52.5	52.5	52.5	52.5
4.3.3 Import of goods and services	14.2	14.2	12.9	12.9
4.3.4 Exports of goods and services	19.3	19.3	19.5	19.5
4.3.5 Intensity of local competition	61.6	61.6	72.2	72.2
5. Business sophistication	**54.5**	**54.5**	**53.2**	**53.2**
5.1. Knowledge workers	**72.4**	**72.4**	**70.9**	**70.9**
5.1.1 Employment in knowledge-intensive	91.1	91.1	91.1	91.1
5.1.2 Firms offering formal training	n/a	n/a	n/a	n/a
5.1.3 GERD performed by business enterprise	84.2	84.2	84.6	84.6
5.1.4 GERD financed by business enterprise	79.0	79.0	69.6	69.6
5.1.5 GMAT mean score	68.2	68.2	68.2	68.2
5.1.6 GMAT test takers	20.7	20.7	20.7	20.7
5.2. Innovation linkages	**65.1**	**65.1**	**69.1**	**69.1**
5.2.1 University/ industry research collaboration	96.9	96.9	100.0	100.0
5.2.2 State of cluster development	79.6	79.6	71.7	71.7
5.2.3 GERD financed by abroad	29.8	29.8	32.8	32.8
5.2.4 Joint venture/ strategic alliance deals	30.2	30.2	66.2	66.2
5.2.5 Share of patents with foreign inventor	77.8	77.8	77.8	77.8
5.3. Knowledge absorption	**25.9**	**25.9**	**19.5**	**19.5**
5.3.1 Royalty and license fees payments	n/a	n/a	n/a	n/a
5.3.2 High-tech imports	21.4	21.4	21.4	21.4
5.3.3 Computer and communications service	33.8	33.8	33.8	33.8
5.3.4 Foreign direct investment net inflows	22.5	22.5	3.3	3.3
6. Knowledge and technology outputs	**54.5**	**49.2**	**55.3**	**51.3**
6.1. Knowledge creation	**68.4**	**52.6**	**76.0**	**64.1**
6.1.1 National office patent applications	5.2	5.2	28.1	28.1
6.1.2 Patent Cooperation Treaty applications	100.0	100.0	100.0	100.0
6.1.3 National office utility model applications	n/a	n/a	n/a	n/a
6.1.4 Scientific and Technical Journal Articles	100.0	0.0	100.0	0.0
6.2. Knowledge impact	**57.0**	**57.0**	**52.0**	**52.0**
6.2.1 Growth rate of GDP per person engaged	29.9	29.9	17.5	17.5
6.2.2 New business density	25.0	25.0	25.0	25.0
6.2.3 Total computer software spending	100.0	100.0	100.0	100.0
6.2.4 ISO 9001 quality certificates	100.0	100.0	100.0	100.0
6.3. Knowledge diffusion	**38.2**	**38.2**	**37.9**	**37.9**
6.3.1 Royalty and license fees receipts	n/a	n/a	n/a	n/a
6.3.2 High-tech exports	59.1	59.1	59.1	59.1
6.3.3 Computer and communications service	32.9	32.9	32.9	32.9
6.3.4 Foreign direct investment net outflows	22.5	22.5	21.8	21.8
7. Creative outputs	**66.1**	**68.4**	**67.6**	**69.9**
7.1. Creative intangibles	**67.9**	**67.9**	**70.7**	**70.7**
7.1.1 National office trademark registrations	35.7	35.7	79.5	79.5
7.1.2 Madrid Agreement trademark registrations	100.0	100.0	100.0	100.0
7.1.3 ICT and business model creation	72.0	72.0	70.1	70.1
7.1.4 ICT and organizational models creation	63.9	63.9	33.2	33.2
7.2. Creative goods and services	**50.8**	**40.8**	**50.8**	**40.8**
7.2.1 Recreation and culture consumption	68.5	68.5	53.4	53.4
7.2.2 National feature films produced	100.0	0.0	100.0	0.0
7.2.3 Daily newspaper circulation	61.6	0.0	61.6	0.0
7.2.4 Creative goods exports	53.7	53.7	68.9	68.9
7.2.5 Creative services exports	0.0	0.0	0.0	0.0
7.3. Creation of online content	**78.0**	**97.2**	**78.0**	**97.2**
7.3.1 Generic top-level domains (gTLDs)	100.0	100.0	100.0	100.0
7.3.2 Country-code top-level domains (ccTLDs)	94.5	94.5	94.5	94.5
7.3.3 Wikipedia monthly edits	40.9	0.0	40.9	0.0
7.3.4 Video uploads on Youtube	76.8	0.0	76.8	0.0

Sweden (SE)	2011 Score (0-100) (Collected)	2011 Score (0-100) (Removed Media Indicator)	2012 Score (0-100) (Collected)	2012 Score (0-100) (Removed Media Indicator)
Key Indicators				
Population (millions)	**9.3**	**9.3**	**9.4**	**9.4**
GDP per capita, PPP$	**37,904.6**	**37,904.6**	**40,613.8**	**40,613.8**
GDP (US$ billion)	**406.1**	**406.1**	**571.6**	**571.6**
Innovation index	**59.7**	**57.1**	**59.3**	**57.3**
Innovation output sub-index	**54.9**	**51.6**	**53.9**	**50.9**
Innovation input sub-index	**64.6**	**62.7**	**64.6**	**63.7**
Innovation efficiency index	**0.8**	**0.8**	**0.8**	**0.8**
1. Institutions	**86.3**	**86.3**	**84.9**	**84.9**
1.1. Political environment	**96.5**	**96.5**	**92.8**	**92.8**
1.1.1 Political Stability	91.4	91.4	89.8	89.8
1.1.2. Government effectiveness	98.1	98.1	91.7	91.7
1.1.3. Press freedom	100.0	100.0	96.9	96.9
1.2. Regulatory environment	**82.4**	**82.4**	**81.9**	**81.9**
1.2.1. Regulatory quality	96.6	96.6	94.9	94.9
1.2.2. Rule of law	99.4	99.4	99.3	99.3
1.2.3. Cost of redundancy dismissal	66.8	66.8	66.8	66.8
1.3. Business environment	**80.0**	**80.0**	**80.0**	**80.0**
1.3.1. Ease of starting a business	77.8	77.8	77.8	77.8
1.3.2. Ease of resolving insolvency	89.3	89.3	89.3	89.3
1.3.3. Ease of paying taxes	73.0	73.0	73.0	73.0
2. Human capital and research	**69.0**	**69.0**	**63.8**	**63.8**
2.1. Education	**81.3**	**81.3**	**78.9**	**78.9**
2.1.1. Expenditure on education	82.2	82.2	75.9	75.9
2.1.2. Public expenditure on education per pupil	84.5	84.5	89.8	89.8
2.1.3. School life expectancy	69.7	69.7	66.0	66.0
2.1.4. Assessment in reading, mathematics, and science	66.3	66.3	66.3	66.3
2.1.5. Pupil-teacher ratio, secondary	96.3	96.3	90.1	90.1
2.2. Tertiary education	**36.8**	**36.8**	**36.0**	**36.0**
2.2.1. Tertiary enrolment	69.2	69.2	64.8	64.8
2.2.2. Graduates in science and engineering	33.5	33.5	33.5	33.5
2.2.3. Tertiary inbound mobility	16.4	16.4	16.4	16.4
2.2.4. Gross tertiary outbound enrolment	31.6	31.6	31.6	31.6
2.3. Research and development (R&D)	**88.7**	**88.7**	**76.6**	**76.6**
2.3.1. Researchers	78.7	78.7	49.8	49.8
2.3.2. Gross expenditure on R&D (GERD)	100.0	100.0	93.1	93.1
2.3.3. Quality of scientific research institutions	87.6	87.6	86.9	86.9
3. Infrastructure	**64.0**	**54.6**	**68.7**	**64.0**
3.1. Information & Communication Technologies	**68.8**	**40.4**	**80.1**	**65.9**
3.1.1. ICT access	99.0	0.0	92.7	0.0
3.1.2. ICT use	95.4	0.0	96.0	0.0
3.1.3. Government's online service	35.6	35.6	68.6	68.6
3.1.4. E-participation	45.2	45.2	63.2	63.2
3.2. General infrastructure	**53.0**	**53.0**	**55.7**	**55.7**
3.2.1. Electricity output	50.9	50.9	63.7	63.7
3.2.2. Electricity consumption	56.7	56.7	60.5	60.5
3.2.3. Trade and transport-related infrastructure	84.3	84.3	84.3	84.3
3.2.4. Gross capital formation	20.7	20.7	20.7	20.7
3.3. Ecological sustainability	**70.4**	**70.4**	**70.4**	**70.4**
3.3.1. GDP per unit of energy use	30.6	30.6	30.6	30.6
3.3.2. Environmental performance	80.5	80.5	80.5	80.5
3.3.3. ISO 14001 environmental certificates	100.0	100.0	100.0	100.0

4. Market sophistication	**53.7**	**53.7**	**56.7**	**56.7**
4.1. Credit	**60.5**	**60.5**	**60.5**	**60.5**
4.1.1. Ease of getting credit	66.2	66.2	66.2	66.2
4.1.2. Domestic credit to private sector	54.9	54.9	54.9	54.9
4.1.3. Microfinance Institutions' gross loan portfolio	n/a	n/a	n/a	n/a
4.2. Investment	**43.2**	**43.2**	**51.8**	**51.8**
4.2.1. Ease of protecting investors	84.4	84.4	84.4	84.4
4.2.2. Market capitalization	15.5	15.5	9.6	9.6
4.2.3. Total value of stocks traded	12.5	12.5	13.3	13.3
4.2.4. Venture capital deals	60.2	60.2	100.0	100.0
4.3. Trade and competition	**57.4**	**57.4**	**57.6**	**57.6**
4.3.1. Applied tariff rate, weighted mean	94.3	94.3	91.8	91.8
4.3.2. Market access for non-agricultural exports	31.7	31.7	31.7	31.7
4.3.3. Imports of goods and services	14.7	14.7	13.8	13.8
4.3.4. Exports of goods and services	17.8	17.8	17.8	17.8
4.3.5. Intensity of local competition	87.4	87.4	91.1	91.1
5. Business sophistication	**50.0**	**50.0**	**49.0**	**49.0**
5.1. Knowledge workers	**60.7**	**60.7**	**56.9**	**56.9**
5.1.1. Employment in knowledge-intensive services	85.0	85.0	85.0	85.0
5.1.2. Firms offering formal training	n/a	n/a	n/a	n/a
5.1.3. GERD performed by business enterprise	84.6	84.6	80.6	80.6
5.1.4. GERD financed by business enterprise	70.8	70.8	52.3	52.3
5.1.5. GMAT mean score	25.0	25.0	25.0	25.0
5.1.6. GMAT test takers	13.7	13.7	13.7	13.7
5.2. Innovation linkages	**66.3**	**66.3**	**67.6**	**67.6**
5.2.1. University/industry research collaboration	90.4	90.4	89.7	89.7
5.2.2. State of cluster development	88.8	88.8	78.5	78.5
5.2.3. GERD financed by abroad	53.0	53.0	58.7	58.7
5.2.4. Joint venture / strategic alliance deals	28.1	28.1	49.0	49.0
5.2.5. Share of patents with foreign inventor	38.1	38.1	38.1	38.1
5.3. Knowledge absorption	**23.1**	**23.1**	**22.6**	**22.6**
5.3.1. Royalty and license fees payments	2.0	2.0	0.9	0.9
5.3.2. High-tech imports	18.6	18.6	18.6	18.6
5.3.3. Computer and communications service imports	60.5	60.5	60.5	60.5
5.3.4. Foreign direct investment net inflows	11.3	11.3	10.4	10.4
6. Knowledge and technology outputs	**47.8**	**41.7**	**48.8**	**43.6**
6.1. Knowledge creation	**60.2**	**41.9**	**63.0**	**47.4**
6.1.1. National office patent applications	6.6	6.6	17.6	17.6
6.1.2. Patent Cooperation Treaty applications	77.1	77.1	77.1	77.1
6.1.3. National office utility model applications	n/a	n/a	n/a	n/a
6.1.4. Scientific and technical journal articles	96.9	0.0	94.4	0.0
6.2. Knowledge impact	**34.0**	**34.0**	**35.6**	**35.6**
6.2.1. Growth rate of GDP per person engaged	19.8	19.8	25.1	25.1
6.2.2. New business density	20.8	20.8	20.8	20.8
6.2.3. Total computer software spending	69.5	69.5	67.0	67.0
6.2.4. ISO 9001 quality certificates	40.2	40.2	40.2	40.2
6.3. Knowledge diffusion	**49.2**	**49.2**	**47.9**	**47.9**
6.3.1. Royalty and license fees receipts	100.0	100.0	100.0	100.0
6.3.2. High-tech exports	38.0	38.0	38.0	38.0
6.3.3. Computer and communications service exports	32.9	32.9	32.9	32.9
6.3.4. Foreign direct investment net outflows	25.9	25.9	20.6	20.6
7. Creative outputs	**61.9**	**61.4**	**59.0**	**58.1**
7.1. Creative intangibles	**59.7**	**59.7**	**56.2**	**56.2**
7.1.1. National office trademark registrations	31.3	31.3	41.2	41.2
7.1.2. Madrid Agreement trademark registrations	7.4	7.4	7.5	7.5
7.1.3. ICT and business model creation	100.0	100.0	100.0	100.0
7.1.4. ICT and organizational models creation	100.0	100.0	76.0	76.0
7.2. Creative goods and services	**48.7**	**46.4**	**43.9**	**40.1**
7.2.1. Recreation and culture consumption	78.3	78.3	81.8	81.8
7.2.2. National feature films produced	31.5	0.0	31.5	0.0
7.2.3. Daily newspapers circulation	79.3	0.0	79.3	0.0
7.2.4. Creative goods exports	29.0	29.0	36.3	36.3
7.2.5. Creative services exports	32.0	32.0	2.1	2.1
7.3. Creation of online content	**79.6**	**80.0**	**79.6**	**80.0**
7.3.1. Generic top level domains (gTLDs)	73.2	73.2	73.2	73.2
7.3.2. Country-code top level domains (ccTLDs)	86.7	86.7	86.7	86.7
7.3.3. Wikipedia monthly edits	68.8	0.0	68.8	0.0
7.3.4. Video uploads on YouTube	89.8	0.0	89.8	0.0

Singapore (SG)	2011 Score (0-100) (Collected)	2011 Score (0-100) (Removed Media Indicator)	2012 Score (0-100) (Collected)	2012 Score (0-100) (Removed Media Indicator)
Key Indicators				
Population (millions)	**4.8**	**4.8**	**5.3**	**5.3**
GDP per capita, PPP$	**50,632.8**	**50,632.8**	**59,937.0**	**59,937.0**
GDP (US$ billion)	**182.2**	**182.2**	**266.5**	**266.5**
Innovation index	**44.1**	**50.8**	**45.1**	**55.7**
Innovation output sub-index	**36.5**	**34.5**	**44.9**	**42.4**
Innovation input sub-index	**68.0**	**67.2**	**68.5**	**69.0**
Innovation efficiency index	**0.5**	**0.5**	**0.7**	**0.6**
1. Institutions	**92.7**	**92.7**	**92.3**	**92.3**
1.1. Political environment	**81.1**	**81.1**	**80.9**	**80.9**
1.1.1 Political Stability	93.5	93.5	91.2	91.2
1.1.2. Government effectiveness	100.0	100.0	100.0	100.0
1.1.3. Press freedom	49.8	49.8	51.6	51.6
1.2. Regulatory environment	**97.6**	**97.6**	**96.8**	**96.8**
1.2.1. Regulatory quality	100.0	100.0	97.2	97.2
1.2.2. Rule of law	90.6	90.6	90.2	90.2
1.2.3. Cost of redundancy dismissal	100.0	100.0	100.0	100.0
1.3. Business environment	**99.3**	**99.3**	**99.3**	**99.3**
1.3.1. Ease of starting a business	98.9	98.9	98.9	98.9
1.3.2. Ease of resolving insolvency	100.0	100.0	100.0	100.0
1.3.3. Ease of paying taxes	98.9	98.9	98.9	98.9
2. Human capital and research	**60.4**	**60.4**	**59.3**	**59.3**
2.1. Education	**55.7**	**55.7**	**53.7**	**53.7**
2.1.1. Expenditure on education	21.7	21.7	21.8	21.8
2.1.2. Public expenditure on education per pupil	n/a	n/a	n/a	n/a
2.1.3. School life expectancy	n/a	n/a	n/a	n/a
2.1.4. Assessment in reading, mathematics, and science	86.0	86.0	86.0	86.0
2.1.5. Pupil-teacher ratio, secondary	74.4	74.4	69.4	69.4
2.2. Tertiary education	**58.5**	**58.5**	**58.5**	**58.5**
2.2.1. Tertiary enrolment	n/a	n/a	n/a	n/a
2.2.2. Graduates in science and engineering	n/a	n/a	n/a	n/a
2.2.3. Tertiary inbound mobility	58.5	58.5	58.5	58.5
2.2.4. Gross tertiary outbound enrolment	n/a	n/a	n/a	n/a
2.3. Research and development (R&D)	**66.9**	**66.9**	**65.6**	**65.6**
2.3.1. Researchers	69.4	69.4	66.9	66.9
2.3.2. Gross expenditure on R&D (GERD)	60.6	60.6	63.2	63.2
2.3.3. Quality of scientific research institutions	70.7	70.7	66.7	66.7
3. Infrastructure	**55.4**	**51.2**	**60.0**	**62.7**
3.1. Information & Communication Technologies	**74.8**	**62.1**	**89.1**	**97.1**
3.1.1. ICT access	88.5	0.0	86.2	0.0
3.1.2. ICT use	86.5	0.0	75.8	0.0
3.1.3. Government's online service	57.5	57.5	100.0	100.0
3.1.4. E-participation	66.7	66.7	94.3	94.3
3.2. General infrastructure	**53.5**	**53.5**	**53.1**	**53.1**
3.2.1. Electricity output	29.4	29.4	30.5	30.5
3.2.2. Electricity consumption	32.9	32.9	29.9	29.9
3.2.3. Trade and transport-related infrastructure	93.9	93.9	93.9	93.9
3.2.4. Gross capital formation	35.3	35.3	35.3	35.3
3.3. Ecological sustainability	**37.9**	**37.9**	**37.9**	**37.9**
3.3.1. GDP per unit of energy use	44.2	44.2	44.2	44.2
3.3.2. Environmental performance	49.8	49.8	49.8	49.8
3.3.3. ISO 14001 environmental certificates	19.8	19.8	19.8	19.8

4. Market sophistication	**64.3**	**64.3**	**62.2**	**62.2**
4.1. Credit	**64.6**	**64.6**	**64.6**	**64.6**
4.1.1. Ease of getting credit	94.4	94.4	94.4	94.4
4.1.2. Domestic credit to private sector	34.8	34.8	34.8	34.8
4.1.3. Microfinance Institutions' gross loan portfolio	n/a	n/a	n/a	n/a
4.2. Investment	**40.6**	**40.6**	**36.9**	**36.9**
4.2.1. Ease of protecting investors	100.0	100.0	100.0	100.0
4.2.2. Market capitalization	26.1	26.1	12.9	12.9
4.2.3. Total value of stocks traded	18.1	18.1	17.6	17.6
4.2.4. Venture capital deals	18.4	18.4	17.1	17.1
4.3. Trade and competition	**87.7**	**87.7**	**85.2**	**85.2**
4.3.1. Applied tariff rate, weighted mean	100.0	100.0	100.0	100.0
4.3.2. Market access for non-agricultural exports	84.5	84.5	84.5	84.5
4.3.3. Imports of goods and services	100.0	100.0	82.9	82.9
4.3.4. Exports of goods and services	100.0	100.0	94.3	94.3
4.3.5. Intensity of local competition	66.3	66.3	67.5	67.5
5. Business sophistication	**67.5**	**67.5**	**68.4**	**68.4**
5.1. Knowledge workers	**83.6**	**83.6**	**84.2**	**84.2**
5.1.1. Employment in knowledge-intensive services	100.0	100.0	100.0	100.0
5.1.2. Firms offering formal training	n/a	n/a	n/a	n/a
5.1.3. GERD performed by business enterprise	74.4	74.4	82.4	82.4
5.1.4. GERD financed by business enterprise	64.9	64.9	60.8	60.8
5.1.5. GMAT mean score	100.0	100.0	100.0	100.0
5.1.6. GMAT test takers	62.2	62.2	62.2	62.2
5.2. Innovation linkages	**73.3**	**73.3**	**69.6**	**69.6**
5.2.1. University/industry research collaboration	86.6	86.6	87.7	87.7
5.2.2. State of cluster development	100.0	100.0	90.9	90.9
5.2.3. GERD financed by abroad	24.6	24.6	29.1	29.1
5.2.4. Joint venture / strategic alliance deals	88.3	88.3	65.8	65.8
5.2.5. Share of patents with foreign inventor	75.9	75.9	75.9	75.9
5.3. Knowledge absorption	**45.5**	**45.5**	**51.3**	**51.3**
5.3.1. Royalty and license fees payments	41.2	41.2	38.5	38.5
5.3.2. High-tech imports	69.0	69.0	69.0	69.0
5.3.3. Computer and communications service imports	34.7	34.7	34.7	34.7
5.3.4. Foreign direct investment net inflows	37.0	37.0	63.0	63.0
6. Knowledge and technology outputs	**32.6**	**28.0**	**46.2**	**41.3**
6.1. Knowledge creation	**23.1**	**9.3**	**24.3**	**9.4**
6.1.1. National office patent applications	2.7	2.7	3.0	3.0
6.1.2. Patent Cooperation Treaty applications	15.9	15.9	15.9	15.9
6.1.3. National office utility model applications	n/a	n/a	n/a	n/a
6.1.4. Scientific and technical journal articles	50.8	0.0	54.2	0.0
6.2. Knowledge impact	**21.6**	**21.6**	**57.2**	**57.2**
6.2.1. Growth rate of GDP per person engaged	0.0	0.0	91.9	91.9
6.2.2. New business density	38.2	38.2	38.2	38.2
6.2.3. Total computer software spending	36.7	36.7	31.2	31.2
6.2.4. ISO 9001 quality certificates	33.1	33.1	33.1	33.1
6.3. Knowledge diffusion	**53.1**	**53.1**	**57.1**	**57.1**
6.3.1. Royalty and license fees receipts	63.5	63.5	62.5	62.5
6.3.2. High-tech exports	100.0	100.0	100.0	100.0
6.3.3. Computer and communications service exports	38.1	38.1	38.1	38.1
6.3.4. Foreign direct investment net outflows	10.8	10.8	27.9	27.9
7. Creative outputs	**40.5**	**41.0**	**43.5**	**43.5**
7.1. Creative intangibles	**42.2**	**42.2**	**51.8**	**51.8**
7.1.1. National office trademark registrations	4.3	4.3	14.1	14.1
7.1.2. Madrid Agreement trademark registrations	6.1	6.1	6.0	6.0
7.1.3. ICT and business model creation	79.4	79.4	86.9	86.9
7.1.4. ICT and organizational models creation	78.8	78.8	100.0	100.0
7.2. Creative goods and services	**35.2**	**39.0**	**28.3**	**29.7**
7.2.1. Recreation and culture consumption	100.0	100.0	61.3	61.3
7.2.2. National feature films produced	6.0	0.0	6.0	0.0
7.2.3. Daily newspapers circulation	41.8	0.0	41.8	0.0
7.2.4. Creative goods exports	16.0	16.0	27.2	27.2
7.2.5. Creative services exports	1.1	1.1	0.6	0.6
7.3. Creation of online content	**42.3**	**40.7**	**42.3**	**40.7**
7.3.1. Generic top level domains (gTLDs)	22.6	22.6	22.6	22.6
7.3.2. Country-code top level domains (ccTLDs)	58.9	58.9	58.9	58.9
7.3.3. Wikipedia monthly edits	6.3	0.0	6.3	0.0
7.3.4. Video uploads on YouTube	81.4	0.0	81.4	0.0

Hong Kong, China (HK)	2011 Score (0-100) (Collected)	2011 Score (0-100) (Removed Media Indicator)	2012 Score (0-100) (Collected)	2012 Score (0-100) (Removed Media Indicator)
Key Indicators				
Population (millions)	**7.1**	**7.1**	**7.2**	**7.2**
GDP per capita, PPP$	**44,303.8**	**44,303.8**	**49,342.0**	**49,342.0**
GDP (US$ billion)	**215.4**	**215.4**	**246.9**	**246.9**
Innovation index	55.0	**53.4**	**54.6**	**52.9**
Innovation output sub-index	41.6	40.9	**41.4**	**40.4**
Innovation input sub-index	68.3	66.0	**67.8**	**65.3**
Innovation efficiency index	0.6	0.6	**0.6**	**0.6**
1. Institutions	**94.0**	**94.0**	**91.6**	**91.6**
1.1. Political environment	**88.9**	**88.9**	**82.4**	**82.4**
1.1.1 Political Stability	83.8	83.8	84.1	84.1
1.1.2. Government effectiveness	94.2	94.2	81.6	81.6
1.1.3. Press freedom	88.6	88.6	81.6	81.6
1.2. Regulatory environment	**96.9**	**96.9**	**96.4**	**96.4**
1.2.1. Regulatory quality	99.5	99.5	99.7	99.7
1.2.2. Rule of law	88.2	88.2	85.7	85.7
1.2.3. Cost of redundancy dismissal	100.0	100.0	100.0	100.0
1.3. Business environment	**96.1**	**96.1**	**96.1**	**96.1**
1.3.1. Ease of starting a business	97.8	97.8	97.8	97.8
1.3.2. Ease of resolving insolvency	90.7	90.7	90.7	90.7
1.3.3. Ease of paying taxes	100.0	100.0	100.0	100.0
2. Human capital and research	**45.1**	**45.1**	**43.4**	**43.4**
2.1. Education	**56.6**	**56.6**	**50.1**	**50.1**
2.1.1. Expenditure on education	21.2	21.2	22.5	22.5
2.1.2. Public expenditure on education per pupil	62.0	62.0	38.7	38.7
2.1.3. School life expectancy	71.4	71.4	62.3	62.3
2.1.4. Assessment in reading, mathematics, and science	87.0	87.0	87.0	87.0
2.1.5. Pupil-teacher ratio, secondary	n/a	n/a	58.3	58.3
2.2. Tertiary education	**59.7**	**59.7**	**59.8**	**59.8**
2.2.1. Tertiary enrolment	52.8	52.8	53.0	53.0
2.2.2. Graduates in science and engineering	67.9	67.9	67.9	67.9
2.2.3. Tertiary inbound mobility	10.0	10.0	10.0	10.0
2.2.4. Gross tertiary outbound enrolment	100.0	100.0	100.0	100.0
2.3. Research and development (R&D)	**19.0**	**19.0**	**20.5**	**20.5**
2.3.1. Researchers	28.5	28.5	30.8	30.8
2.3.2. Gross expenditure on R&D (GERD)	5.8	5.8	5.0	5.0
2.3.3. Quality of scientific research institutions	22.7	22.7	25.7	25.7
3. Infrastructure	**65.2**	**53.5**	**65.9**	**53.5**
3.1. Information & Communication Technologies	**88.7**	**0.0**	**90.8**	**0.0**
3.1.1. ICT access	100.0	0.0	100.0	0.0
3.1.2. ICT use	77.5	0.0	81.5	0.0
3.1.3. Government's online service	n/a	n/a	n/a	n/a
3.1.4. E-participation	n/a	n/a	n/a	n/a
3.2. General infrastructure	**46.0**	**46.0**	**46.1**	**46.1**
3.2.1. Electricity output	17.58	17.6	19.2	19.2
3.2.2. Electricity consumption	22.88	22.9	21.7	21.7
3.2.3. Trade and transport-related infrastructure	82.83	82.8	82.8	82.8
3.2.4. Gross capital formation	34.93	34.9	34.9	34.9
3.3. Ecological sustainability	**61.0**	**61.0**	**61.0**	**61.0**
3.3.1. GDP per unit of energy use	100.0	100.0	100.0	100.0
3.3.2. Environmental performance	n/a	n/a	n/a	n/a
3.3.3. ISO 14001 environmental certificates	22.0	22.0	22.0	22.0

4. Market sophistication	**77.2**	**77.2**	**79.6**	**79.6**
4.1. Credit	**89.0**	**89.0**	**89.0**	**89.0**
4.1.1. Ease of getting credit	97.2	97.2	97.2	97.2
4.1.2. Domestic credit to private sector	80.9	80.9	80.9	80.9
4.1.3. Microfinance Institutions' gross loan portfolio	n/a	n/a	n/a	n/a
4.2. Investment	**77.2**	**77.2**	**78.4**	**78.4**
4.2.1. Ease of protecting investors	100.0	100.0	100.0	100.0
4.2.2. Market capitalization	100.0	100.0	100.0	100.0
4.2.3. Total value of stocks traded	100.0	100.0	100.0	100.0
4.2.4. Venture capital deals	8.8	8.8	13.4	13.4
4.3. Trade and competition	**65.4**	**65.4**	**71.3**	**71.3**
4.3.1. Applied tariff rate, weighted mean	100.0	100.0	100.0	100.0
4.3.2. Market access for non-agricultural exports	0.0	0.0	0.0	0.0
4.3.3. Imports of goods and services	99.5	99.5	100.0	100.0
4.3.4. Exports of goods and services	96.1	96.1	100.0	100.0
4.3.5. Intensity of local competition	63.7	63.7	85.2	85.2
5. Business sophistication	**60.1**	**60.1**	**58.2**	**58.2**
5.1. Knowledge workers	**66.6**	**66.6**	**60.2**	**60.2**
5.1.1. Employment in knowledge-intensive services	65.5	65.5	65.5	65.5
5.1.2. Firms offering formal training	n/a	n/a	n/a	n/a
5.1.3. GERD performed by business enterprise	54.3	54.3	43.1	43.1
5.1.4. GERD financed by business enterprise	54.9	54.9	27.8	27.8
5.1.5. GMAT mean score	79.9	79.9	79.9	79.9
5.1.6. GMAT test takers	79.3	79.3	79.3	79.3
5.2. Innovation linkages	**62.7**	**62.7**	**63.5**	**63.5**
5.2.1. University/industry research collaboration	53.3	53.3	58.9	58.9
5.2.2. State of cluster development	83.2	83.2	70.3	70.3
5.2.3. GERD financed by abroad	22.1	22.1	33.6	33.6
5.2.4. Joint venture / strategic alliance deals	84.6	84.6	82.2	82.2
5.2.5. Share of patents with foreign inventor	100.0	100.0	100.0	100.0
5.3. Knowledge absorption	**51.0**	**51.0**	**50.9**	**50.9**
5.3.1. Royalty and license fees payments	4.0	4.0	3.8	3.8
5.3.2. High-tech imports	100.0	100.0	100.0	100.0
5.3.3. Computer and communications service imports	0.0	0.0	0.0	0.0
5.3.4. Foreign direct investment net inflows	100.0	100.0	100.0	100.0
6. Knowledge and technology outputs	**28.5**	**28.5**	**29.9**	**29.9**
6.1. Knowledge creation	**1.6**	**1.6**	**1.4**	**1.4**
6.1.1. National office patent applications	0.0	0.0	0.0	0.0
6.1.2. Patent Cooperation Treaty applications	n/a	n/a	n/a	n/a
6.1.3. National office utility model applications	3.3	3.3	2.7	2.7
6.1.4. Scientific and technical journal articles	n/a	0.0	n/a	0.0
6.2. Knowledge impact	**37.9**	**37.9**	**42.8**	**42.8**
6.2.1. Growth rate of GDP per person engaged	26.1	26.1	37.3	37.3
6.2.2. New business density	100.0	100.0	100.0	100.0
6.2.3. Total computer software spending	7.8	7.8	10.1	10.1
6.2.4. ISO 9001 quality certificates	29.4	29.4	29.4	29.4
6.3. Knowledge diffusion	**45.9**	**45.9**	**45.5**	**45.5**
6.3.1. Royalty and license fees receipts	14.8	14.8	13.2	13.2
6.3.2. High-tech exports	44.8	44.8	44.8	44.8
6.3.3. Computer and communications service exports	24.1	24.1	24.1	24.1
6.3.4. Foreign direct investment net outflows	100.0	100.0	100.0	100.0
7. Creative outputs	**54.8**	**53.3**	**52.9**	**50.9**
7.1. Creative intangibles	**51.2**	**51.2**	**49.8**	**49.8**
7.1.1. National office trademark registrations	26.3	26.3	38.2	38.2
7.1.2. Madrid Agreement trademark registrations	n/a	n/a	n/a	n/a
7.1.3. ICT and business model creation	62.1	62.1	70.1	70.1
7.1.4. ICT and organizational models creation	65.1	65.1	41.0	41.0
7.2. Creative goods and services	**57.9**	**55.4**	**53.1**	**48.9**
7.2.1. Recreation and culture consumption	65.3	65.3	46.2	46.2
7.2.2. National feature films produced	66.3	0.0	66.3	0.0
7.2.3. Daily newspapers circulation	64.6	0.0	64.6	0.0
7.2.4. Creative goods exports	100.0	100.0	100.0	100.0
7.2.5. Creative services exports	1.0	1.0	0.5	0.5
7.3. Creation of online content	**58.9**	**55.3**	**58.9**	**55.3**
7.3.1. Generic top level domains (gTLDs)	50.9	50.9	50.9	50.9
7.3.2. Country-code top level domains (ccTLDs)	59.7	59.7	59.7	59.7
7.3.3. Wikipedia monthly edits	42.8	0.0	42.8	0.0
7.3.4. Video uploads on YouTube	82.3	0.0	82.3	0.0

Finland (FI)	2011 Score (0-100) (Collected)	2011 Score (0-100) (Removed Media Indicator)	2012 Score (0-100) (Collected)	2012 Score (0-100) (Removed Media Indicator)
Key Indicators				
Population (millions)	**5.3**	**5.3**	**5.4**	**5.4**
GDP per capita, PPP$	**34,719.7**	**34,719.7**	**36,723.3**	**36,723.3**
GDP (US$ billion)	**238.0**	**238.0**	**270.6**	**270.6**
Innovation index	53.0	**49.5**	**55.3**	**52.4**
Innovation output sub-index	44.8	39.5	**48.3**	**42.9**
Innovation input sub-index	61.1	59.6	**62.3**	**61.9**
Innovation efficiency index	0.7	0.7	**0.8**	**0.7**
1. Institutions	**91.6**	**91.6**	**91.7**	**91.7**
1.1. Political environment	**99.6**	**99.6**	**99.9**	**99.9**
1.1.1 Political Stability	100.0	100.0	100.0	100.0
1.1.2. Government effectiveness	98.7	98.7	99.6	99.6
1.1.3. Press freedom	100.0	100.0	100.0	100.0
1.2. Regulatory environment	**93.9**	**93.9**	**94.1**	**94.1**
1.2.1. Regulatory quality	97.5	97.5	98.3	98.3
1.2.2. Rule of law	100.0	100.0	100.0	100.0
1.2.3. Cost of redundancy dismissal	89.1	89.1	89.1	89.1
1.3. Business environment	**81.2**	**81.2**	**81.2**	**81.2**
1.3.1. Ease of starting a business	81.1	81.1	81.1	81.1
1.3.2. Ease of resolving insolvency	97.3	97.3	97.3	97.3
1.3.3. Ease of paying taxes	65.2	65.2	65.2	65.2
2. Human capital and research	**70.4**	**70.4**	**68.8**	**68.8**
2.1. Education	**81.1**	**81.1**	**78.4**	**78.4**
2.1.1. Expenditure on education	68.5	68.5	66.4	66.4
2.1.2. Public expenditure on education per pupil	69.5	69.5	73.9	73.9
2.1.3. School life expectancy	89.2	89.2	80.2	80.2
2.1.4. Assessment in reading, mathematics, and science	86.2	86.2	86.2	86.2
2.1.5. Pupil-teacher ratio, secondary	94.8	94.8	89.0	89.0
2.2. Tertiary education	**45.5**	**45.5**	**43.7**	**43.7**
2.2.1. Tertiary enrolment	95.8	95.8	86.9	86.9
2.2.2. Graduates in science and engineering	46.6	46.6	46.6	46.6
2.2.3. Tertiary inbound mobility	10.9	10.9	10.9	10.9
2.2.4. Gross tertiary outbound enrolment	27.6	27.6	27.6	27.6
2.3. Research and development (R&D)	**84.6**	**84.6**	**84.2**	**84.2**
2.3.1. Researchers	100.0	100.0	100.0	100.0
2.3.2. Gross expenditure on R&D (GERD)	90.7	90.7	100.0	100.0
2.3.3. Quality of scientific research institutions	63.1	63.1	52.7	52.7
3. Infrastructure	**51.6**	**44.0**	**60.0**	**58.2**
3.1. Information & Communication Technologies	**55.7**	**32.7**	**78.8**	**73.3**
3.1.1. ICT access	79.5	0.0	78.3	0.0
3.1.2. ICT use	77.9	0.0	90.2	0.0
3.1.3. Government's online service	28.8	28.8	76.5	76.5
3.1.4. E-participation	36.6	36.6	70.1	70.1
3.2. General infrastructure	**54.3**	**54.3**	**56.4**	**56.4**
3.2.1. Electricity output	47.3	47.3	57.9	57.9
3.2.2. Electricity consumption	62.6	62.6	64.4	64.4
3.2.3. Trade and transport-related infrastructure	86.9	86.9	86.9	86.9
3.2.4. Gross capital formation	21.1	21.1	21.1	21.1
3.3. Ecological sustainability	**44.9**	**44.9**	**44.9**	**44.9**
3.3.1. GDP per unit of energy use	20.2	20.2	20.2	20.2
3.3.2. Environmental performance	69.7	69.7	69.7	69.7
3.3.3. ISO 14001 environmental certificates	44.8	44.8	44.8	44.8

4. Market sophistication	**41.6**	**41.6**	**39.9**	**39.9**
4.1. Credit	**51.4**	**51.4**	**51.4**	**51.4**
4.1.1. Ease of getting credit	71.8	71.8	71.8	71.8
4.1.2. Domestic credit to private sector	30.9	30.9	30.9	30.9
4.1.3. Microfinance Institutions' gross loan portfolio	n/a	n/a	n/a	n/a
4.2. Investment	**27.2**	**27.2**	**26.2**	**26.2**
4.2.1. Ease of protecting investors	65.6	65.6	65.6	65.6
4.2.2. Market capitalization	4.2	4.2	3.1	3.1
4.2.3. Total value of stocks traded	4.8	4.8	5.8	5.8
4.2.4. Venture capital deals	34.3	34.3	30.3	30.3
4.3. Trade and competition	**46.3**	**46.3**	**42.2**	**42.2**
4.3.1. Applied tariff rate, weighted mean	94.3	94.3	91.8	91.8
4.3.2. Market access for non-agricultural exports	31.7	31.7	31.7	31.7
4.3.3. Imports of goods and services	11.1	11.1	11.4	11.4
4.3.4. Exports of goods and services	12.5	12.5	13.2	13.2
4.3.5. Intensity of local competition	47.4	47.4	33.1	33.1
5. Business sophistication	**50.3**	**50.3**	**50.9**	**50.9**
5.1. Knowledge workers	**59.6**	**59.6**	**58.2**	**58.2**
5.1.1. Employment in knowledge-intensive services	83.5	83.5	83.5	83.5
5.1.2. Firms offering formal training	n/a	n/a	n/a	n/a
5.1.3. GERD performed by business enterprise	82.2	82.2	81.3	81.3
5.1.4. GERD financed by business enterprise	76.8	76.8	69.4	69.4
5.1.5. GMAT mean score	20.3	20.3	20.3	20.3
5.1.6. GMAT test takers	11.0	11.0	11.0	11.0
5.2. Innovation linkages	**69.0**	**69.0**	**68.9**	**68.9**
5.2.1. University/industry research collaboration	94.3	94.3	92.1	92.1
5.2.2. State of cluster development	98.5	98.5	100.0	100.0
5.2.3. GERD financed by abroad	37.1	37.1	36.6	36.6
5.2.4. Joint venture / strategic alliance deals	49.8	49.8	51.6	51.6
5.2.5. Share of patents with foreign inventor	42.5	42.5	42.5	42.5
5.3. Knowledge absorption	**22.5**	**22.5**	**25.5**	**25.5**
5.3.1. Royalty and license fees payments	2.6	2.6	2.1	2.1
5.3.2. High-tech imports	8.7	8.7	8.7	8.7
5.3.3. Computer and communications service imports	78.5	78.5	78.5	78.5
5.3.4. Foreign direct investment net inflows	0.0	0.0	12.5	12.5
6. Knowledge and technology outputs	**42.1**	**37.8**	**45.7**	**41.3**
6.1. Knowledge creation	**48.6**	**35.6**	**51.8**	**38.5**
6.1.1. National office patent applications	10.3	10.3	19.6	19.6
6.1.2. Patent Cooperation Treaty applications	89.1	89.1	89.1	89.1
6.1.3. National office utility model applications	7.4	7.4	6.9	6.9
6.1.4. Scientific and technical journal articles	87.4	0.0	91.7	0.0
6.2. Knowledge impact	**29.2**	**29.2**	**32.2**	**32.2**
6.2.1. Growth rate of GDP per person engaged	22.7	22.7	23.5	23.5
6.2.2. New business density	17.0	17.0	17.0	17.0
6.2.3. Total computer software spending	56.3	56.3	69.7	69.7
6.2.4. ISO 9001 quality certificates	27.4	27.4	27.4	27.4
6.3. Knowledge diffusion	**48.6**	**48.6**	**53.2**	**53.2**
6.3.1. Royalty and license fees receipts	62.6	62.6	73.1	73.1
6.3.2. High-tech exports	26.4	26.4	26.4	26.4
6.3.3. Computer and communications service exports	100.0	100.0	100.0	100.0
6.3.4. Foreign direct investment net outflows	5.3	5.3	13.2	13.2
7. Creative outputs	**47.5**	**41.2**	**50.8**	**44.6**
7.1. Creative intangibles	**39.7**	**39.7**	**46.0**	**46.0**
7.1.1. National office trademark registrations	12.5	12.5	44.7	44.7
7.1.2. Madrid Agreement trademark registrations	9.8	9.8	11.2	11.2
7.1.3. ICT and business model creation	63.0	63.0	74.3	74.3
7.1.4. ICT and organizational models creation	73.4	73.4	53.9	53.9
7.2. Creative goods and services	**40.7**	**34.3**	**41.4**	**35.2**
7.2.1. Recreation and culture consumption	90.5	90.5	80.2	80.2
7.2.2. National feature films produced	31.4	0.0	31.4	0.0
7.2.3. Daily newspapers circulation	88.5	0.0	88.5	0.0
7.2.4. Creative goods exports	12.4	12.4	13.2	13.2
7.2.5. Creative services exports	0.1	0.1	12.1	12.1
7.3. Creation of online content	**69.8**	**51.1**	**69.8**	**51.1**
7.3.1. Generic top level domains (gTLDs)	30.9	30.9	30.9	30.9
7.3.2. Country-code top level domains (ccTLDs)	71.2	71.2	71.2	71.2
7.3.3. Wikipedia monthly edits	77.1	0.0	77.1	0.0
7.3.4. Video uploads on YouTube	100.0	0.0	100.0	0.0

Denmark (DK)	2011 Score (0-100) (Collected)	2011 Score (0-100) (Removed Media Indicator)	2012 Score (0-100) (Collected)	2012 Score (0-100) (Removed Media Indicator)
Key Indicators				
Population (millions)	**5.5**	**5.5**	**5.5**	**5.5**
GDP per capita, PPP$	**36,761.7**	**36,761.7**	**37,741.9**	**37,741.9**
GDP (US$ billion)	**309.6**	**309.6**	**349.1**	**349.1**
Innovation index	**51.3**	**50.8**	**52.2**	**51.4**
Innovation output sub-index	**38.4**	**38.5**	**41.3**	**40.6**
Innovation input sub-index	**64.1**	**63.0**	**63.1**	**62.2**
Innovation efficiency index	**0.6**	**0.6**	**0.7**	**0.7**
1. Institutions	**95.7**	**95.7**	**95.3**	**95.3**
1.1. Political environment	**95.1**	**95.1**	**93.9**	**93.9**
1.1.1 Political Stability	88.7	88.7	87.5	87.5
1.1.2. Government effectiveness	99.3	99.3	97.1	97.1
1.1.3. Press freedom	97.4	97.4	97.0	97.0
1.2. Regulatory environment	**99.2**	**99.2**	**99.2**	**99.2**
1.2.1. Regulatory quality	99.0	99.0	100.0	100.0
1.2.2. Rule of law	97.6	97.6	96.9	96.9
1.2.3. Cost of redundancy dismissal	100.0	100.0	100.0	100.0
1.3. Business environment	**92.9**	**92.9**	**92.9**	**92.9**
1.3.1. Ease of starting a business	85.6	85.6	85.6	85.6
1.3.2. Ease of resolving insolvency	98.7	98.7	98.7	98.7
1.3.3. Ease of paying taxes	94.4	94.4	94.4	94.4
2. Human capital and research	**64.4**	**64.4**	**63.3**	**63.3**
2.1. Education	**92.1**	**92.1**	**89.2**	**89.2**
2.1.1. Expenditure on education	100.0	100.0	100.0	100.0
2.1.2. Public expenditure on education per pupil	100.0	100.0	100.0	100.0
2.1.3. School life expectancy	86.1	86.1	79.1	79.1
2.1.4. Assessment in reading, mathematics, and science	67.8	67.8	67.8	67.8
2.1.5. Pupil-teacher ratio, secondary	94.7	94.7	88.4	88.4
2.2. Tertiary education	**29.6**	**29.6**	**27.9**	**27.9**
2.2.1. Tertiary enrolment	77.2	77.2	68.6	68.6
2.2.2. Graduates in science and engineering	18.5	18.5	18.5	18.5
2.2.3. Tertiary inbound mobility	13.8	13.8	13.8	13.8
2.2.4. Gross tertiary outbound enrolment	20.2	20.2	20.2	20.2
2.3. Research and development (R&D)	**71.5**	**71.5**	**72.7**	**72.7**
2.3.1. Researchers	77.8	77.8	84.7	84.7
2.3.2. Gross expenditure on R&D (GERD)	67.0	67.0	74.5	74.5
2.3.3. Quality of scientific research institutions	69.8	69.8	59.0	59.0
3. Infrastructure	**54.8**	**49.6**	**55.1**	**50.6**
3.1. Information & Communication technologies	**73.7**	**58.0**	**74.2**	**60.4**
3.1.1. ICT access	93.1	0.0	89.1	0.0
3.1.2. ICT use	85.7	0.0	86.7	0.0
3.1.3. Government's online service	54.8	54.8	72.5	72.5
3.1.4. E-participation	61.3	61.3	48.3	48.3
3.2. General infrastructure	**40.2**	**40.2**	**40.6**	**40.6**
3.2.1. Electricity output	21.8	21.8	25.3	25.3
3.2.2. Electricity consumption	24.4	24.4	23.5	23.5
3.2.3. Trade and transport-related infrastructure	82.3	82.3	82.3	82.3
3.2.4. Gross capital formation	15.2	15.2	15.2	15.2
3.3. Ecological sustainability	**50.6**	**50.6**	**50.6**	**50.6**
3.3.1. GDP per unit of energy use	47.1	47.1	47.1	47.1
3.3.2. Environmental performance	67.7	67.7	67.7	67.7
3.3.3. ISO 14001 environmental certificates	37.1	37.1	37.1	37.1

4. Market sophistication	**60.1**	**60.1**	**58.8**	**58.8**
4.1. Credit	**92.3**	**92.3**	**92.3**	**92.3**
4.1.1. Ease of getting credit	84.5	84.5	84.5	84.5
4.1.2. Domestic credit to private sector	100.0	100.0	100.0	100.0
4.1.3. Microfinance Institutions' gross loan portfolio	n/a	n/a	n/a	n/a
4.2. Investment	**34.5**	**34.5**	**35.4**	**35.4**
4.2.1. Ease of protecting investors	84.4	84.4	84.4	84.4
4.2.2. Market capitalization	7.8	7.8	5.2	5.2
4.2.3. Total value of stocks traded	6.1	6.1	6.3	6.3
4.2.4. Venture capital deals	39.5	39.5	45.4	45.4
4.3. Trade and competition	**53.7**	**53.7**	**48.7**	**48.7**
4.3.1. Applied tariff rate, weighted mean	94.3	94.3	91.8	91.8
4.3.2. Market access for non-agricultural exports	31.7	31.7	31.7	31.7
4.3.3. Imports of goods and services	15.9	15.9	14.3	14.3
4.3.4. Exports of goods and services	17.5	17.5	18.0	18.0
4.3.5. Intensity of local competition	72.1	72.1	55.0	55.0
5. Business sophistication	**45.3**	**45.3**	**43.1**	**43.1**
5.1. Knowledge workers	**63.6**	**63.6**	**61.0**	**61.0**
5.1.1. Employment in knowledge-intensive services	86.6	86.6	86.6	86.6
5.1.2. Firms offering formal training	n/a	n/a	n/a	n/a
5.1.3. GERD performed by business enterprise	79.1	79.1	75.7	75.7
5.1.4. GERD financed by business enterprise	66.8	66.8	54.6	54.6
5.1.5. GMAT mean score	57.8	57.8	57.8	57.8
5.1.6. GMAT test takers	4.8	4.8	4.8	4.8
5.2. Innovation linkages	**62.6**	**62.6**	**57.8**	**57.8**
5.2.1. University/industry research collaboration	82.8	82.8	75.1	75.1
5.2.2. State of cluster development	71.4	71.4	70.3	70.3
5.2.3. GERD financed by abroad	55.3	55.3	48.5	48.5
5.2.4. Joint venture / strategic alliance deals	48.8	48.8	41.2	41.2
5.2.5. Share of patents with foreign inventor	33.2	33.2	33.2	33.2
5.3. Knowledge absorption	**9.7**	**9.7**	**10.5**	**10.5**
5.3.1. Royalty and license fees payments	n/a	n/a	n/a	n/a
5.3.2. High-tech imports	9.5	9.5	9.5	9.5
5.3.3. Computer and communications service imports	15.8	15.8	15.8	15.8
5.3.4. Foreign direct investment net inflows	3.7	3.7	6.2	6.2
6. Knowledge and technology outputs	**26.4**	**21.0**	**30.1**	**24.4**
6.1. Knowledge creation	**37.2**	**21.0**	**40.7**	**23.7**
6.1.1. National office patent applications	7.8	7.8	18.8	18.8
6.1.2. Patent Cooperation Treaty applications	52.2	52.2	52.2	52.2
6.1.3. National office utility model applications	2.9	2.9	2.2	0.0
6.1.4. Scientific and technical journal articles	85.8	0.0	89.7	0.0
6.2. Knowledge impact	**25.0**	**25.0**	33.9	33.9
6.2.1. Growth rate of GDP per person engaged	14.6	14.6	29.9	29.9
6.2.2. New business density	23.3	23.3	23.3	23.3
6.2.3. Total computer software spending	51.6	51.6	65.1	65.1
6.2.4. ISO 9001 quality certificates	21.1	21.1	21.1	21.1
6.3. Knowledge diffusion	**16.9**	**16.9**	15.6	15.6
6.3.1. Royalty and license fees receipts	n/a	n/a	n/a	n/a
6.3.2. High-tech exports	24.8	24.8	24.8	24.8
6.3.3. Computer and communications service exports	18.9	18.9	18.9	18.9
6.3.4. Foreign direct investment net outflows	6.8	6.8	3.2	3.2
7. Creative outputs	**50.5**	**56.1**	**52.5**	**56.8**
7.1. Creative intangibles	**34.0**	**34.0**	**42.2**	**42.2**
7.1.1. National office trademark registrations	12.6	12.6	14.6	14.6
7.1.2. Madrid Agreement trademark registrations	17.5	17.5	19.9	19.9
7.1.3. ICT and business model creation	47.3	47.3	79.0	79.0
7.1.4. ICT and organizational models creation	58.5	58.5	55.3	55.3
7.2. Creative goods and services	**53.5**	**59.2**	**44.9**	**45.8**
7.2.1. Recreation and culture consumption	78.0	78.0	81.1	81.1
7.2.2. National feature films produced	42.7	0.0	42.7	0.0
7.2.3. Daily newspapers circulation	41.8	0.0	41.8	0.0
7.2.4. Creative goods exports	40.4	40.4	53.9	53.9
7.2.5. Creative services exports	n/a	n/a	2.4	2.4
7.3. Creation of online content	**80.5**	**97.1**	**80.5**	**97.1**
7.3.1. Generic top level domains (gTLDs)	99.6	99.6	99.6	99.6
7.3.2. Country-code top level domains (ccTLDs)	94.6	94.6	94.6	94.6
7.3.3. Wikipedia monthly edits	41.2	0.0	41.2	0.0
7.3.4. Video uploads on YouTube	86.6	0.0	86.6	0.0

United States of America (US)	2011 Score (0-100) (Collected)	2011 Score (0-100) (Removed Media Indicator)	2012 Score (0-100) (Collected)	2012 Score (0-100) (Removed Media Indicator)
Key Indicators				
Population (millions)	**317.6**	**317.6**	**312.9**	**312.9**
GDP per capita, PPP$	**45,989.2**	**45,989.2**	**48,147.2**	**48,147.2**
GDP (US$ billion)	**14,119.0**	**14,119.0**	**15,064.8**	**15,064.8**
Innovation index	**51.1**	**51.2**	**49.3**	**49.2**
Innovation output sub-index	**40.2**	**40.1**	**37.5**	**36.5**
Innovation input sub-index	**62.0**	**62.4**	**61.2**	**62.0**
Innovation efficiency index	**0.6**	**0.6**	**0.6**	**0.6**
1. Institutions	**85.1**	**85.1**	**82.6**	**82.6**
1.1. Political environment	**78.6**	**78.6**	**72.7**	**72.7**
1.1.1 Political Stability	57.8	57.8	63.7	63.7
1.1.2. Government effectiveness	85.2	85.2	70.8	70.8
1.1.3. Press freedom	92.9	92.9	83.6	83.6
1.2. Regulatory environment	**94.6**	**94.6**	**93.2**	**93.2**
1.2.1. Regulatory quality	89.2	89.2	86.3	86.3
1.2.2. Rule of law	89.4	89.4	86.4	86.4
1.2.3. Cost of redundancy dismissal	100.0	100.0	100.0	100.0
1.3. Business environment	**82.0**	**82.0**	**82.0**	**82.0**
1.3.1. Ease of starting a business	95.6	95.6	95.6	95.6
1.3.2. Ease of resolving insolvency	92.0	92.0	92.0	92.0
1.3.3. Ease of paying taxes	58.4	58.4	58.4	58.4
2. Human capital and research	**52.7**	**52.7**	**50.2**	**50.2**
2.1. Education	**67.0**	**67.0**	**64.8**	**64.8**
2.1.1. Expenditure on education	53.4	53.4	53.1	53.1
2.1.2. Public expenditure on education per pupil	53.0	53.0	52.1	52.1
2.1.3. School life expectancy	85.1	85.1	79.3	79.3
2.1.4. Assessment in reading, mathematics, and science	66.6	66.6	66.6	66.6
2.1.5. Pupil-teacher ratio, secondary	76.6	76.6	73.9	73.9
2.2. Tertiary education	**23.1**	**23.1**	**21.9**	**21.9**
2.2.1. Tertiary enrolment	96.3	96.3	90.4	90.4
2.2.2. Graduates in science and engineering	4.8	4.8	4.8	4.8
2.2.3. Tertiary inbound mobility	8.6	8.6	8.6	8.6
2.2.4. Gross tertiary outbound enrolment	1.1	1.1	1.1	1.1
2.3. Research and development (R&D)	**67.8**	**67.8**	**63.9**	**63.9**
2.3.1. Researchers	45.4	45.4	44.2	44.2
2.3.2. Gross expenditure on R&D (GERD)	69.2	69.2	67.3	67.3
2.3.3. Quality of scientific research institutions	88.9	88.9	80.2	80.2
3. Infrastructure	**51.2**	**53.0**	**53.7**	**57.4**
3.1. Information & Communication Technologies	**77.5**	**83.0**	**84.4**	**95.4**
3.1.1. ICT access	75.4	0.0	72.8	0.0
3.1.2. ICT use	68.6	0.0	73.9	0.0
3.1.3. Government's online service	91.8	91.8	100.0	100.0
3.1.4. E-participation	74.2	74.2	90.8	90.8
3.2. General infrastructure	**50.8**	**50.8**	**51.6**	**51.6**
3.2.1. Electricity output	47.7	47.7	54.0	54.0
3.2.2. Electricity consumption	53.3	53.3	51.5	51.5
3.2.3. Trade and transport-related infrastructure	90.4	90.4	90.4	90.4
3.2.4. Gross capital formation	11.5	11.5	11.5	11.5
3.3. Ecological sustainability	**25.3**	**25.3**	**25.3**	**25.3**
3.3.1. GDP per unit of energy use	25.5	25.5	25.5	25.5
3.3.2. Environmental performance	50.3	50.3	50.3	50.3
3.3.3. ISO 14001 environmental certificates	0.0	0.0	0.0	0.0

4. Market sophistication	**69.8**	**69.8**	**68.4**	**68.4**
4.1. Credit	**92.5**	**92.5**	**92.5**	**92.5**
4.1.1. Ease of getting credit	97.2	97.2	97.2	97.2
4.1.2. Domestic credit to private sector	87.9	87.9	87.9	87.9
4.1.3. Microfinance Institutions' gross loan portfolio	n/a	n/a	n/a	n/a
4.2. Investment	**58.3**	**58.3**	**53.5**	**53.5**
4.2.1. Ease of protecting investors	98.9	98.9	98.9	98.9
4.2.2. Market capitalization	15.3	15.3	8.8	8.8
4.2.3. Total value of stocks traded	43.3	43.3	29.2	29.2
4.2.4. Venture capital deals	75.8	75.8	77.0	77.0
4.3. Trade and competition	**58.4**	**58.4**	**59.3**	**59.3**
4.3.1. Applied tariff rate, weighted mean	92.6	92.6	90.9	90.9
4.3.2. Market access for non-agricultural exports	65.3	65.3	65.3	65.3
4.3.3. Imports of goods and services	0.0	0.0	0.0	0.0
4.3.4. Exports of goods and services	0.0	0.0	0.0	0.0
4.3.5. Intensity of local competition	75.8	75.8	81.1	81.1
5. Business sophistication	**51.4**	**51.4**	**51.2**	**51.2**
5.1. Knowledge workers	**71.7**	**71.7**	**70.6**	**70.6**
5.1.1. Employment in knowledge-intensive services	66.3	66.3	66.3	66.3
5.1.2. Firms offering formal training	n/a	n/a	n/a	n/a
5.1.3. GERD performed by business enterprise	82.6	82.6	83.4	83.4
5.1.4. GERD financed by business enterprise	75.5	75.5	67.9	67.9
5.1.5. GMAT mean score	39.7	39.7	39.7	39.7
5.1.6. GMAT test takers	100.0	100.0	100.0	100.0
5.2. Innovation linkages	**71.3**	**71.3**	**69.5**	**69.5**
5.2.1. University/industry research collaboration	100.0	100.0	97.2	97.2
5.2.2. State of cluster development	82.7	82.7	74.9	74.9
5.2.3. GERD financed by abroad	0.0	0.0	n/a	n/a
5.2.4. Joint venture / strategic alliance deals	24.2	24.2	34.5	34.5
5.2.5. Share of patents with foreign inventor	38.3	38.3	38.3	38.3
5.3. Knowledge absorption	**11.3**	**11.3**	**13.4**	**13.4**
5.3.1. Royalty and license fees payments	0.3	0.3	0.6	0.6
5.3.2. High-tech imports	25.7	25.7	25.7	25.7
5.3.3. Computer and communications service imports	15.5	15.5	15.5	15.5
5.3.4. Foreign direct investment net inflows	3.7	3.7	11.8	11.8
6. Knowledge and technology outputs	**32.9**	**29.8**	**32.2**	**29.2**
6.1. Knowledge creation	**30.3**	**21.1**	**30.8**	**21.8**
6.1.1. National office patent applications	16.7	16.7	18.2	18.2
6.1.2. Patent Cooperation Treaty applications	25.5	25.5	25.5	25.5
6.1.3. National office utility model applications	n/a	n/a	n/a	n/a
6.1.4. Scientific and technical journal articles	48.7	0.0	48.9	0.0
6.2. Knowledge impact	**34.5**	**34.5**	**31.9**	**31.9**
6.2.1. Growth rate of GDP per person engaged	38.5	38.5	26.5	26.5
6.2.2. New business density	n/a	n/a	n/a	n/a
6.2.3. Total computer software spending	60.9	60.9	74.3	74.3
6.2.4. ISO 9001 quality certificates	0.1	0.1	0.1	0.1
6.3. Knowledge diffusion	**33.8**	**33.8**	**33.8**	**33.8**
6.3.1. Royalty and license fees receipts	54.8	54.8	54.1	54.1
6.3.2. High-tech exports	38.7	38.7	38.7	38.7
6.3.3. Computer and communications service exports	35.3	35.3	35.3	35.3
6.3.4. Foreign direct investment net outflows	6.3	6.3	7.1	7.1
7. Creative outputs	**47.5**	**50.3**	**42.7**	**43.8**
7.1. Creative intangibles	**40.5**	**40.5**	**36.2**	**36.2**
7.1.1. National office trademark registrations	3.9	3.9	9.4	9.4
7.1.2. Madrid Agreement trademark registrations	1.5	1.5	2.4	2.4
7.1.3. ICT and business model creation	72.8	72.8	91.6	91.6
7.1.4. ICT and organizational models creation	83.8	83.8	41.5	41.5
7.2. Creative goods and services	**46.2**	**57.3**	**35.7**	**39.6**
7.2.1. Recreation and culture consumption	85.5	85.5	66.0	66.0
7.2.2. National feature films produced	16.3	0.0	16.3	0.0
7.2.3. Daily newspapers circulation	31.8	0.0	31.8	0.0
7.2.4. Creative goods exports	29.1	29.1	34.8	34.8
7.2.5. Creative services exports	n/a	n/a	18.2	18.2
7.3. Creation of online content	**62.8**	**63.1**	**62.8**	**63.1**
7.3.1. Generic top level domains (gTLDs)	91.1	91.1	91.1	91.1
7.3.2. Country-code top level domains (ccTLDs)	35.0	35.0	35.0	35.0
7.3.3. Wikipedia monthly edits	25.3	0.0	25.3	0.0
7.3.4. Video uploads on YouTube	99.8	0.0	99.8	0.0

Canada (CA)	2011 Score (0-100) (Collected)	2011 Score (0-100) (Removed Media Indicator)	2012 Score (0-100) (Collected)	2012 Score (0-100) (Removed Media Indicator)
Key Indicators				
Population (millions)	**33.9**	**33.9**	**34.4**	**34.4**
GDP per capita, PPP$	**37,945.6**	**37,945.6**	**40,457.6**	**40,457.6**
GDP (US$ billion)	**1,336.1**	**1,336.1**	**1,758.7**	**1,758.7**
Innovation index	**51.0**	**50.0**	**48.6**	**47.4**
Innovation output sub-index	**40.2**	**38.1**	**36.8**	**34.4**
Innovation input sub-index	**61.7**	**61.8**	**60.4**	**60.5**
Innovation efficiency index	**0.7**	**0.6**	**0.6**	**0.6**
1. Institutions	**94.6**	**94.6**	**93.4**	**93.4**
1.1. Political environment	**92.1**	**92.1**	**89.5**	**89.5**
1.1.1 Political Stability	88.1	88.1	85.1	85.1
1.1.2. Government effectiveness	95.5	95.5	86.3	86.3
1.1.3. Press freedom	92.6	92.6	97.0	97.0
1.2. Regulatory environment	**92.8**	**92.8**	**91.8**	**91.8**
1.2.1. Regulatory quality	96.1	96.1	94.0	94.0
1.2.2. Rule of law	95.9	95.9	93.7	93.7
1.2.3. Cost of redundancy dismissal	89.7	89.7	89.7	89.7
1.3. Business environment	**98.9**	**98.9**	**98.9**	**98.9**
1.3.1. Ease of starting a business	100.0	100.0	100.0	100.0
1.3.2. Ease of resolving insolvency	100.0	100.0	100.0	100.0
1.3.3. Ease of paying taxes	96.6	96.6	96.6	96.6
2. Human capital and research	**47.8**	**47.8**	**49.0**	**49.0**
2.1. Education	**61.7**	**61.7**	**68.5**	**68.5**
2.1.1. Expenditure on education	53.2	53.2	51.0	51.0
2.1.2. Public expenditure on education per pupil	61.8	61.8	60.0	60.0
2.1.3. School life expectancy	63.5	63.5	57.5	57.5
2.1.4. Assessment in reading, mathematics, and science	79.1	79.1	79.1	79.1
2.1.5. Pupil-teacher ratio, secondary	59.8	59.8	100.0	100.0
2.2. Tertiary education	**28.8**	**28.8**	**28.1**	**28.1**
2.2.1. Tertiary enrolment	59.2	59.2	55.7	55.7
2.2.2. Graduates in science and engineering	23.2	23.2	23.2	23.2
2.2.3. Tertiary inbound mobility	12.6	12.6	12.6	12.6
2.2.4. Gross tertiary outbound enrolment	25.9	25.9	25.9	25.9
2.3. Research and development (R&D)	**52.8**	**52.8**	**50.5**	**50.5**
2.3.1. Researchers	41.3	41.3	40.2	40.2
2.3.2. Gross expenditure on R&D (GERD)	38.8	38.8	41.1	41.1
2.3.3. Quality of scientific research institutions	78.2	78.2	70.3	70.3
3. Infrastructure	**53.6**	**54.5**	**51.6**	**52.1**
3.1. Information & Communication Technologies	**74.8**	**77.3**	**69.4**	**70.8**
3.1.1. ICT access	81.1	0.0	75.6	0.0
3.1.2. ICT use	63.5	0.0	60.4	0.0
3.1.3. Government's online service	83.6	83.6	78.4	78.4
3.1.4. E-participation	71.0	71.0	63.2	63.2
3.2. General infrastructure	**60.6**	**60.6**	**59.9**	**59.9**
3.2.1. Electricity output	66.5	66.5	68.5	68.5
3.2.2. Electricity consumption	66.7	66.7	60.4	60.4
3.2.3. Trade and transport-related infrastructure	84.3	84.3	84.3	84.3
3.2.4. Gross capital formation	30.8	30.8	30.8	30.8
3.3. Ecological sustainability	**25.6**	**25.6**	**25.6**	**25.6**
3.3.1. GDP per unit of energy use	17.9	17.9	17.9	17.9
3.3.2. Environmental performance	54.8	54.8	54.8	54.8
3.3.3. ISO 14001 environmental certificates	4.0	4.0	4.0	4.0

4. Market sophistication	**64.4**	**64.4**	**61.7**	**61.7**
4.1. Credit	**66.6**	**66.6**	**66.6**	**66.6**
4.1.1. Ease of getting credit	84.5	84.5	84.5	84.5
4.1.2. Domestic credit to private sector	48.6	48.6	48.6	48.6
4.1.3. Microfinance Institutions' gross loan portfolio	n/a	n/a	n/a	n/a
4.2. Investment	**57.4**	**57.4**	**48.2**	**48.2**
4.2.1. Ease of protecting investors	98.9	98.9	98.9	98.9
4.2.2. Market capitalization	18.7	18.7	10.5	10.5
4.2.3. Total value of stocks traded	12.1	12.1	12.0	12.0
4.2.4. Venture capital deals	100.0	100.0	71.5	71.5
4.3. Trade and competition	**69.3**	**69.3**	**70.4**	**70.4**
4.3.1. Applied tariff rate, weighted mean	95.3	95.3	94.7	94.7
4.3.2. Market access for non-agricultural exports	100.0	100.0	100.0	100.0
4.3.3. Imports of goods and services	8.8	8.8	7.5	7.5
4.3.4. Exports of goods and services	8.4	8.4	8.0	8.0
4.3.5. Intensity of local competition	73.2	73.2	79.3	79.3
5. Business sophistication	**47.9**	**47.9**	**46.0**	**46.0**
5.1. Knowledge workers	**64.4**	**64.4**	**62.0**	**62.0**
5.1.1. Employment in knowledge-intensive services	80.2	80.2	80.2	80.2
5.1.2. Firms offering formal training	n/a	n/a	n/a	n/a
5.1.3. GERD performed by business enterprise	56.4	56.4	58.5	58.5
5.1.4. GERD financed by business enterprise	47.3	47.3	30.9	30.9
5.1.5. GMAT mean score	65.2	65.2	65.2	65.2
5.1.6. GMAT test takers	56.9	56.9	56.9	56.9
5.2. Innovation linkages	**70.0**	**70.0**	**65.4**	**65.4**
5.2.1. University/industry research collaboration	85.1	85.1	77.1	77.1
5.2.2. State of cluster development	72.4	72.4	63.0	63.0
5.2.3. GERD financed by abroad	53.0	53.0	52.0	52.0
5.2.4. Joint venture / strategic alliance deals	100.0	100.0	100.0	100.0
5.2.5. Share of patents with foreign inventor	39.3	39.3	39.3	39.3
5.3. Knowledge absorption	**9.4**	**9.4**	**10.7**	**10.7**
5.3.1. Royalty and license fees payments	2.9	2.9	2.3	2.3
5.3.2. High-tech imports	12.2	12.2	12.2	12.2
5.3.3. Computer and communications service imports	16.7	16.7	16.7	16.7
5.3.4. Foreign direct investment net inflows	5.9	5.9	11.4	11.4
6. Knowledge and technology outputs	**26.9**	**20.0**	**25.6**	**18.3**
6.1. Knowledge creation	**30.5**	**9.7**	**31.3**	**9.5**
6.1.1. National office patent applications	3.7	3.7	3.4	3.4
6.1.2. Patent Cooperation Treaty applications	15.6	15.6	15.6	15.6
6.1.3. National office utility model applications	n/a	n/a	n/a	n/a
6.1.4. Scientific and technical journal articles	72.2	0.0	75.0	0.0
6.2. Knowledge impact	**27.6**	**27.6**	**24.0**	**24.0**
6.2.1. Growth rate of GDP per person engaged	20.8	20.8	12.3	12.3
6.2.2. New business density	39.0	39.0	39.0	39.0
6.2.3. Total computer software spending	46.1	46.1	45.0	45.0
6.2.4. ISO 9001 quality certificates	11.1	11.1	11.1	11.1
6.3. Knowledge diffusion	**22.6**	**22.6**	**21.4**	**21.4**
6.3.1. Royalty and license fees receipts	20.0	20.0	17.6	17.6
6.3.2. High-tech exports	17.1	17.1	17.1	17.1
6.3.3. Computer and communications service exports	43.5	43.5	43.5	43.5
6.3.4. Foreign direct investment net outflows	9.9	9.9	7.3	7.3
7. Creative outputs	**53.6**	**56.2**	**48.1**	**50.6**
7.1. Creative intangibles	**50.9**	**50.9**	**40.7**	**40.7**
7.1.1. National office trademark registrations	1.8	1.8	25.3	25.3
7.1.2. Madrid Agreement trademark registrations	n/a	n/a	n/a	n/a
7.1.3. ICT and business model creation	73.7	73.7	74.3	74.3
7.1.4. ICT and organizational models creation	77.2	77.2	22.6	22.6
7.2. Creative goods and services	**45.7**	**54.5**	**44.1**	**52.3**
7.2.1. Recreation and culture consumption	79.4	79.4	66.3	66.3
7.2.2. National feature films produced	15.1	0.0	15.1	0.0
7.2.3. Daily newspapers circulation	23.7	0.0	23.7	0.0
7.2.4. Creative goods exports	22.0	22.0	25.0	25.0
7.2.5. Creative services exports	62.2	62.2	65.7	65.7
7.3. Creation of online content	**66.8**	**68.7**	**66.8**	**68.7**
7.3.1. Generic top level domains (gTLDs)	66.2	66.2	66.2	66.2
7.3.2. Country-code top level domains (ccTLDs)	71.2	71.2	71.2	71.2
7.3.3. Wikipedia monthly edits	38.4	0.0	38.4	0.0
7.3.4. Video uploads on YouTube	91.4	0.0	91.4	0.0

Netherlands (NL)	2011 Score (0-100) (Collected)	2011 Score (0-100) (Removed Media Indicator)	2012 Score (0-100) (Collected)	2012 Score (0-100) (Removed Media Indicator)
Key Indicators				
Population (millions)	**16.7**	**16.7**	**16.7**	**16.7**
GDP per capita, PPP$	**40,714.7**	**40,714.7**	**42,330.7**	**42,330.7**
GDP (US$ billion)	**792.1**	**792.1**	**858.3**	**858.3**
Innovation index	**53.9**	**53.2**	**52.8**	**52.9**
Innovation output sub-index	**50.6**	**50.4**	**48.1**	**47.9**
Innovation input sub-index	**57.2**	**56.1**	**57.5**	**57.9**
Innovation efficiency index	**0.9**	**0.9**	**0.8**	**0.8**
1. Institutions	**88.7**	**88.7**	**87.2**	**87.2**
1.1. Political environment	**92.6**	**92.6**	**88.4**	**88.4**
1.1.1 Political Stability	85.4	85.4	84.7	84.7
1.1.2. Government effectiveness	92.3	92.3	81.2	81.2
1.1.3. Press freedom	100.0	100.0	99.3	99.3
1.2. Regulatory environment	**96.7**	**96.7**	**96.1**	**96.1**
1.2.1. Regulatory quality	97.0	97.0	96.9	96.9
1.2.2. Rule of law	96.5	96.5	94.4	94.4
1.2.3. Cost of redundancy dismissal	96.5	96.5	96.5	96.5
1.3. Business environment	**77.0**	**77.0**	**77.0**	**77.0**
1.3.1. Ease of starting a business	60.0	60.0	60.0	60.0
1.3.2. Ease of resolving insolvency	94.7	94.7	94.7	94.7
1.3.3. Ease of paying taxes	76.4	76.4	76.4	76.4
2. Human capital and research	**43.9**	**43.9**	**43.7**	**43.7**
2.1. Education	**71.1**	**71.1**	**68.7**	**68.7**
2.1.1. Expenditure on education	54.4	54.4	52.2	52.2
2.1.2. Public expenditure on education per pupil	61.5	61.5	62.9	62.9
2.1.3. School life expectancy	84.5	84.5	80.6	80.6
2.1.4. Assessment in reading, mathematics, and science	75.9	75.9	75.9	75.9
2.1.5. Pupil-teacher ratio, secondary	81.6	81.6	75.3	75.3
2.2. Tertiary education	**16.1**	**16.1**	**15.9**	**15.9**
2.2.1. Tertiary enrolment	57.3	57.3	56.2	56.2
2.2.2. Graduates in science and engineering	0.0	0.0	0.0	0.0
2.2.3. Tertiary inbound mobility	9.8	9.8	9.8	9.8
2.2.4. Gross tertiary outbound enrolment	13.3	13.3	13.3	13.3
2.3. Research and development (R&D)	**44.5**	**44.5**	**46.6**	**46.6**
2.3.1. Researchers	26.9	26.9	28.8	28.8
2.3.2. Gross expenditure on R&D (GERD)	32.1	32.1	37.7	37.7
2.3.3. Quality of scientific research institutions	74.7	74.7	73.4	73.4
3. Infrastructure	**53.5**	**48.1**	**59.3**	**61.3**
3.1. Information & Communication Technologies	**72.9**	**56.6**	**90.3**	**96.1**
3.1.1. ICT access	94.2	0.0	88.5	0.0
3.1.2. ICT use	84.2	0.0	80.5	0.0
3.1.3. Government's online service	56.2	56.2	92.2	92.2
3.1.4. E-participation	57.0	57.0	100.0	100.0
3.2. General infrastructure	**47.2**	**47.2**	**47.3**	**47.3**
3.2.1. Electricity output	22.6	22.6	25.0	25.0
3.2.2. Electricity consumption	26.9	26.9	25.2	25.2
3.2.3. Trade and transport-related infrastructure	95.5	95.5	95.5	95.5
3.2.4. Gross capital formation	21.3	21.3	21.3	21.3
3.3. Ecological sustainability	**40.5**	**40.5**	**40.5**	**40.5**
3.3.1. GDP per unit of energy use	33.7	33.7	33.7	33.7
3.3.2. Environmental performance	72.7	72.7	72.7	72.7
3.3.3. ISO 14001 environmental certificates	14.9	14.9	14.9	14.9

4. Market sophistication	**51.0**	**51.0**	**51.4**	**51.4**
4.1. Credit	**76.3**	**76.3**	**76.3**	**76.3**
4.1.1. Ease of getting credit	66.2	66.2	66.2	66.2
4.1.2. Domestic credit to private sector	86.4	86.4	86.4	86.4
4.1.3. Microfinance Institutions' gross loan portfolio	n/a	n/a	n/a	n/a
4.2. Investment	**17.9**	**17.9**	**15.7**	**15.7**
4.2.1. Ease of protecting investors	35.6	35.6	35.6	35.6
4.2.2. Market capitalization	9.2	9.2	6.0	6.0
4.2.3. Total value of stocks traded	9.9	9.9	10.4	10.4
4.2.4. Venture capital deals	17.1	17.1	10.8	10.8
4.3. Trade and competition	**58.8**	**58.8**	**62.3**	**62.3**
4.3.1. Applied tariff rate, weighted mean	94.3	94.3	91.8	91.8
4.3.2. Market access for non-agricultural exports	31.7	31.7	31.7	31.7
4.3.3. Imports of goods and services	25.6	25.6	27.0	27.0
4.3.4. Exports of goods and services	27.8	27.8	31.1	31.1
4.3.5. Intensity of local competition	82.6	82.6	96.4	96.4
5. Business sophistication	**48.6**	**48.6**	**45.8**	**45.8**
5.1. Knowledge workers	**59.9**	**59.9**	**55.5**	**55.5**
5.1.1. Employment in knowledge-intensive services	91.2	91.2	91.2	91.2
5.1.2. Firms offering formal training	n/a	n/a	n/a	n/a
5.1.3. GERD performed by business enterprise	57.7	57.7	50.2	50.2
5.1.4. GERD financed by business enterprise	52.4	52.4	33.4	33.4
5.1.5. GMAT mean score	51.2	51.2	51.2	51.2
5.1.6. GMAT test takers	15.8	15.8	15.8	15.8
5.2. Innovation linkages	**62.7**	**62.7**	**63.1**	**63.1**
5.2.1. University/industry research collaboration	77.0	77.0	81.8	81.8
5.2.2. State of cluster development	76.5	76.5	69.4	69.4
5.2.3. GERD financed by abroad	64.2	64.2	59.6	59.6
5.2.4. Joint venture / strategic alliance deals	12.4	12.4	29.5	29.5
5.2.5. Share of patents with foreign inventor	54.0	54.0	54.0	54.0
5.3. Knowledge absorption	**23.2**	**23.2**	**18.8**	**18.8**
5.3.1. Royalty and license fees payments	2.4	2.4	1.9	1.9
5.3.2. High-tech imports	23.3	23.3	23.3	23.3
5.3.3. Computer and communications service imports	50.2	50.2	50.2	50.2
5.3.4. Foreign direct investment net inflows	16.8	16.8	0.0	0.0
6. Knowledge and technology outputs	**39.5**	**34.0**	**40.7**	**35.2**
6.1. Knowledge creation	**38.6**	**22.1**	**41.3**	**24.9**
6.1.1. National office patent applications	3.7	3.7	9.3	9.3
6.1.2. Patent Cooperation Treaty applications	40.5	40.5	40.5	40.5
6.1.3. National office utility model applications	n/a	n/a	n/a	n/a
6.1.4. Scientific and technical journal articles	71.5	0.0	74.1	0.0
6.2. Knowledge impact	**37.2**	**37.2**	**37.9**	**37.9**
6.2.1. Growth rate of GDP per person engaged	28.4	28.4	19.3	19.3
6.2.2. New business density	15.6	15.6	15.6	15.6
6.2.3. Total computer software spending	71.9	71.9	93.6	93.6
6.2.4. ISO 9001 quality certificates	41.7	41.7	41.7	41.7
6.3. Knowledge diffusion	**42.8**	**42.8**	**42.8**	**42.8**
6.3.1. Royalty and license fees receipts	59.1	59.1	52.3	52.3
6.3.2. High-tech exports	41.3	41.3	41.3	41.3
6.3.3. Computer and communications service exports	59.1	59.1	59.1	59.1
6.3.4. Foreign direct investment net outflows	11.7	11.7	18.6	18.6
7. Creative outputs	**61.7**	**66.7**	**55.6**	**60.5**
7.1. Creative intangibles	**51.0**	**51.0**	**38.9**	**38.9**
7.1.1. National office trademark registrations	19.4	19.4	13.3	13.3
7.1.2. Madrid Agreement trademark registrations	0.0	0.0	n/a	n/a
7.1.3. ICT and business model creation	63.8	63.8	74.8	74.8
7.1.4. ICT and organizational models creation	69.7	69.7	28.6	28.6
7.2. Creative goods and services	**56.8**	**64.9**	**56.5**	**64.4**
7.2.1. Recreation and culture consumption	76.8	76.8	73.6	73.6
7.2.2. National feature films produced	18.8	0.0	18.8	0.0
7.2.3. Daily newspapers circulation	46.6	0.0	46.6	0.0
7.2.4. Creative goods exports	17.8	17.8	19.6	19.6
7.2.5. Creative services exports	100.0	100.0	100.0	100.0
7.3. Creation of online content	**88.1**	**100.0**	**88.1**	**100.0**
7.3.1. Generic top level domains (gTLDs)	100.0	100.0	100.0	100.0
7.3.2. Country-code top level domains (ccTLDs)	100.0	100.0	100.0	100.0
7.3.3. Wikipedia monthly edits	58.9	0.0	58.9	0.0
7.3.4. Video uploads on YouTube	93.6	0.0	93.6	0.0

United Kingdom (GB)	2011 Score (0-100) (Collected)	2011 Score (0-100) (Removed Media Indicator)	2012 Score (0-100) (Collected)	2012 Score (0-100) (Removed Media Indicator)
Key Indicators				
Population (millions)	**61.9**	**61.9**	**62.6**	**62.6**
GDP per capita, PPP$	**36,495.8**	**36,495.8**	**35,974.4**	**35,974.4**
GDP (US$ billion)	**2,174.5**	**2,174.5**	**2,481.0**	**2,481.0**
Innovation index	**53.9**	**53.1**	**53.9**	**53.5**
Innovation output sub-index	**44.3**	**43.3**	**44.2**	**43.2**
Innovation input sub-index	**63.4**	**63.0**	**63.6**	**63.8**
Innovation efficiency index	**0.7**	**0.7**	**0.7**	**0.7**
1. Institutions	**89.0**	**89.0**	**89.2**	**89.2**
1.1. Political environment	**78.1**	**78.1**	**77.9**	**77.9**
1.1.1 Political Stability	53.0	53.0	66.8	66.8
1.1.2. Government effectiveness	87.7	87.7	75.1	75.1
1.1.3. Press freedom	93.7	93.7	91.8	91.8
1.2. Regulatory environment	**96.6**	**96.6**	**97.2**	**97.2**
1.2.1. Regulatory quality	94.1	94.1	95.7	95.7
1.2.2. Rule of law	92.4	92.4	93.0	93.0
1.2.3. Cost of redundancy dismissal	100.0	100.0	100.0	100.0
1.3. Business environment	**92.4**	**92.4**	**92.4**	**92.4**
1.3.1. Ease of starting a business	91.1	91.1	91.1	91.1
1.3.2. Ease of resolving insolvency	97.3	97.3	97.3	97.3
1.3.3. Ease of paying taxes	88.8	88.8	88.8	88.8
2. Human capital and research	**55.0**	**55.0**	**51.4**	**51.4**
2.1. Education	**70.5**	**70.5**	**68.0**	**68.0**
2.1.1. Expenditure on education	58.2	58.2	58.4	58.4
2.1.2. Public expenditure on education per pupil	71.1	71.1	67.4	67.4
2.1.3. School life expectancy	76.8	76.8	74.2	74.2
2.1.4. Assessment in reading, mathematics, and science	68.1	68.1	68.1	68.1
2.1.5. Pupil-teacher ratio, secondary	77.1	77.1	71.9	71.9
2.2. Tertiary education	**29.8**	**29.8**	**29.4**	**29.4**
2.2.1. Tertiary enrolment	53.7	53.7	51.7	51.7
2.2.2. Graduates in science and engineering	25.3	25.3	25.3	25.3
2.2.3. Tertiary inbound mobility	39.3	39.3	39.3	39.3
2.2.4. Gross tertiary outbound enrolment	5.3	5.3	5.3	5.3
2.3. Research and development (R&D)	**64.8**	**64.8**	**56.9**	**56.9**
2.3.1. Researchers	61.0	61.0	40.3	40.3
2.3.2. Gross expenditure on R&D (GERD)	40.1	40.1	37.1	37.1
2.3.3. Quality of scientific research institutions	93.3	93.3	93.2	93.2
3. Infrastructure	**58.5**	**56.4**	**62.1**	**63.3**
3.1. Information & Communication Technologies	**78.2**	**71.9**	**88.9**	**92.5**
3.1.1. ICT access	91.5	0.0	89.5	0.0
3.1.2. ICT use	77.6	0.0	81.3	0.0
3.1.3. Government's online service	68.5	68.5	94.1	94.1
3.1.4. E-participation	75.3	75.3	90.8	90.8
3.2. General infrastructure	**37.5**	**37.5**	**37.7**	**37.7**
3.2.1. Electricity output	19.5	19.5	21.7	21.7
3.2.2. Electricity consumption	21.8	21.8	20.9	20.9
3.2.3. Trade and transport-related infrastructure	80.3	80.3	80.3	80.3
3.2.4. Gross capital formation	11.5	11.5	11.5	11.5
3.3. Ecological sustainability	**59.7**	**59.7**	**59.7**	**59.7**
3.3.1. GDP per unit of energy use	49.0	49.0	49.0	49.0
3.3.2. Environmental performance	80.5	80.5	80.5	80.5
3.3.3. ISO 14001 environmental certificates	49.6	49.6	49.6	49.6

4. Market sophistication	**64.2**	**64.2**	**65.0**	**65.0**
4.1. Credit	**94.4**	**94.4**	**94.4**	**94.4**
4.1.1. Ease of getting credit	100.0	100.0	100.0	100.0
4.1.2. Domestic credit to private sector	88.9	88.9	88.9	88.9
4.1.3. Microfinance Institutions' gross loan portfolio	n/a	n/a	n/a	n/a
4.2. Investment	**43.2**	**43.2**	**42.8**	**42.8**
4.2.1. Ease of protecting investors	95.6	95.6	95.6	95.6
4.2.2. Market capitalization	19.1	19.1	10.6	10.6
4.2.3. Total value of stocks traded	20.5	20.5	18.6	18.6
4.2.4. Venture capital deals	37.5	37.5	46.5	46.5
4.3. Trade and competition	**55.1**	**55.1**	**57.9**	**57.9**
4.3.1. Applied tariff rate, weighted mean	94.3	94.3	91.8	91.8
4.3.2. Market access for non-agricultural exports	31.7	31.7	31.7	31.7
4.3.3. Imports of goods and services	8.5	8.5	8.3	8.3
4.3.4. Exports of goods and services	7.9	7.9	8.0	8.0
4.3.5. Intensity of local competition	86.3	86.3	100.0	100.0
5. Business sophistication	**50.3**	**50.3**	**50.0**	**50.0**
5.1. Knowledge workers	**62.6**	**62.6**	**59.0**	**59.0**
5.1.1. Employment in knowledge-intensive services	80.5	80.5	80.5	80.5
5.1.2. Firms offering formal training	n/a	n/a	n/a	n/a
5.1.3. GERD performed by business enterprise	70.7	70.7	69.2	69.2
5.1.4. GERD financed by business enterprise	47.0	47.0	27.1	27.1
5.1.5. GMAT mean score	90.8	90.8	90.8	90.8
5.1.6. GMAT test takers	5.8	5.8	5.8	5.8
5.2. Innovation linkages	**72.6**	**72.6**	**75.4**	**75.4**
5.2.1. University/industry research collaboration	92.3	92.3	98.8	98.8
5.2.2. State of cluster development	71.4	71.4	73.1	73.1
5.2.3. GERD financed by abroad	100.0	100.0	100.0	100.0
5.2.4. Joint venture / strategic alliance deals	25.7	25.7	31.7	31.7
5.2.5. Share of patents with foreign inventor	27.7	27.7	27.7	27.7
5.3. Knowledge absorption	**15.8**	**15.8**	**15.7**	**15.7**
5.3.1. Royalty and license fees payments	1.8	1.8	1.7	1.7
5.3.2. High-tech imports	13.6	13.6	13.6	13.6
5.3.3. Computer and communications service imports	34.3	34.3	34.3	34.3
5.3.4. Foreign direct investment net inflows	13.4	13.4	13.2	13.2
6. Knowledge and technology outputs	**36.4**	**29.9**	**35.0**	**28.6**
6.1. Knowledge creation	**31.1**	**11.7**	**32.3**	**13.1**
6.1.1. National office patent applications	7.4	7.4	10.2	10.2
6.1.2. Patent Cooperation Treaty applications	16.0	16.0	16.0	16.0
6.1.3. National office utility model applications	n/a	n/a	n/a	n/a
6.1.4. Scientific and technical journal articles	70.0	0.0	70.7	0.0
6.2. Knowledge impact	**45.0**	**45.0**	**40.9**	**40.9**
6.2.1. Growth rate of GDP per person engaged	32.2	32.2	15.4	15.4
6.2.2. New business density	41.6	41.6	41.6	41.6
6.2.3. Total computer software spending	65.6	65.6	78.9	78.9
6.2.4. ISO 9001 quality certificates	53.3	53.3	53.3	53.3
6.3. Knowledge diffusion	**33.0**	**33.0**	**31.8**	**31.8**
6.3.1. Royalty and license fees receipts	47.0	47.0	47.2	47.2
6.3.2. High-tech exports	41.7	41.7	41.7	41.7
6.3.3. Computer and communications service exports	36.8	36.8	36.8	36.8
6.3.4. Foreign direct investment net outflows	6.5	6.5	1.4	1.4
7. Creative outputs	**52.3**	**56.7**	**53.4**	**57.9**
7.1. Creative intangibles	**41.2**	**41.2**	**42.6**	**42.6**
7.1.1. National office trademark registrations	2.5	2.5	34.7	34.7
7.1.2. Madrid Agreement trademark registrations	3.9	3.9	4.8	4.8
7.1.3. ICT and business model creation	79.0	79.0	90.2	90.2
7.1.4. ICT and organizational models creation	79.3	79.3	40.6	40.6
7.2. Creative goods and services	**44.5**	**49.3**	**46.0**	**51.4**
7.2.1. Recreation and culture consumption	92.9	92.9	82.6	82.6
7.2.2. National feature films produced	9.1	0.0	9.1	0.0
7.2.3. Daily newspapers circulation	50.7	0.0	50.7	0.0
7.2.4. Creative goods exports	47.3	47.3	63.4	63.4
7.2.5. Creative services exports	7.8	7.8	8.2	8.2
7.3. Creation of online content	**82.4**	**95.0**	**82.4**	**95.0**
7.3.1. Generic top level domains (gTLDs)	100.0	100.0	100.0	100.0
7.3.2. Country-code top level domains (ccTLDs)	90.1	90.1	90.1	90.1
7.3.3. Wikipedia monthly edits	47.3	0.0	47.3	0.0
7.3.4. Video uploads on YouTube	92.1	0.0	92.1	0.0

Korea, Rep. (KR)	2011 Score (0-100) (Collected)	2011 Score (0-100) (Removed Media Indicator)	2012 Score (0-100) (Collected)	2012 Score (0-100) (Removed Media Indicator)
Key Indicators				
Population (millions)	**48.5**	**48.5**	**49.0**	**49.0**
GDP per capita, PPP$	**27,168.5**	**27,168.5**	**31,753.5**	**31,753.5**
GDP (US$ billion)	**832.5**	**832.5**	**1,163.8**	**1,163.8**
Innovation index	**47.1**	**47.8**	**43.7**	**44.0**
Innovation output sub-index	**42.7**	**44.0**	**36.2**	**36.7**
Innovation input sub-index	**51.4**	**51.7**	**51.1**	**51.3**
Innovation efficiency index	**0.8**	**0.9**	**0.7**	**0.7**
1. Institutions	**62.6**	**62.6**	**60.1**	**60.1**
1.1. Political environment	**71.2**	**71.2**	**67.6**	**67.6**
1.1.1 Political Stability	50.3	50.3	56.6	56.6
1.1.2. Government effectiveness	77.4	77.4	61.7	61.7
1.1.3. Press freedom	85.9	85.9	84.5	84.5
1.2. Regulatory environment	**38.2**	**38.2**	**34.4**	**34.4**
1.2.1. Regulatory quality	74.4	74.4	71.8	71.8
1.2.2. Rule of law	78.2	78.2	65.9	65.9
1.2.3. Cost of redundancy dismissal	0.0	0.0	0.0	0.0
1.3. Business environment	**78.4**	**78.4**	**78.4**	**78.4**
1.3.1. Ease of starting a business	65.6	65.6	65.6	65.6
1.3.2. Ease of resolving insolvency	92.0	92.0	92.0	92.0
1.3.3. Ease of paying taxes	77.5	77.5	77.5	77.5
2. Human capital and research	**55.3**	**55.3**	**55.4**	**55.4**
2.1. Education	**58.1**	**58.1**	**58.8**	**58.8**
2.1.1. Expenditure on education	38.3	38.3	38.1	38.1
2.1.2. Public expenditure on education per pupil	33.4	33.4	44.1	44.1
2.1.3. School life expectancy	85.9	85.9	82.4	82.4
2.1.4. Assessment in reading, mathematics, and science	85.2	85.2	85.2	85.2
2.1.5. Pupil-teacher ratio, secondary	61.3	61.3	57.5	57.5
2.2. Tertiary education	**47.6**	**47.6**	**47.6**	**47.6**
2.2.1. Tertiary enrolment	100.0	100.0	100.0	100.0
2.2.2. Graduates in science and engineering	57.4	57.4	57.4	57.4
2.2.3. Tertiary inbound mobility	4.0	4.0	4.0	4.0
2.2.4. Gross tertiary outbound enrolment	19.3	19.3	19.3	19.3
2.3. Research and development (R&D)	**60.1**	**60.1**	**59.9**	**59.9**
2.3.1. Researchers	59.1	59.1	60.0	60.0
2.3.2. Gross expenditure on R&D (GERD)	82.7	82.7	85.0	85.0
2.3.3. Quality of scientific research institutions	38.7	38.7	34.7	34.7
3. Infrastructure	**62.0**	**63.5**	**62.8**	**63.9**
3.1. Information & Communication Technologies	**95.6**	**100.0**	**96.8**	**100.0**
3.1.1. ICT access	82.4	0.0	87.3	0.0
3.1.2. ICT use	100.0	0.0	100.0	0.0
3.1.3. Government's online service	100.0	100.0	100.0	100.0
3.1.4. E-participation	100.0	100.0	100.0	100.0
3.2. General infrastructure	**48.9**	**48.9**	**49.9**	**49.9**
3.2.1. Electricity output	31.2	31.2	36.8	36.8
3.2.2. Electricity consumption	35.7	35.7	36.3	36.3
3.2.3. Trade and transport-related infrastructure	63.6	63.6	63.6	63.6
3.2.4. Gross capital formation	49.6	49.6	49.6	49.6
3.3. Ecological sustainability	**41.6**	**41.6**	**41.6**	**41.6**
3.3.1. GDP per unit of energy use	23.3	23.3	23.3	23.3
3.3.2. Environmental performance	51.8	51.8	51.8	51.8
3.3.3. ISO 14001 environmental certificates	49.7	49.7	49.7	49.7

4. Market sophistication	**43.2**	**43.2**	**43.0**	**43.0**
4.1. Credit	**64.2**	**64.2**	**64.2**	**64.2**
4.1.1. Ease of getting credit	94.4	94.4	94.4	94.4
4.1.2. Domestic credit to private sector	34.1	34.1	34.1	34.1
4.1.3. Microfinance Institutions' gross loan portfolio	n/a	n/a	n/a	n/a
4.2. Investment	**25.4**	**25.4**	**25.4**	**25.4**
4.2.1. Ease of protecting investors	56.7	56.7	56.7	56.7
4.2.2. Market capitalization	14.5	14.5	8.0	8.0
4.2.3. Total value of stocks traded	25.0	25.0	22.3	22.3
4.2.4. Venture capital deals	5.3	5.3	14.4	14.4
4.3. Trade and competition	**40.1**	**40.1**	**39.5**	**39.5**
4.3.1. Applied tariff rate, weighted mean	64.7	64.7	55.7	55.7
4.3.2. Market access for non-agricultural exports	1.1	1.1	1.1	1.1
4.3.3. Imports of goods and services	17.0	17.0	16.6	16.6
4.3.4. Exports of goods and services	18.5	18.5	18.9	18.9
4.3.5. Intensity of local competition	76.8	76.8	83.4	83.4
5. Business sophistication	**33.9**	**33.9**	**34.1**	**34.1**
5.1. Knowledge workers	**53.0**	**53.0**	**52.2**	**52.2**
5.1.1. Employment in knowledge-intensive services	34.5	34.5	34.5	34.5
5.1.2. Firms offering formal training	34.2	34.2	34.2	34.2
5.1.3. GERD performed by business enterprise	87.7	87.7	87.2	87.2
5.1.4. GERD financed by business enterprise	84.6	84.6	78.3	78.3
5.1.5. GMAT mean score	88.1	88.1	88.1	88.1
5.1.6. GMAT test takers	26.5	26.5	26.5	26.5
5.2. Innovation linkages	**30.5**	**30.5**	**30.5**	**30.5**
5.2.1. University/industry research collaboration	57.5	57.5	55.7	55.7
5.2.2. State of cluster development	56.1	56.1	52.1	52.1
5.2.3. GERD financed by abroad	1.3	1.3	0.7	0.7
5.2.4. Joint venture / strategic alliance deals	14.5	14.5	27.0	27.0
5.2.5. Share of patents with foreign inventor	0.0	0.0	0.0	0.0
5.3. Knowledge absorption	**18.2**	**18.2**	**19.6**	**19.6**
5.3.1. Royalty and license fees payments	4.7	4.7	4.2	4.2
5.3.2. High-tech imports	20.8	20.8	20.8	20.8
5.3.3. Computer and communications service imports	46.7	46.7	46.7	46.7
5.3.4. Foreign direct investment net inflows	0.6	0.6	6.9	6.9
6. Knowledge and technology outputs	**39.5**	**41.0**	**38.6**	**39.1**
6.1. Knowledge creation	**59.6**	**64.0**	**57.9**	**59.4**
6.1.1. National office patent applications	100.0	100.0	100.0	100.0
6.1.2. Patent Cooperation Treaty applications	56.0	56.0	56.0	56.0
6.1.3. National office utility model applications	36.0	36.0	22.2	22.2
6.1.4. Scientific and technical journal articles	46.4	0.0	53.4	0.0
6.2. Knowledge impact	**26.4**	**26.4**	**27.2**	**27.2**
6.2.1. Growth rate of GDP per person engaged	33.3	33.3	35.9	35.9
6.2.2. New business density	8.4	8.4	8.4	8.4
6.2.3. Total computer software spending	14.1	14.1	12.8	12.8
6.2.4. ISO 9001 quality certificates	42.9	42.9	42.9	42.9
6.3. Knowledge diffusion	**32.6**	**32.6**	**30.6**	**30.6**
6.3.1. Royalty and license fees receipts	32.2	32.2	22.7	22.7
6.3.2. High-tech exports	63.1	63.1	63.1	63.1
6.3.3. Computer and communications service exports	30.8	30.8	30.8	30.8
6.3.4. Foreign direct investment net outflows	4.2	4.2	5.6	5.6
7. Creative outputs	**46.0**	**46.9**	**33.9**	**34.4**
7.1. Creative intangibles	**60.4**	**60.4**	**39.3**	**39.3**
7.1.1. National office trademark registrations	96.3	96.3	27.5	27.5
7.1.2. Madrid Agreement trademark registrations	1.7	1.7	1.8	1.8
7.1.3. ICT and business model creation	81.5	81.5	68.7	68.7
7.1.4. ICT and organizational models creation	62.2	62.2	59.0	59.0
7.2. Creative goods and services	**34.2**	**32.7**	**28.3**	**24.9**
7.2.1. Recreation and culture consumption	77.6	77.6	54.3	54.3
7.2.2. National feature films produced	20.9	0.0	20.9	0.0
7.2.3. Daily newspapers circulation	56.0	0.0	56.0	0.0
7.2.4. Creative goods exports	10.7	10.7	11.3	11.3
7.2.5. Creative services exports	9.9	9.9	9.1	9.1
7.3. Creation of online content	**28.9**	**34.2**	**28.9**	**34.2**
7.3.1. Generic top level domains (gTLDs)	12.1	12.1	12.1	12.1
7.3.2. Country-code top level domains (ccTLDs)	56.3	56.3	56.3	56.3
7.3.3. Wikipedia monthly edits	9.1	0.0	9.1	0.0
7.3.4. Video uploads on YouTube	38.0	0.0	38.0	0.0

Estonia (EE)	2011 Score (0-100) (Collected)	2011 Score (0-100) (Removed Media Indicator)	2012 Score (0-100) (Collected)	2012 Score (0-100) (Removed Media Indicator)
Key Indicators				
Population (millions)	**1.3**	**1.3**	**1.3**	**1.3**
GDP per capita, PPP$	**19,451.4**	**19,451.4**	**20,182.1**	**20,182.1**
GDP (US$ billion)	**19.1**	**19.1**	**22.5**	**22.5**
Innovation index	**44.7**	**41.9**	**46.4**	**43.7**
Innovation output sub-index	**39.5**	**34.6**	**44.0**	**38.3**
Innovation input sub-index	**50.0**	**49.3**	**48.8**	**49.1**
Innovation efficiency index	**0.8**	**0.7**	**0.9**	**0.8**
1. Institutions	**76.3**	**76.3**	**74.3**	**74.3**
1.1. Political environment	**81.4**	**81.4**	**79.0**	**79.0**
1.1.1 Political Stability	67.0	67.0	74.9	74.9
1.1.2. Government effectiveness	79.4	79.4	62.8	62.8
1.1.3. Press freedom	97.9	97.9	99.3	99.3
1.2. Regulatory environment	**80.6**	**80.6**	**77.0**	**77.0**
1.2.1. Regulatory quality	91.6	91.6	87.2	87.2
1.2.2. Rule of law	81.2	81.2	71.4	71.4
1.2.3. Cost of redundancy dismissal	74.7	74.7	74.7	74.7
1.3. Business environment	**66.9**	**66.9**	**66.9**	**66.9**
1.3.1. Ease of starting a business	78.9	78.9	78.9	78.9
1.3.2. Ease of resolving insolvency	46.7	46.7	46.7	46.7
1.3.3. Ease of paying taxes	75.3	75.3	75.3	75.3
2. Human capital and research	**44.1**	**44.1**	**44.5**	**44.5**
2.1. Education	**67.4**	**67.4**	**68.4**	**68.4**
2.1.1. Expenditure on education	50.2	50.2	46.5	46.5
2.1.2. Public expenditure on education per pupil	47.4	47.4	67.0	67.0
2.1.3. School life expectancy	71.4	71.4	66.7	66.7
2.1.4. Assessment in reading, mathematics, and science	73.8	73.8	73.8	73.8
2.1.5. Pupil-teacher ratio, secondary	97.4	97.4	90.8	90.8
2.2. Tertiary education	**29.2**	**29.2**	**28.2**	**28.2**
2.2.1. Tertiary enrolment	60.9	60.9	56.2	56.2
2.2.2. Graduates in science and engineering	17.7	17.7	17.7	17.7
2.2.3. Tertiary inbound mobility	4.1	4.1	4.1	4.1
2.2.4. Gross tertiary outbound enrolment	45.6	45.6	45.6	45.6
2.3. Research and development (R&D)	**35.7**	**35.7**	**36.7**	**36.7**
2.3.1. Researchers	50.5	50.5	51.2	51.2
2.3.2. Gross expenditure on R&D (GERD)	21.2	21.2	25.2	25.2
2.3.3. Quality of scientific research institutions	35.6	35.6	33.8	33.8
3. Infrastructure	**45.7**	**42.1**	**47.4**	**49.0**
3.1. Information & Communication Technologies	**59.9**	**49.1**	**63.7**	**68.6**
3.1.1. ICT access	82.3	0.0	67.9	0.0
3.1.2. ICT use	59.0	0.0	50.0	0.0
3.1.3. Government's online service	31.5	31.5	64.7	64.7
3.1.4. E-participation	66.7	66.7	72.4	72.4
3.2. General infrastructure	**23.5**	**23.5**	**24.5**	**24.5**
3.2.1. Electricity output	26.7	26.7	36.4	36.4
3.2.2. Electricity consumption	25.0	25.0	21.8	21.8
3.2.3. Trade and transport-related infrastructure	19.7	19.7	19.7	19.7
3.2.4. Gross capital formation	24.8	24.8	24.8	24.8
3.3. Ecological sustainability	**53.8**	**53.8**	**53.8**	**53.8**
3.3.1. GDP per unit of energy use	17.2	17.2	17.2	17.2
3.3.2. Environmental performance	49.1	49.1	49.1	49.1
3.3.3. ISO 14001 environmental certificates	95.2	95.2	95.2	95.2

4. Market sophistication	**45.7**	**45.7**	**42.2**	**42.2**
4.1. Credit	**52.0**	**52.0**	**52.0**	**52.0**
4.1.1. Ease of getting credit	71.8	71.8	71.8	71.8
4.1.2. Domestic credit to private sector	32.2	32.2	32.2	32.2
4.1.3. Microfinance Institutions' gross loan portfolio	n/a	n/a	n/a	n/a
4.2. Investment	**30.4**	**30.4**	**19.3**	**19.3**
4.2.1. Ease of protecting investors	65.6	65.6	65.6	65.6
4.2.2. Market capitalization	0.1	0.1	0.0	0.0
4.2.3. Total value of stocks traded	0.0	0.0	0.0	0.0
4.2.4. Venture capital deals	55.8	55.8	11.7	11.7
4.3. Trade and competition	**54.8**	**54.8**	**55.4**	**55.4**
4.3.1. Applied tariff rate, weighted mean	94.3	94.3	91.8	91.8
4.3.2. Market access for non-agricultural exports	31.7	31.7	31.7	31.7
4.3.3. Imports of goods and services	27.2	27.2	27.6	27.6
4.3.4. Exports of goods and services	28.4	28.4	31.2	31.2
4.3.5. Intensity of local competition	65.3	65.3	68.6	68.6
5. Business sophistication	**38.0**	**38.0**	**35.6**	**35.6**
5.1. Knowledge workers	**55.4**	**55.4**	**54.3**	**54.3**
5.1.1. Employment in knowledge-intensive services	72.0	72.0	72.0	72.0
5.1.2. Firms offering formal training	77.5	77.5	77.5	77.5
5.1.3. GERD performed by business enterprise	41.0	41.0	45.8	45.8
5.1.4. GERD financed by business enterprise	27.6	27.6	14.0	14.0
5.1.5. GMAT mean score	68.1	68.1	68.1	68.1
5.1.6. GMAT test takers	7.5	7.5	7.5	7.5
5.2. Innovation linkages	**38.2**	**38.2**	**33.3**	**33.3**
5.2.1. University/industry research collaboration	38.7	38.7	43.1	43.1
5.2.2. State of cluster development	7.1	7.1	16.0	16.0
5.2.3. GERD financed by abroad	88.3	88.3	63.7	63.7
5.2.4. Joint venture / strategic alliance deals	23.3	23.3	7.2	7.2
5.2.5. Share of patents with foreign inventor	13.9	13.9	13.9	13.9
5.3. Knowledge absorption	**20.5**	**20.5**	**19.1**	**19.1**
5.3.1. Royalty and license fees payments	0.7	0.7	1.0	1.0
5.3.2. High-tech imports	17.1	17.1	17.1	17.1
5.3.3. Computer and communications service imports	27.2	27.2	27.2	27.2
5.3.4. Foreign direct investment net inflows	36.8	36.8	31.2	31.2
6. Knowledge and technology outputs	**25.9**	**21.8**	**33.7**	**28.5**
6.1. Knowledge creation	**21.3**	**9.0**	**25.2**	**9.6**
6.1.1. National office patent applications	2.9	2.9	4.5	4.5
6.1.2. Patent Cooperation Treaty applications	8.6	8.6	8.6	8.6
6.1.3. National office utility model applications	15.6	15.6	15.7	15.7
6.1.4. Scientific and technical journal articles	58.2	0.0	72.0	0.0
6.2. Knowledge impact	**34.7**	**34.7**	**61.3**	**61.3**
6.2.1. Growth rate of GDP per person engaged	6.7	6.7	59.9	59.9
6.2.2. New business density	41.8	41.8	41.8	41.8
6.2.3. Total computer software spending	n/a	n/a	n/a	n/a
6.2.4. ISO 9001 quality certificates	83.5	83.5	83.5	83.5
6.3. Knowledge diffusion	**21.7**	**21.7**	**14.7**	**14.7**
6.3.1. Royalty and license fees receipts	10.4	10.4	7.4	7.4
6.3.2. High-tech exports	36.7	36.7	36.7	36.7
6.3.3. Computer and communications service exports	12.7	12.7	12.7	12.7
6.3.4. Foreign direct investment net outflows	27.1	27.1	1.9	1.9
7. Creative outputs	**53.1**	**47.3**	**54.3**	**48.1**
7.1. Creative intangibles	**48.2**	**48.2**	**53.0**	**53.0**
7.1.1. National office trademark registrations	50.7	50.7	64.7	64.7
7.1.2. Madrid Agreement trademark registrations	9.8	9.8	16.2	16.2
7.1.3. ICT and business model creation	68.3	68.3	75.7	75.7
7.1.4. ICT and organizational models creation	63.9	63.9	55.3	55.3
7.2. Creative goods and services	**44.9**	**45.0**	**40.1**	**38.7**
7.2.1. Recreation and culture consumption	83.9	83.9	53.4	53.4
7.2.2. National feature films produced	53.3	0.0	53.3	0.0
7.2.3. Daily newspapers circulation	35.5	0.0	35.5	0.0
7.2.4. Creative goods exports	33.4	33.4	45.4	45.4
7.2.5. Creative services exports	17.8	17.8	17.3	17.3
7.3. Creation of online content	**71.0**	**47.8**	**71.0**	**47.8**
7.3.1. Generic top level domains (gTLDs)	25.7	25.7	25.7	25.7
7.3.2. Country-code top level domains (ccTLDs)	69.9	69.9	69.9	69.9
7.3.3. Wikipedia monthly edits	100.0	0.0	100.0	0.0
7.3.4. Video uploads on YouTube	88.4	0.0	88.4	0.0

Malaysia (MY)	2011 Score (0-100) (Collected)	2011 Score (0-100) (Removed Media Indicator)	2012 Score (0-100) (Collected)	2012 Score (0-100) (Removed Media Indicator)
Key Indicators				
Population (millions)	**27.9**	**27.9**	**28.7**	**28.7**
GDP per capita, PPP$	**14,012.0**	**14,012.0**	**15,579.0**	**15,579.0**
GDP (US$ billion)	**193.1**	**193.1**	**247.6**	**247.6**
Innovation index	**35.7**	**35.2**	**36.7**	**36.2**
Innovation output sub-index	**29.1**	**28.8**	**30.0**	**29.5**
Innovation input sub-index	**42.4**	**41.7**	**43.3**	**42.8**
Innovation efficiency index	**0.7**	**0.7**	**0.7**	**0.7**
1. Institutions	**49.8**	**49.8**	**50.5**	**50.5**
1.1. Political environment	**54.1**	**54.1**	**57.1**	**57.1**
1.1.1 Political Stability	43.8	43.8	58.0	58.0
1.1.2. Government effectiveness	72.3	72.3	58.5	58.5
1.1.3. Press freedom	46.3	46.3	55.0	55.0
1.2. Regulatory environment	**37.8**	**37.8**	**36.9**	**36.9**
1.2.1. Regulatory quality	58.6	58.6	62.4	62.4
1.2.2. Rule of law	56.5	56.5	49.1	49.1
1.2.3. Cost of redundancy dismissal	18.1	18.1	18.1	18.1
1.3. Business environment	**57.3**	**57.3**	**57.3**	**57.3**
1.3.1. Ease of starting a business	34.4	34.4	34.4	34.4
1.3.2. Ease of resolving insolvency	60.0	60.0	60.0	60.0
1.3.3. Ease of paying taxes	77.5	77.5	77.5	77.5
2. Human capital and research	**33.0**	**33.0**	**35.3**	**35.3**
2.1. Education	**40.6**	**40.6**	**45.7**	**45.7**
2.1.1. Expenditure on education	40.0	40.0	41.8	41.8
2.1.2. Public expenditure on education per pupil	19.4	19.4	49.8	49.8
2.1.3. School life expectancy	29.7	29.7	23.5	23.5
2.1.4. Assessment in reading, mathematics, and science	32.1	32.1	32.1	32.1
2.1.5. Pupil-teacher ratio, secondary	77.3	77.3	74.4	74.4
2.2. Tertiary education	**45.7**	**45.7**	**46.2**	**46.2**
2.2.1. Tertiary enrolment	29.8	29.8	32.2	32.2
2.2.2. Graduates in science and engineering	78.0	78.0	78.0	78.0
2.2.3. Tertiary inbound mobility	14.9	14.9	14.9	14.9
2.2.4. Gross tertiary outbound enrolment	27.9	27.9	27.9	27.9
2.3. Research and development (R&D)	**12.6**	**12.6**	**14.0**	**14.0**
2.3.1. Researchers	5.9	5.9	5.6	5.6
2.3.2. Gross expenditure on R&D (GERD)	0.0	0.0	0.0	0.0
2.3.3. Quality of scientific research institutions	32.0	32.0	36.5	36.5
3. Infrastructure	**38.9**	**35.4**	**38.2**	**35.6**
3.1. Information & Communication Technologies	**45.9**	**56.4**	**43.4**	**50.7**
3.1.1. ICT access	36.0	0.0	34.8	0.0
3.1.2. ICT use	34.7	0.0	37.5	0.0
3.1.3. Government's online service	49.3	49.3	58.8	58.8
3.1.4. E-participation	63.4	63.4	42.5	42.5
3.2. General infrastructure	**32.7**	**32.7**	**32.9**	**32.9**
3.2.1. Electricity output	10.7	10.7	12.2	12.2
3.2.2. Electricity consumption	12.6	12.6	12.5	12.5
3.2.3. Trade and transport-related infrastructure	57.6	57.6	57.6	57.6
3.2.4. Gross capital formation	28.7	28.7	28.7	28.7
3.3. Ecological sustainability	**38.2**	**38.2**	**38.2**	**38.2**
3.3.1. GDP per unit of energy use	20.3	20.3	20.3	20.3
3.3.2. Environmental performance	65.0	65.0	65.0	65.0
3.3.3. ISO 14001 environmental certificates	29.4	29.4	29.4	29.4

4. Market sophistication	**48.6**	**48.6**	**48.8**	**48.8**
4.1. Credit	**47.2**	**47.2**	**47.2**	**47.2**
4.1.1. Ease of getting credit	100.0	100.0	100.0	100.0
4.1.2. Domestic credit to private sector	41.5	41.5	41.5	41.5
4.1.3. Microfinance Institutions' gross loan portfolio	0.0	0.0	0.0	0.0
4.2. Investment	**31.5**	**31.5**	**29.9**	**29.9**
4.2.1. Ease of protecting investors	98.9	98.9	98.9	98.9
4.2.2. Market capitalization	19.9	19.9	13.4	13.4
4.2.3. Total value of stocks traded	4.8	4.8	5.1	5.1
4.2.4. Venture capital deals	2.3	2.3	2.1	2.1
4.3. Trade and competition	**67.2**	**67.2**	**69.2**	**69.2**
4.3.1. Applied tariff rate, weighted mean	84.4	84.4	79.9	79.9
4.3.2. Market access for non-agricultural exports	89.4	89.4	89.4	89.4
4.3.3. Imports of goods and services	32.3	32.3	31.5	31.5
4.3.4. Exports of goods and services	40.7	40.7	40.3	40.3
4.3.5. Intensity of local competition	58.4	58.4	71.6	71.6
5. Business sophistication	**41.6**	**41.6**	**44.0**	**44.0**
5.1. Knowledge workers	**55.7**	**55.7**	**55.7**	**55.7**
5.1.1. Employment in knowledge-intensive services	44.6	44.6	44.6	44.6
5.1.2. Firms offering formal training	49.7	49.7	49.7	49.7
5.1.3. GERD performed by business enterprise	100.0	100.0	100.0	100.0
5.1.4. GERD financed by business enterprise	100.0	100.0	100.0	100.0
5.1.5. GMAT mean score	54.6	54.6	54.6	54.6
5.1.6. GMAT test takers	2.1	2.1	2.1	2.1
5.2. Innovation linkages	**44.5**	**44.5**	**47.9**	**47.9**
5.2.1. University/industry research collaboration	58.2	58.2	65.6	65.6
5.2.2. State of cluster development	79.1	79.1	81.3	81.3
5.2.3. GERD financed by abroad	1.1	1.1	0.0	0.0
5.2.4. Joint venture / strategic alliance deals	50.8	50.8	61.1	61.1
5.2.5. Share of patents with foreign inventor	28.5	28.5	28.5	28.5
5.3. Knowledge absorption	**24.5**	**24.5**	**28.4**	**28.4**
5.3.1. Royalty and license fees payments	3.0	3.0	2.5	2.5
5.3.2. High-tech imports	69.2	69.2	69.2	69.2
5.3.3. Computer and communications service imports	23.0	23.0	23.0	23.0
5.3.4. Foreign direct investment net inflows	2.8	2.8	19.0	19.0
6. Knowledge and technology outputs	**20.4**	**20.0**	**20.9**	**20.1**
6.1. Knowledge creation	**2.5**	**1.4**	**3.8**	**1.7**
6.1.1. National office patent applications	1.7	1.7	2.8	2.8
6.1.2. Patent Cooperation Treaty applications	2.4	2.4	2.4	2.4
6.1.3. National office utility model applications	0.0	0.0	0.0	0.0
6.1.4. Scientific and technical journal articles	5.8	0.0	10.2	0.0
6.2. Knowledge impact	**30.8**	**30.8**	**30.6**	**30.6**
6.2.1. Growth rate of GDP per person engaged	35.2	35.2	34.2	34.2
6.2.2. New business density	12.7	12.7	12.7	12.7
6.2.3. Total computer software spending	17.2	17.2	18.3	18.3
6.2.4. ISO 9001 quality certificates	53.6	53.6	53.6	53.6
6.3. Knowledge diffusion	**27.9**	**27.9**	**28.3**	**28.0**
6.3.1. Royalty and license fees receipts	11.3	11.3	9.8	9.8
6.3.2. High-tech exports	86.7	86.7	86.7	86.7
6.3.3. Computer and communications service exports	0.0	0.0	0.0	0.0
6.3.4. Foreign direct investment net outflows	13.7	13.7	16.8	15.6
7. Creative outputs	**37.8**	**37.6**	**39.1**	**38.9**
7.1. Creative intangibles	**52.2**	**52.2**	**55.3**	**55.3**
7.1.1. National office trademark registrations	29.3	29.3	11.3	11.3
7.1.2. Madrid Agreement trademark registrations	n/a	n/a	n/a	n/a
7.1.3. ICT and business model creation	59.7	59.7	79.0	79.0
7.1.4. ICT and organizational models creation	67.6	67.6	75.6	75.6
7.2. Creative goods and services	**22.8**	**26.4**	**22.0**	**25.3**
7.2.1. Recreation and culture consumption	41.9	41.9	32.9	32.9
7.2.2. National feature films produced	5.3	0.0	5.3	0.0
7.2.3. Daily newspapers circulation	19.1	0.0	19.1	0.0
7.2.4. Creative goods exports	18.1	18.1	27.8	27.8
7.2.5. Creative services exports	19.2	19.2	15.2	15.2
7.3. Creation of online content	**23.8**	**19.7**	**23.8**	**19.7**
7.3.1. Generic top level domains (gTLDs)	4.5	4.5	4.5	4.5
7.3.2. Country-code top level domains (ccTLDs)	34.9	34.9	34.9	34.9
7.3.3. Wikipedia monthly edits	5.2	0.0	5.2	0.0
7.3.4. Video uploads on YouTube	50.5	0.0	50.5	0.0

Qatar (QA)	2011 Score (0-100) (Collected)	2011 Score (0-100) (Removed Media Indicator)	2012 Score (0-100) (Collected)	2012 Score (0-100) (Removed Media Indicator)
Key Indicators				
Population (millions)	**1.5**	**1.5**	**1.8**	**1.8**
GDP per capita, PPP$	**91,378.7**	**91,378.7**	**102,891.2**	**102,891.2**
GDP (US$ billion)	**98.3**	**98.3**	**173.2**	**173.2**
Innovation index	**34.0**	**32.1**	**40.8**	**39.9**
Innovation output sub-index	**30.9**	**28.5**	**37.9**	**36.2**
Innovation input sub-index	**37.0**	**35.6**	**43.8**	**43.6**
Innovation efficiency index	**0.8**	**0.8**	**0.9**	**0.8**
1. Institutions	**63.7**	**63.7**	**58.9**	**58.9**
1.1. Political environment	**76.6**	**76.6**	**67.9**	**67.9**
1.1.1 Political Stability	91.9	91.9	89.2	89.2
1.1.2. Government effectiveness	78.1	78.1	52.7	52.7
1.1.3. Press freedom	59.8	59.8	61.8	61.8
1.2. Regulatory environment	**47.2**	**47.2**	41.5	41.5
1.2.1. Regulatory quality	69.9	69.9	61.3	61.3
1.2.2. Rule of law	75.9	75.9	61.7	61.7
1.2.3. Cost of redundancy dismissal	21.5	21.5	21.5	21.5
1.3. Business environment	**67.2**	**67.2**	67.2	67.2
1.3.1. Ease of starting a business	25.6	25.6	25.6	25.6
1.3.2. Ease of resolving insolvency	76.0	76.0	76.0	76.0
1.3.3. Ease of paying taxes	100.0	100.0	100.0	100.0
2. Human capital and research	**38.8**	**38.8**	**49.4**	**49.4**
2.1. Education	**28.1**	**28.1**	**29.9**	**29.9**
2.1.1. Expenditure on education	0.0	0.0	0.0	0.0
2.1.2. Public expenditure on education per pupil	0.0	0.0	19.2	19.2
2.1.3. School life expectancy	22.0	22.0	18.9	18.9
2.1.4. Assessment in reading, mathematics, and science	15.4	15.4	15.4	15.4
2.1.5. Pupil-teacher ratio, secondary	96.5	96.5	88.9	88.9
2.2. Tertiary education	**38.0**	**38.0**	**38.0**	**38.0**
2.2.1. Tertiary enrolment	0.0	0.0	0.0	0.0
2.2.2. Graduates in science and engineering	32.9	32.9	32.9	32.9
2.2.3. Tertiary inbound mobility	100.0	100.0	100.0	100.0
2.2.4. Gross tertiary outbound enrolment	24.3	24.3	24.3	24.3
2.3. Research and development (R&D)	**50.2**	**50.2**	**80.2**	**80.2**
2.3.1. Researchers	n/a	n/a	n/a	n/a
2.3.2. Gross expenditure on R&D (GERD)	n/a	n/a	n/a	n/a
2.3.3. Quality of scientific research institutions	50.2	50.2	80.2	80.2
3. Infrastructure	**29.1**	**22.0**	**39.1**	**38.3**
3.1. Information & Communication Technologies	**25.3**	**3.9**	**55.6**	**53.2**
3.1.1. ICT access	67.7	0.0	70.6	0.0
3.1.2. ICT use	25.5	0.0	45.5	0.0
3.1.3. Government's online service	1.4	1.4	49.0	49.0
3.1.4. E-participation	6.5	6.5	57.5	57.5
3.2. General infrastructure	**52.8**	**52.8**	52.4	52.4
3.2.1. Electricity output	60.2	60.2	58.6	58.6
3.2.2. Electricity consumption	65.3	65.3	64.1	64.1
3.2.3. Trade and transport-related infrastructure	19.7	19.7	19.7	19.7
3.2.4. Gross capital formation	76.1	76.1	76.1	76.1
3.3. Ecological sustainability	**9.3**	**9.3**	9.3	9.3
3.3.1. GDP per unit of energy use	0.0	0.0	0.0	0.0
3.3.2. Environmental performance	25.6	25.6	25.6	25.6
3.3.3. ISO 14001 environmental certificates	2.2	2.2	2.2	2.2

4. Market sophistication	**29.1**	**29.1**	**27.5**	**27.5**
4.1. Credit	**3.9**	**3.9**	**3.9**	**3.9**
4.1.1. Ease of getting credit	0.0	0.0	0.0	0.0
4.1.2. Domestic credit to private sector	7.9	7.9	7.9	7.9
4.1.3. Microfinance Institutions' gross loan portfolio	n/a	n/a	n/a	n/a
4.2. Investment	**17.5**	**17.5**	**13.6**	**13.6**
4.2.1. Ease of protecting investors	44.4	44.4	44.4	44.4
4.2.2. Market capitalization	20.1	20.1	6.5	6.5
4.2.3. Total value of stocks traded	5.3	5.3	3.4	3.4
4.2.4. Venture capital deals	0.0	0.0	0.0	0.0
4.3. Trade and competition	**65.9**	**65.9**	**65.1**	**65.1**
4.3.1. Applied tariff rate, weighted mean	81.6	81.6	80.9	80.9
4.3.2. Market access for non-agricultural exports	70.6	70.6	70.6	70.6
4.3.3. Imports of goods and services	9.2	9.2	7.5	7.5
4.3.4. Exports of goods and services	17.0	17.0	16.2	16.2
4.3.5. Intensity of local competition	98.4	98.4	97.0	97.0
5. Business sophistication	**24.5**	**24.5**	**44.2**	**44.2**
5.1. Knowledge workers	**19.5**	**19.5**	**19.5**	**19.5**
5.1.1. Employment in knowledge-intensive services	38.6	38.6	38.6	38.6
5.1.2. Firms offering formal training	n/a	n/a	n/a	n/a
5.1.3. GERD performed by business enterprise	n/a	n/a	n/a	n/a
5.1.4. GERD financed by business enterprise	n/a	n/a	n/a	n/a
5.1.5. GMAT mean score	0.0	0.0	0.0	0.0
5.1.6. GMAT test takers	0.9	0.9	0.9	0.9
5.2. Innovation linkages	**54.0**	**54.0**	**81.0**	**81.0**
5.2.1. University/industry research collaboration	51.3	51.3	79.8	79.8
5.2.2. State of cluster development	67.9	67.9	76.7	76.7
5.2.3. GERD financed by abroad	n/a	n/a	n/a	n/a
5.2.4. Joint venture / strategic alliance deals	31.9	31.9	91.9	91.9
5.2.5. Share of patents with foreign inventor	n/a	n/a	n/a	n/a
5.3. Knowledge absorption	**0.0**	**0.0**	**31.9**	**31.9**
5.3.1. Royalty and license fees payments	n/a	n/a	n/a	n/a
5.3.2. High-tech imports	n/a	n/a	n/a	n/a
5.3.3. Computer and communications service imports	n/a	n/a	n/a	n/a
5.3.4. Foreign direct investment net inflows	n/a	n/a	31.9	31.9
6. Knowledge and technology outputs	**22.2**	**22.2**	**22.2**	**22.2**
6.1. Knowledge creation	**0.0**	**0.0**	**0.0**	**0.0**
6.1.1. National office patent applications	n/a	n/a	n/a	n/a
6.1.2. Patent Cooperation Treaty applications	n/a	n/a	n/a	n/a
6.1.3. National office utility model applications	n/a	n/a	n/a	n/a
6.1.4. Scientific and technical journal articles	0.0	0.0	0.0	0.0
6.2. Knowledge impact	**66.7**	**66.7**	**66.7**	**66.7**
6.2.1. Growth rate of GDP per person engaged	100.0	100.0	100.0	100.0
6.2.2. New business density	n/a	n/a	n/a	n/a
6.2.3. Total computer software spending	n/a	n/a	n/a	n/a
6.2.4. ISO 9001 quality certificates	0.0	0.0	0.0	0.0
6.3. Knowledge diffusion	**0.0**	**0.0**	**0.0**	**0.0**
6.3.1. Royalty and license fees receipts	n/a	n/a	n/a	n/a
6.3.2. High-tech exports	0.0	0.0	0.0	0.0
6.3.3. Computer and communications service exports	n/a	n/a	n/a	n/a
6.3.4. Foreign direct investment net outflows	n/a	n/a	n/a	n/a
7. Creative outputs	**39.7**	**34.8**	**53.6**	**50.2**
7.1. Creative intangibles	**68.6**	**68.6**	**87.7**	**87.7**
7.1.1. National office trademark registrations	n/a	n/a	n/a	n/a
7.1.2. Madrid Agreement trademark registrations	n/a	n/a	n/a	n/a
7.1.3. ICT and business model creation	62.1	62.1	82.7	82.7
7.1.4. ICT and organizational models creation	75.1	75.1	92.6	92.6
7.2. Creative goods and services	**3.4**	**0.0**	**20.8**	**23.5**
7.2.1. Recreation and culture consumption	n/a	n/a	47.0	47.0
7.2.2. National feature films produced	n/a	0.0	n/a	0.0
7.2.3. Daily newspapers circulation	10.1	0.0	10.1	0.0
7.2.4. Creative goods exports	0.0	0.0	0.0	0.0
7.2.5. Creative services exports	n/a	n/a	n/a	n/a
7.3. Creation of online content	**18.1**	**1.8**	**18.1**	**1.8**
7.3.1. Generic top level domains (gTLDs)	3.6	3.6	3.6	3.6
7.3.2. Country-code top level domains (ccTLDs)	0.0	0.0	0.0	0.0
7.3.3. Wikipedia monthly edits	9.9	0.0	9.9	0.0
7.3.4. Video uploads on YouTube	58.7	0.0	58.7	0.0

China (CN)	2011 Score (0-100) (Collected)	2011 Score (0-100) (Removed Media Indicator)	2012 Score (0-100) (Collected)	2012 Score (0-100) (Removed Media Indicator)
Key Indicators				
Population (millions)	**1,354.1**	**1,354.1**	**1,348.1**	**1,348.1**
GDP per capita, PPP$	**6,828.0**	**6,828.0**	**8,394.1**	**8,394.1**
GDP (US$ billion)	**4,985.5**	**4,985.5**	**6,988.5**	**6,988.5**
Innovation index	**35.9**	**36.8**	**34.9**	**36.0**
Innovation output sub-index	**37.9**	**40.5**	**39.8**	**42.3**
Innovation input sub-index	**34.0**	**33.0**	**30.1**	**29.7**
Innovation efficiency index	**1.1**	**1.2**	**1.3**	**1.4**
1. Institutions	**24.7**	**24.7**	**20.2**	**20.2**
1.1. Political environment	**26.0**	**26.0**	**16.9**	**16.9**
1.1.1 Political Stability	24.3	24.3	27.1	27.1
1.1.2. Government effectiveness	43.2	43.2	23.1	23.1
1.1.3. Press freedom	10.5	10.5	0.4	0.4
1.2. Regulatory environment	**19.0**	**19.0**	**14.6**	**14.6**
1.2.1. Regulatory quality	44.3	44.3	39.3	39.3
1.2.2. Rule of law	31.8	31.8	19.2	19.2
1.2.3. Cost of redundancy dismissal	0.0	0.0	0.0	0.0
1.3. Business environment	**29.1**	**29.1**	**29.1**	**29.1**
1.3.1. Ease of starting a business	10.0	10.0	10.0	10.0
1.3.2. Ease of resolving insolvency	49.3	49.3	49.3	49.3
1.3.3. Ease of paying taxes	28.1	28.1	28.1	28.1
2. Human capital and research	**21.0**	**21.0**	**19.9**	**19.9**
2.1. Education	**39.2**	**39.2**	**37.0**	**37.0**
2.1.1. Expenditure on education	0.2	0.2	0.4	0.4
2.1.2. Public expenditure on education per pupil	n/a	n/a	n/a	n/a
2.1.3. School life expectancy	16.1	16.1	11.9	11.9
2.1.4. Assessment in reading, mathematics, and science	100.0	100.0	100.0	100.0
2.1.5. Pupil-teacher ratio, secondary	71.0	71.0	67.3	67.3
2.2. Tertiary education	**6.6**	**6.6**	**6.9**	**6.9**
2.2.1. Tertiary enrolment	16.3	16.3	17.0	17.0
2.2.2. Graduates in science and engineering	n/a	n/a	n/a	n/a
2.2.3. Tertiary inbound mobility	0.0	0.0	0.0	0.0
2.2.4. Gross tertiary outbound enrolment	3.6	3.6	3.6	3.6
2.3. Research and development (R&D)	**17.3**	**17.3**	**15.7**	**15.7**
2.3.1. Researchers	9.4	9.4	9.1	9.1
2.3.2. Gross expenditure on R&D (GERD)	26.0	26.0	26.2	26.2
2.3.3. Quality of scientific research institutions	16.4	16.4	11.7	11.7
3. Infrastructure	**41.5**	**36.6**	**33.9**	**31.9**
3.1. Information & Communication Technologies	**37.6**	**23.0**	**14.5**	**8.5**
3.1.1. ICT access	26.9	0.0	22.3	0.0
3.1.2. ICT use	77.5	0.0	18.6	0.0
3.1.3. Government's online service	13.7	13.7	7.8	7.8
3.1.4. E-participation	32.3	32.3	9.2	9.2
3.2. General infrastructure	**55.7**	**55.7**	**55.9**	**55.9**
3.2.1. Electricity output	7.0	7.0	8.2	8.2
3.2.2. Electricity consumption	8.1	8.1	8.3	8.3
3.2.3. Trade and transport-related infrastructure	59.6	59.6	59.6	59.6
3.2.4. Gross capital formation	100.0	100.0	100.0	100.0
3.3. Ecological sustainability	**31.2**	**31.2**	**31.2**	**31.2**
3.3.1. GDP per unit of energy use	26.7	26.7	26.7	26.7
3.3.2. Environmental performance	14.9	14.9	14.9	14.9
3.3.3. ISO 14001 environmental certificates	52.1	52.1	52.1	52.1

4. Market sophistication	**44.2**	**44.2**	**38.0**	**38.0**
4.1. Credit	**66.8**	**66.8**	**51.6**	**51.6**
4.1.1. Ease of getting credit	50.7	50.7	50.7	50.7
4.1.2. Domestic credit to private sector	49.6	49.6	49.6	49.6
4.1.3. Microfinance Institutions' gross loan portfolio	100.0	100.0	54.5	54.5
4.2. Investment	**23.6**	**23.6**	**19.9**	**19.9**
4.2.1. Ease of protecting investors	44.4	44.4	44.4	44.4
4.2.2. Market capitalization	14.5	14.5	5.8	5.8
4.2.3. Total value of stocks traded	23.6	23.6	19.0	19.0
4.2.4. Venture capital deals	11.7	11.7	10.2	10.2
4.3. Trade and competition	**42.2**	**42.2**	**42.4**	**42.4**
4.3.1. Applied tariff rate, weighted mean	80.5	80.5	78.2	78.2
4.3.2. Market access for non-agricultural exports	7.5	7.5	7.5	7.5
4.3.3. Imports of goods and services	4.5	4.5	4.7	4.7
4.3.4. Exports of goods and services	7.4	7.4	8.1	8.1
4.3.5. Intensity of local competition	74.7	74.7	77.5	77.5
5. Business sophistication	**38.5**	**38.5**	**38.5**	**38.5**
5.1. Knowledge workers	**58.3**	**58.3**	**58.1**	**58.1**
5.1.1. Employment in knowledge-intensive services	0.0	0.0	0.0	0.0
5.1.2. Firms offering formal training	100.0	100.0	100.0	100.0
5.1.3. GERD performed by business enterprise	82.1	82.1	84.3	84.3
5.1.4. GERD financed by business enterprise	79.9	79.9	76.2	76.2
5.1.5. GMAT mean score	98.8	98.8	98.8	98.8
5.1.6. GMAT test takers	5.6	5.6	5.6	5.6
5.2. Innovation linkages	**39.0**	**39.0**	**36.8**	**36.8**
5.2.1. University/industry research collaboration	54.0	54.0	50.6	50.6
5.2.2. State of cluster development	86.7	86.7	78.1	78.1
5.2.3. GERD financed by abroad	7.7	7.7	6.0	6.0
5.2.4. Joint venture / strategic alliance deals	14.5	14.5	25.0	25.0
5.2.5. Share of patents with foreign inventor	0.2	0.2	0.2	0.2
5.3. Knowledge absorption	**18.1**	**18.1**	**20.7**	**20.7**
5.3.1. Royalty and license fees payments	0.5	0.5	0.5	0.5
5.3.2. High-tech imports	49.1	49.1	49.1	49.1
5.3.3. Computer and communications service imports	16.8	16.8	16.8	16.8
5.3.4. Foreign direct investment net inflows	6.2	6.2	16.3	16.3
6. Knowledge and technology outputs	**42.8**	**44.5**	**42.7**	**44.5**
6.1. Knowledge creation	**40.2**	**45.5**	**41.9**	**47.3**
6.1.1. National office patent applications	26.7	26.7	31.9	31.9
6.1.2. Patent Cooperation Treaty applications	9.9	9.9	9.9	9.9
6.1.3. National office utility model applications	100.0	100.0	100.0	100.0
6.1.4. Scientific and technical journal articles	24.3	0.0	25.8	0.0
6.2. Knowledge impact	**56.9**	**56.9**	**54.8**	**54.8**
6.2.1. Growth rate of GDP per person engaged	66.8	66.8	63.1	63.1
6.2.2. New business density	n/a	n/a	n/a	n/a
6.2.3. Total computer software spending	15.6	15.6	14.7	14.7
6.2.4. ISO 9001 quality certificates	78.2	78.2	78.2	78.2
6.3. Knowledge diffusion	**31.2**	**31.2**	**31.3**	**31.3**
6.3.1. Royalty and license fees receipts	0.0	0.0	0.5	0.5
6.3.2. High-tech exports	78.9	78.9	78.9	78.9
6.3.3. Computer and communications service exports	43.0	43.0	43.0	43.0
6.3.4. Foreign direct investment net outflows	2.9	2.9	3.0	3.0
7. Creative outputs	**33.0**	**36.5**	**36.9**	**40.2**
7.1. Creative intangibles	**48.9**	**48.9**	**52.9**	**52.9**
7.1.1. National office trademark registrations	100.0	100.0	100.0	100.0
7.1.2. Madrid Agreement trademark registrations	2.3	2.3	1.5	1.5
7.1.3. ICT and business model creation	48.6	48.6	51.9	51.9
7.1.4. ICT and organizational models creation	44.8	44.8	58.1	58.1
7.2. Creative goods and services	**26.2**	**35.8**	**33.7**	**42.7**
7.2.1. Recreation and culture consumption	n/a	n/a	34.8	34.8
7.2.2. National feature films produced	0.0	0.0	0.0	0.0
7.2.3. Daily newspapers circulation	13.8	0.0	13.8	0.0
7.2.4. Creative goods exports	64.7	64.7	87.0	87.0
7.2.5. Creative services exports	6.9	6.9	6.2	6.2
7.3. Creation of online content	**8.2**	**12.3**	**8.2**	**12.3**
7.3.1. Generic top level domains (gTLDs)	0.9	0.9	0.9	0.9
7.3.2. Country-code top level domains (ccTLDs)	23.7	23.7	23.7	23.7
7.3.3. Wikipedia monthly edits	0.0	0.0	0.0	0.0
7.3.4. Video uploads on YouTube	n/a	0.0	n/a	0.0

Iran, Islamic Rep.	2011 Score (0-100) (Collected)	2011 Score (0-100) (Removed Media Indicator)	2012 Score (0-100) (Collected)	2012 Score (0-100) (Removed Media Indicator)
Key Indicators				
Population (millions)	**75.1**	**75.1**	**75.9**	**75.9**
GDP per capita, PPP$	**11,585.4**	**11,585.4**	**12,258.2**	**12,258.2**
GDP (US$ billion)	**331.0**	**331.0**	**475.1**	**475.1**
Innovation index	**12.6**	**12.7**	**10.9**	**10.5**
Innovation output sub-index	**9.1**	**9.6**	**4.9**	**4.5**
Innovation input sub-index	**16.2**	**15.8**	**17.0**	**16.5**
Innovation efficiency index	**0.6**	**0.6**	**0.3**	**0.3**
1. Institutions	**17.1**	**17.1**	**17.1**	**17.1**
1.1. Political environment	**0.0**	**0.0**	**0.0**	**0.0**
1.1.1 Political Stability	0.0	0.0	0.0	0.0
1.1.2. Government effectiveness	0.0	0.0	0.0	0.0
1.1.3. Press freedom	0.0	0.0	0.0	0.0
1.2. Regulatory environment	**11.1**	**11.1**	**11.1**	**11.1**
1.2.1. Regulatory quality	0.0	0.0	0.0	0.0
1.2.2. Rule of law	0.0	0.0	0.0	0.0
1.2.3. Cost of redundancy dismissal	22.1	22.1	22.1	22.1
1.3. Business environment	**40.3**	**40.3**	**40.3**	**40.3**
1.3.1. Ease of starting a business	75.6	75.6	75.6	75.6
1.3.2. Ease of resolving insolvency	16.0	16.0	16.0	16.0
1.3.3. Ease of paying taxes	29.2	29.2	29.2	29.2
2. Human capital and research	**29.1**	**29.1**	**30.6**	**30.6**
2.1. Education	**37.6**	**37.6**	**38.2**	**38.2**
2.1.1. Expenditure on education	40.0	40.0	41.1	41.1
2.1.2. Public expenditure on education per pupil	41.3	41.3	38.6	38.6
2.1.3. School life expectancy	31.5	31.5	30.2	30.2
2.1.4. Assessment in reading, mathematics, and science	n/a	n/a	n/a	n/a
2.1.5. Pupil-teacher ratio, secondary	n/a	n/a	43.0	43.0
2.2. Tertiary education	**46.5**	**46.5**	**47.5**	**47.5**
2.2.1. Tertiary enrolment	29.9	29.9	34.9	34.9
2.2.2. Graduates in science and engineering	100.0	100.0	100.0	100.0
2.2.3. Tertiary inbound mobility	0.0	0.0	0.0	0.0
2.2.4. Gross tertiary outbound enrolment	2.5	2.5	2.5	2.5
2.3. Research and development (R&D)	**3.1**	**3.1**	**6.1**	**6.1**
2.3.1. Researchers	8.1	8.1	13.2	13.2
2.3.2. Gross expenditure on R&D (GERD)	1.3	1.3	5.0	5.0
2.3.3. Quality of scientific research institutions	0.0	0.0	0.0	0.0
3. Infrastructure	**13.7**	**11.7**	**14.1**	**11.7**
3.1. Information & Communication Technologies	**8.8**	**2.9**	**10.2**	**2.9**
3.1.1. ICT access	21.3	0.0	33.3	0.0
3.1.2. ICT use	13.8	0.0	1.9	0.0
3.1.3. Government's online service	0.0	0.0	0.0	0.0
3.1.4. E-participation	0.0	5.7	5.7	5.7
3.2. General infrastructure	**22.9**	**22.9**	**22.6**	**22.6**
3.2.1. Electricity output	8.4	8.4	8.1	8.1
3.2.2. Electricity consumption	8.0	8.0	6.7	6.7
3.2.3. Trade and transport-related infrastructure	0.0	0.0	0.0	0.0
3.2.4. Gross capital formation	60.5	60.5	60.5	60.5
3.3. Ecological sustainability	**9.5**	**9.5**	**9.5**	**9.5**
3.3.1. GDP per unit of energy use	7.9	7.9	7.9	7.9
3.3.2. Environmental performance	16.1	16.1	16.1	16.1
3.3.3. ISO 14001 environmental certificates	4.5	4.5	4.5	4.5

4. Market sophistication	**10.8**	**10.8**	**10.6**	**10.6**
4.1. Credit	**13.4**	**13.4**	**13.4**	**13.4**
4.1.1. Ease of getting credit	26.8	26.8	26.8	26.8
4.1.2. Domestic credit to private sector	0.0	0.0	0.0	0.0
4.1.3. Microfinance Institutions' gross loan portfolio	n/a	n/a	n/a	n/a
4.2. Investment	**0.4**	**0.4**	**0.3**	**0.3**
4.2.1. Ease of protecting investors	0.0	0.0	0.0	0.0
4.2.2. Market capitalization	1.0	1.0	0.6	0.6
4.2.3. Total value of stocks traded	0.4	0.4	0.5	0.5
4.2.4. Venture capital deals	0.0	0.0	0.0	0.0
4.3. Trade and competition	**18.6**	**18.6**	**18.3**	**18.3**
4.3.1. Applied tariff rate, weighted mean	0.0	0.0	0.0	0.0
4.3.2. Market access for non-agricultural exports	67.2	67.2	67.2	67.2
4.3.3. Imports of goods and services	4.0	4.0	2.7	2.7
4.3.4. Exports of goods and services	10.0	10.0	9.3	9.3
4.3.5. Intensity of local competition	0.0	0.0	0.0	0.0
5. Business sophistication	**10.4**	**10.4**	**12.4**	**12.4**
5.1. Knowledge workers	**10.9**	**10.9**	**10.9**	**10.9**
5.1.1. Employment in knowledge-intensive services	17.6	17.6	17.6	17.6
5.1.2. Firms offering formal training	n/a	n/a	n/a	n/a
5.1.3. GERD performed by business enterprise	0.0	0.0	0.0	0.0
5.1.4. GERD financed by business enterprise	0.0	0.0	0.0	0.0
5.1.5. GMAT mean score	30.1	30.1	30.1	30.1
5.1.6. GMAT test takers	0.0	0.0	0.0	0.0
5.2. Innovation linkages	**16.7**	**16.7**	**16.7**	**16.7**
5.2.1. University/industry research collaboration	0.0	0.0	0.0	0.0
5.2.2. State of cluster development	0.0	0.0	0.0	0.0
5.2.3. GERD financed by abroad	n/a	n/a	n/a	n/a
5.2.4. Joint venture / strategic alliance deals	0.0	0.0	0.0	0.0
5.2.5. Share of patents with foreign inventor	100.0	100.0	100.0	100.0
5.3. Knowledge absorption	**3.5**	**3.5**	**9.6**	**9.6**
5.3.1. Royalty and license fees payments	n/a	n/a	n/a	n/a
5.3.2. High-tech imports	n/a	n/a	n/a	n/a
5.3.3. Computer and communications service imports	n/a	n/a	n/a	n/a
5.3.4. Foreign direct investment net inflows	3.5	3.5	9.6	9.6
6. Knowledge and technology outputs	**9.0**	**7.5**	**5.9**	**3.5**
6.1. Knowledge creation	**12.5**	**7.9**	**16.3**	**9.2**
6.1.1. National office patent applications	7.9	7.9	9.2	9.2
6.1.2. Patent Cooperation Treaty applications	n/a	n/a	n/a	n/a
6.1.3. National office utility model applications	n/a	n/a	n/a	n/a
6.1.4. Scientific and technical journal articles	17.0	0.0	23.3	0.0
6.2. Knowledge impact	**14.6**	**14.6**	**1.4**	**1.4**
6.2.1. Growth rate of GDP per person engaged	26.3	26.3	0.0	0.0
6.2.2. New business density	n/a	n/a	n/a	n/a
6.2.3. Total computer software spending	0.0	0.0	0.0	0.0
6.2.4. ISO 9001 quality certificates	5.7	5.7	5.7	5.7
6.3. Knowledge diffusion	**0.0**	**0.0**	0.0	0.0
6.3.1. Royalty and license fees receipts	n/a	n/a	n/a	n/a
6.3.2. High-tech exports	n/a	n/a	n/a	n/a
6.3.3. Computer and communications service exports	n/a	n/a	n/a	n/a
6.3.4. Foreign direct investment net outflows	0.0	n/a	0.0	n/a
7. Creative outputs	**9.1**	**11.8**	**3.8**	**5.5**
7.1. Creative intangibles	**6.9**	**6.9**	**0.0**	**0.0**
7.1.1. National office trademark registrations	27.0	27.0	0.0	0.0
7.1.2. Madrid Agreement trademark registrations	0.6	0.6	0.0	0.0
7.1.3. ICT and business model creation	0.0	0.0	0.0	0.0
7.1.4. ICT and organizational models creation	0.0	0.0	0.0	0.0
7.2. Creative goods and services	**13.0**	**19.5**	**5.6**	**8.3**
7.2.1. Recreation and culture consumption	27.1	27.1	0.0	0.0
7.2.2. National feature films produced	0.3	0.3	0.3	0.0
7.2.3. Daily newspapers circulation	0.0	0.0	0.0	0.0
7.2.4. Creative goods exports	11.8	11.8	16.6	16.6
7.2.5. Creative services exports	n/a	n/a	n/a	n/a
7.3. Creation of online content	**9.7**	**13.7**	**9.7**	**13.7**
7.3.1. Generic top level domains (gTLDs)	1.2	1.2	1.2	1.2
7.3.2. Country-code top level domains (ccTLDs)	26.2	26.2	26.2	26.2
7.3.3. Wikipedia monthly edits	1.7	0.0	1.7	0.0
7.3.4. Video uploads on YouTube	n/a	0.0	n/a	0.0

India (IN)	2011 Score (0-100) (Collected)	2011 Score (0-100) (Removed Media Indicator)	2012 Score (0-100) (Collected)	2012 Score (0-100) (Removed Media Indicator)
Key Indicators				
Population (millions)	**1,214.5**	**1,214.5**	**1,206.9**	**1,206.9**
GDP per capita, PPP$	**3,270.1**	**3,270.1**	**3,703.5**	**3,703.5**
GDP (US$ billion)	**1,310.2**	**1,310.2**	**1,843.4**	**1,843.4**
Innovation index	**23.1**	**23.4**	**22.3**	**22.5**
Innovation output sub-index	**24.0**	**23.9**	**23.7**	**23.9**
Innovation input sub-index	**22.3**	**22.8**	**20.9**	**21.1**
Innovation efficiency index	**1.1**	**1.1**	**1.1**	**1.1**
1. Institutions	**28.6**	**28.6**	**24.3**	**24.3**
1.1. Political environment	**34.2**	**34.2**	**26.9**	**26.9**
1.1.1 Political Stability	5.4	5.4	8.8	8.8
1.1.2. Government effectiveness	38.1	38.1	18.4	18.4
1.1.3. Press freedom	59.0	59.0	53.6	53.6
1.2. Regulatory environment	**51.8**	**51.8**	**46.0**	**46.0**
1.2.1. Regulatory quality	42.4	42.4	34.8	34.8
1.2.2. Rule of law	44.7	44.7	29.3	29.3
1.2.3. Cost of redundancy dismissal	60.0	60.0	60.0	60.0
1.3. Business environment	**0.0**	**0.0**	**0.0**	**0.0**
1.3.1. Ease of starting a business	0.0	0.0	0.0	0.0
1.3.2. Ease of resolving insolvency	0.0	0.0	0.0	0.0
1.3.3. Ease of paying taxes	0.0	0.0	0.0	0.0
2. Human capital and research	**7.0**	**7.0**	**5.2**	**5.2**
2.1. Education	**6.7**	**6.7**	**5.0**	**5.0**
2.1.1. Expenditure on education	24.6	24.6	22.7	22.7
2.1.2. Public expenditure on education per pupil	5.7	5.7	0.0	0.0
2.1.3. School life expectancy	0.0	0.0	0.0	0.0
2.1.4. Assessment in reading, mathematics, and science	0.0	0.0	0.0	0.0
2.1.5. Pupil-teacher ratio, secondary	0.0	0.0	0.0	0.0
2.2. Tertiary education	**1.2**	**1.2**	**2.2**	**2.2**
2.2.1. Tertiary enrolment	3.7	3.7	6.7	6.7
2.2.2. Graduates in science and engineering	n/a	n/a	n/a	n/a
2.2.3. Tertiary inbound mobility	0.0	0.0	0.0	0.0
2.2.4. Gross tertiary outbound enrolment	0.0	0.0	0.0	0.0
2.3. Research and development (R&D)	**12.9**	**12.9**	**8.3**	**8.3**
2.3.1. Researchers	0.0	0.0	0.0	0.0
2.3.2. Gross expenditure on R&D (GERD)	5.4	5.4	4.0	4.0
2.3.3. Quality of scientific research institutions	33.3	33.3	20.7	20.7
3. Infrastructure	**17.2**	**19.5**	**16.2**	**17.5**
3.1. Information & Communication Technologies	**6.9**	**13.8**	**3.9**	**7.8**
3.1.1. ICT access	0.0	0.0	0.0	0.0
3.1.2. ICT use	0.0	0.0	0.0	0.0
3.1.3. Government's online service	13.7	13.7	9.8	9.8
3.1.4. E-participation	14.0	14.0	5.7	5.7
3.2. General infrastructure	**30.9**	**30.9**	**30.9**	**30.9**
3.2.1. Electricity output	0.0	0.0	0.0	0.0
3.2.2. Electricity consumption	0.0	0.0	0.0	0.0
3.2.3. Trade and transport-related infrastructure	27.8	27.8	27.8	27.8
3.2.4. Gross capital formation	64.8	64.8	64.8	64.8
3.3. Ecological sustainability	**13.8**	**13.8**	**13.8**	**13.8**
3.3.1. GDP per unit of energy use	36.1	36.1	36.1	36.1
3.3.2. Environmental performance	0.0	0.0	0.0	0.0
3.3.3. ISO 14001 environmental certificates	5.2	5.2	5.2	5.2

4. Market sophistication	**40.5**	**40.5**	**40.6**	**40.6**
4.1. Credit	**55.8**	**55.8**	**59.5**	**59.5**
4.1.1. Ease of getting credit	71.8	71.8	71.8	71.8
4.1.2. Domestic credit to private sector	6.6	6.6	6.6	6.6
4.1.3. Microfinance Institutions' gross loan portfolio	88.9	88.9	100.0	100.0
4.2. Investment	**27.2**	**27.2**	**26.4**	**26.4**
4.2.1. Ease of protecting investors	74.4	74.4	74.4	74.4
4.2.2. Market capitalization	12.7	12.7	6.8	6.8
4.2.3. Total value of stocks traded	10.8	10.8	8.4	8.4
4.2.4. Venture capital deals	10.9	10.9	16.2	16.2
4.3. Trade and competition	**38.4**	**38.4**	**35.8**	**35.8**
4.3.1. Applied tariff rate, weighted mean	69.7	69.7	58.1	58.1
4.3.2. Market access for non-agricultural exports	12.8	12.8	12.8	12.8
4.3.3. Imports of goods and services	6.0	6.0	4.3	4.3
4.3.4. Exports of goods and services	4.5	4.5	4.2	4.2
4.3.5. Intensity of local competition	65.8	65.8	68.0	68.0
5. Business sophistication	**18.3**	**18.3**	**18.2**	**18.2**
5.1. Knowledge workers	**22.1**	**22.1**	**21.0**	**21.0**
5.1.1. Employment in knowledge-intensive services	n/a	n/a	n/a	n/a
5.1.2. Firms offering formal training	0.0	0.0	0.0	0.0
5.1.3. GERD performed by business enterprise	21.8	21.8	31.4	31.4
5.1.4. GERD financed by business enterprise	21.9	21.9	5.6	5.6
5.1.5. GMAT mean score	85.8	85.8	85.8	85.8
5.1.6. GMAT test takers	3.0	3.0	3.0	3.0
5.2. Innovation linkages	**26.5**	**26.5**	**26.9**	**26.9**
5.2.1. University/industry research collaboration	21.5	21.5	22.5	22.5
5.2.2. State of cluster development	47.4	47.4	43.8	43.8
5.2.3. GERD financed by abroad	n/a	n/a	n/a	n/a
5.2.4. Joint venture / strategic alliance deals	18.9	18.9	26.3	26.3
5.2.5. Share of patents with foreign inventor	2.2	2.2	2.2	2.2
5.3. Knowledge absorption	**6.3**	**6.3**	**6.6**	**6.6**
5.3.1. Royalty and license fees payments	0.0	0.0	0.1	0.1
5.3.2. High-tech imports	0.0	0.0	0.0	0.0
5.3.3. Computer and communications service imports	15.3	15.3	15.3	15.3
5.3.4. Foreign direct investment net inflows	10.0	10.0	11.1	11.1
6. Knowledge and technology outputs	**18.3**	**16.4**	**17.1**	**15.3**
6.1. Knowledge creation	**6.2**	**0.7**	**6.2**	**0.9**
6.1.1. National office patent applications	1.4	1.4	1.8	1.8
6.1.2. Patent Cooperation Treaty applications	0.0	0.0	0.0	0.0
6.1.3. National office utility model applications	n/a	n/a	n/a	n/a
6.1.4. Scientific and technical journal articles	17.3	17.3	16.8	0.0
6.2. Knowledge impact	**23.0**	**23.0**	**19.8**	**19.8**
6.2.1. Growth rate of GDP per person engaged	47.6	47.6	40.0	40.0
6.2.2. New business density	0.0	0.0	0.0	0.0
6.2.3. Total computer software spending	1.6	1.6	0.9	0.9
6.2.4. ISO 9001 quality certificates	18.2	18.2	18.2	18.2
6.3. Knowledge diffusion	**25.6**	**25.6**	**25.3**	**25.3**
6.3.1. Royalty and license fees receipts	0.0	0.0	0.0	0.0
6.3.2. High-tech exports	12.7	12.7	12.7	12.7
6.3.3. Computer and communications service exports	86.2	86.2	86.2	86.2
6.3.4. Foreign direct investment net outflows	3.6	3.6	2.2	2.2
7. Creative outputs	**29.7**	**31.4**	**30.3**	**32.4**
7.1. Creative intangibles	**47.3**	**47.3**	**44.6**	**44.6**
7.1.1. National office trademark registrations	30.6	30.6	n/a	n/a
7.1.2. Madrid Agreement trademark registrations	n/a	n/a	n/a	n/a
7.1.3. ICT and business model creation	48.6	48.6	55.1	55.1
7.1.4. ICT and organizational models creation	46.1	46.1	34.1	34.1
7.2. Creative goods and services	**20.9**	**24.8**	**28.8**	**34.2**
7.2.1. Recreation and culture consumption	0.0	3.4	3.4	3.4
7.2.2. National feature films produced	6.2	0.0	6.2	0.0
7.2.3. Daily newspapers circulation	18.8	0.0	18.8	0.0
7.2.4. Creative goods exports	52.8	52.8	87.5	87.5
7.2.5. Creative services exports	18.2	18.2	11.7	11.7
7.3. Creation of online content	**3.3**	**6.4**	**3.3**	**6.4**
7.3.1. Generic top level domains (gTLDs)	0.0	0.0	0.0	0.0
7.3.2. Country-code top level domains (ccTLDs)	12.7	12.7	12.7	12.7
7.3.3. Wikipedia monthly edits	0.5	0.0	0.5	0.0
7.3.4. Video uploads on YouTube	0.0	0.0	0.0	0.0

Norway (NO)	2011 Score (0-100) (Collected)	2011 Score (0-100) (Removed Media Indicator)	2012 Score (0-100) (Collected)	2012 Score (0-100) (Removed Media Indicator)
Key Indicators				
Population (millions)	**4.9**	**4.9**	**5.0**	**5.0**
GDP per capita, PPP$	**55,672.1**	**55,672.1**	**53,376.2**	**53,376.2**
GDP (US$ billion)	**381.8**	**381.8**	**479.3**	**479.3**
Innovation index	**49.3**	**47.3**	**48.9**	**46.8**
Innovation output sub-index	**38.8**	**35.6**	**38.3**	**34.5**
Innovation input sub-index	**59.9**	**59.0**	**59.5**	**59.0**
Innovation efficiency index	**0.6**	**0.6**	**0.6**	**0.6**
1. Institutions	**93.6**	**93.6**	**92.5**	**92.5**
1.1. Political environment	**96.0**	**96.0**	**93.4**	**93.4**
1.1.1 Political Stability	95.1	95.1	96.9	96.9
1.1.2. Government effectiveness	92.9	92.9	83.4	83.4
1.1.3. Press freedom	100.0	100.0	100.0	100.0
1.2. Regulatory environment	**95.6**	**95.6**	94.9	94.9
1.2.1. Regulatory quality	91.1	91.1	88.0	88.0
1.2.2. Rule of law	98.2	98.2	98.6	98.6
1.2.3. Cost of redundancy dismissal	96.5	96.5	96.5	96.5
1.3. Business environment	**89.1**	**89.1**	89.1	89.1
1.3.1. Ease of starting a business	81.1	81.1	81.1	81.1
1.3.2. Ease of resolving insolvency	98.7	98.7	98.7	98.7
1.3.3. Ease of paying taxes	87.6	87.6	87.6	87.6
2. Human capital and research	**55.0**	**55.0**	**52.8**	**52.8**
2.1. Education	**78.7**	**78.7**	**76.2**	**76.2**
2.1.1. Expenditure on education	75.4	75.4	77.3	77.3
2.1.2. Public expenditure on education per pupil	73.3	73.3	69.0	69.0
2.1.3. School life expectancy	92.6	92.6	86.2	86.2
2.1.4. Assessment in reading, mathematics, and science	68.2	68.2	68.2	68.2
2.1.5. Pupil-teacher ratio, secondary	100.0	100.0	93.3	n/a
2.2. Tertiary education	**31.1**	**31.1**	30.3	30.3
2.2.1. Tertiary enrolment	71.7	71.7	68.0	68.0
2.2.2. Graduates in science and engineering	4.0	4.0	4.0	4.0
2.2.3. Tertiary inbound mobility	20.5	20.5	20.5	20.5
2.2.4. Gross tertiary outbound enrolment	55.1	55.1	55.1	55.1
2.3. Research and development (R&D)	**55.2**	**55.2**	52.0	52.0
2.3.1. Researchers	87.3	87.3	88.8	88.8
2.3.2. Gross expenditure on R&D (GERD)	31.7	31.7	36.4	36.4
2.3.3. Quality of scientific research institutions	46.7	46.7	30.6	30.6
3. Infrastructure	**63.2**	**58.7**	**65.4**	**62.9**
3.1. Information & Communication Technologies	**69.0**	**55.3**	**75.4**	**67.9**
3.1.1. ICT access	86.9	0.0	82.4	0.0
3.1.2. ICT use	78.5	0.0	83.4	0.0
3.1.3. Government's online service	64.4	64.4	72.5	72.5
3.1.4. E-participation	46.2	46.2	63.2	63.2
3.2. General infrastructure	**74.1**	**74.1**	**74.1**	**74.1**
3.2.1. Electricity output	100.0	100.0	100.0	100.0
3.2.2. Electricity consumption	100.0	100.0	100.0	100.0
3.2.3. Trade and transport-related infrastructure	93.9	93.9	93.9	93.9
3.2.4. Gross capital formation	28.5	28.5	28.5	28.5
3.3. Ecological sustainability	**46.5**	**46.5**	**46.5**	**46.5**
3.3.1. GDP per unit of energy use	31.7	31.7	31.7	31.7
3.3.2. Environmental performance	83.3	83.3	83.3	83.3
3.3.3. ISO 14001 environmental certificates	24.6	24.6	24.6	24.6

4. Market sophistication	**50.5**	**50.5**	**50.9**	**50.9**
4.1. Credit	**46.5**	**46.5**	**46.5**	**46.5**
4.1.1. Ease of getting credit	66.2	66.2	66.2	66.2
4.1.2. Domestic credit to private sector	26.7	26.7	26.7	26.7
4.1.3. Microfinance Institutions' gross loan portfolio	n/a	n/a	n/a	n/a
4.2. Investment	**38.2**	**38.2**	**40.0**	**40.0**
4.2.1. Ease of protecting investors	88.9	88.9	88.9	88.9
4.2.2. Market capitalization	7.7	7.7	4.1	4.1
4.2.3. Total value of stocks traded	8.4	8.4	7.1	7.1
4.2.4. Venture capital deals	48.1	48.1	59.8	59.8
4.3. Trade and competition	**66.7**	**66.7**	**66.4**	**66.4**
4.3.1. Applied tariff rate, weighted mean	97.9	97.9	97.8	97.8
4.3.2. Market access for non-agricultural exports	90.2	90.2	90.2	90.2
4.3.3. Imports of goods and services	7.1	7.1	6.2	6.2
4.3.4. Exports of goods and services	14.7	14.7	13.9	13.9
4.3.5. Intensity of local competition	67.9	67.9	67.5	67.5
5. Business sophistication	**37.2**	**37.2**	**36.1**	**36.1**
5.1. Knowledge workers	**50.8**	**50.8**	**48.0**	**48.0**
5.1.1. Employment in knowledge-intensive services	82.7	82.7	82.7	82.7
5.1.2. Firms offering formal training	n/a	n/a	n/a	n/a
5.1.3. GERD performed by business enterprise	56.1	56.1	56.5	56.5
5.1.4. GERD financed by business enterprise	44.2	44.2	26.8	26.8
5.1.5. GMAT mean score	24.5	24.5	24.5	24.5
5.1.6. GMAT test takers	14.7	14.7	14.7	14.7
5.2. Innovation linkages	**50.4**	**50.4**	**49.0**	**49.0**
5.2.1. University/industry research collaboration	64.0	64.0	60.9	60.9
5.2.2. State of cluster development	66.3	66.3	62.6	62.6
5.2.3. GERD financed by abroad	47.3	47.3	46.2	46.2
5.2.4. Joint venture / strategic alliance deals	32.4	32.4	36.9	36.9
5.2.5. Share of patents with foreign inventor	15.6	15.6	15.6	15.6
5.3. Knowledge absorption	**10.5**	**10.5**	**11.4**	**11.4**
5.3.1. Royalty and license fees payments	0.0	0.0	0.0	0.0
5.3.2. High-tech imports	10.5	10.5	10.5	10.5
5.3.3. Computer and communications service imports	19.5	19.5	19.5	19.5
5.3.4. Foreign direct investment net inflows	11.8	11.8	15.5	15.5
6. Knowledge and technology outputs	**23.4**	**18.7**	**20.8**	**15.8**
6.1. Knowledge creation	**26.6**	**12.7**	**28.4**	**13.6**
6.1.1. National office patent applications	4.8	4.8	6.7	6.7
6.1.2. Patent Cooperation Treaty applications	20.6	20.6	20.6	20.6
6.1.3. National office utility model applications	n/a	n/a	n/a	n/a
6.1.4. Scientific and technical journal articles	54.4	0.0	58.0	0.0
6.2. Knowledge impact	**23.6**	**23.6**	**19.2**	**19.2**
6.2.1. Growth rate of GDP per person engaged	20.4	20.4	7.0	7.0
6.2.2. New business density	22.9	22.9	22.9	22.9
6.2.3. Total computer software spending	38.3	38.3	43.1	43.1
6.2.4. ISO 9001 quality certificates	15.9	15.9	15.9	15.9
6.3. Knowledge diffusion	**19.9**	**19.9**	**14.9**	**14.6**
6.3.1. Royalty and license fees receipts	13.9	13.9	8.5	8.5
6.3.2. High-tech exports	9.9	9.9	9.9	9.9
6.3.3. Computer and communications service exports	32.6	32.6	32.6	32.6
6.3.4. Foreign direct investment net outflows	23.2	23.2	8.8	7.5
7. Creative outputs	**54.2**	**52.4**	**55.7**	**53.2**
7.1. Creative intangibles	**41.3**	**43.2**	**43.2**	**43.2**
7.1.1. National office trademark registrations	0.4	40.1	40.1	40.1
7.1.2. Madrid Agreement trademark registrations	8.8	12.8	12.8	12.8
7.1.3. ICT and business model creation	76.5	83.6	83.6	83.6
7.1.4. ICT and organizational models creation	79.3	36.4	36.4	36.4
7.2. Creative goods and services	**50.0**	**44.2**	**52.2**	**47.1**
7.2.1. Recreation and culture consumption	93.8	93.8	100.0	100.0
7.2.2. National feature films produced	34.9	0.0	34.9	0.0
7.2.3. Daily newspapers circulation	100.0	0.0	100.0	0.0
7.2.4. Creative goods exports	2.5	2.5	2.6	2.6
7.2.5. Creative services exports	36.4	36.4	38.9	38.9
7.3. Creation of online content	**84.2**	**79.1**	**84.2**	**79.1**
7.3.1. Generic top level domains (gTLDs)	74.2	74.2	74.2	74.2
7.3.2. Country-code top level domains (ccTLDs)	84.0	84.0	84.0	84.0
7.3.3. Wikipedia monthly edits	89.7	0.0	89.7	0.0
7.3.4. Video uploads on YouTube	88.8	0.0	88.8	0.0

Germany (DE)	2011 Score (0-100) (Collected)	2011 Score (0-100) (Removed Media Indicator)	2012 Score (0-100) (Collected)	2012 Score (0-100) (Removed Media Indicator)
Key Indicators				
Population (millions)	**82.1**	**82.1**	**81.4**	**81.4**
GDP per capita, PPP$	**36,267.4**	**36,267.4**	**37,935.5**	**37,935.5**
GDP (US$ billion)	**3,330.0**	**3,330.0**	**3,628.6**	**3,628.6**
Innovation index	**47.1**	**47.4**	**46.6**	**47.2**
Innovation output sub-index	**41.8**	**43.7**	**41.4**	**43.2**
Innovation input sub-index	**52.3**	**51.1**	**51.8**	**51.2**
Innovation efficiency index	**0.8**	**0.9**	**0.8**	**0.8**
1. Institutions	**68.8**	**68.8**	**67.0**	**67.0**
1.1. Political environment	**87.6**	**87.6**	**83.5**	**83.5**
1.1.1 Political Stability	78.4	78.4	80.7	80.7
1.1.2. Government effectiveness	89.0	89.0	74.7	74.7
1.1.3. Press freedom	95.5	95.5	95.2	95.2
1.2. Regulatory environment	**60.9**	**60.9**	**59.8**	**59.8**
1.2.1. Regulatory quality	92.1	92.1	90.9	90.9
1.2.2. Rule of law	91.2	91.2	88.2	88.2
1.2.3. Cost of redundancy dismissal	30.1	30.1	30.1	30.1
1.3. Business environment	**57.7**	**57.7**	**57.7**	**57.7**
1.3.1. Ease of starting a business	47.8	47.8	47.8	47.8
1.3.2. Ease of resolving insolvency	76.0	76.0	76.0	76.0
1.3.3. Ease of paying taxes	49.4	49.4	49.4	49.4
2. Human capital and research	**54.0**	**54.0**	**52.2**	**52.2**
2.1. Education	**64.7**	**64.7**	**62.8**	**62.8**
2.1.1. Expenditure on education	44.3	44.3	45.0	45.0
2.1.2. Public expenditure on education per pupil	n/a	n/a	n/a	n/a
2.1.3. School life expectancy	n/a	n/a	n/a	n/a
2.1.4. Assessment in reading, mathematics, and science	72.3	72.3	72.3	72.3
2.1.5. Pupil-teacher ratio, secondary	81.4	81.4	76.0	76.0
2.2. Tertiary education	**30.9**	**30.9**	**30.9**	**30.9**
2.2.1. Tertiary enrolment	n/a	n/a	n/a	n/a
2.2.2. Graduates in science and engineering	34.9	34.9	34.9	34.9
2.2.3. Tertiary inbound mobility	n/a	n/a	n/a	n/a
2.2.4. Gross tertiary outbound enrolment	23.0	23.0	23.0	23.0
2.3. Research and development (R&D)	**66.2**	**66.2**	**62.7**	**62.7**
2.3.1. Researchers	51.9	51.9	50.4	50.4
2.3.2. Gross expenditure on R&D (GERD)	61.2	61.2	68.2	68.2
2.3.3. Quality of scientific research institutions	85.3	85.3	69.4	69.4
3. Infrastructure	**52.0**	**46.1**	**54.0**	**50.8**
3.1. Information & Communication Technologies	**65.7**	**48.2**	**71.2**	**61.7**
3.1.1. ICT access	96.0	0.0	90.3	0.0
3.1.2. ICT use	70.4	0.0	71.3	0.0
3.1.3. Government's online service	38.4	38.4	51.0	51.0
3.1.4. E-participation	58.1	58.1	72.4	72.4
3.2. General infrastructure	**47.7**	**47.7**	**48.2**	**48.2**
3.2.1. Electricity output	24.1	24.1	27.6	27.6
3.2.2. Electricity consumption	26.7	26.7	26.5	26.5
3.2.3. Trade and transport-related infrastructure	100.0	100.0	100.0	100.0
3.2.4. Gross capital formation	17.7	17.7	17.7	17.7
3.3. Ecological sustainability	**42.5**	**42.5**	**42.5**	**42.5**
3.3.1. GDP per unit of energy use	37.8	37.8	37.8	37.8
3.3.2. Environmental performance	75.8	75.8	75.8	75.8
3.3.3. ISO 14001 environmental certificates	13.7	13.7	13.7	13.7

4. Market sophistication	**46.0**	**46.0**	**46.4**	**46.4**
4.1. Credit	**61.1**	**61.1**	**61.1**	**61.1**
4.1.1. Ease of getting credit	84.5	84.5	84.5	84.5
4.1.2. Domestic credit to private sector	37.8	37.8	37.8	37.8
4.1.3. Microfinance Institutions' gross loan portfolio	n/a	n/a	n/a	n/a
4.2. Investment	**17.0**	**17.0**	**20.4**	**20.4**
4.2.1. Ease of protecting investors	44.4	44.4	44.4	44.4
4.2.2. Market capitalization	4.2	4.2	2.6	2.6
4.2.3. Total value of stocks traded	4.9	4.9	5.7	5.7
4.2.4. Venture capital deals	14.5	14.5	28.7	28.7
4.3. Trade and competition	**59.7**	**59.7**	**57.6**	**57.6**
4.3.1. Applied tariff rate, weighted mean	94.3	94.3	91.8	91.8
4.3.2. Market access for non-agricultural exports	31.7	31.7	31.7	31.7
4.3.3. Imports of goods and services	11.6	11.6	12.5	12.5
4.3.4. Exports of goods and services	14.2	14.2	16.3	16.3
4.3.5. Intensity of local competition	100.0	100.0	92.3	92.3
5. Business sophistication	**40.8**	**40.8**	**39.5**	**39.5**
5.1. Knowledge workers	**56.9**	**56.9**	**55.7**	**55.7**
5.1.1. Employment in knowledge-intensive services	79.1	79.1	79.1	79.1
5.1.2. Firms offering formal training	28.2	28.2	28.2	28.2
5.1.3. GERD performed by business enterprise	78.9	78.9	77.5	77.5
5.1.4. GERD financed by business enterprise	76.4	76.4	67.9	67.9
5.1.5. GMAT mean score	72.3	72.3	72.3	72.3
5.1.6. GMAT test takers	13.0	13.0	13.0	13.0
5.2. Innovation linkages	**50.7**	**50.7**	**46.4**	**46.4**
5.2.1. University/industry research collaboration	78.9	78.9	75.5	75.5
5.2.2. State of cluster development	85.7	85.7	71.7	71.7
5.2.3. GERD financed by abroad	22.8	22.8	21.8	21.8
5.2.4. Joint venture / strategic alliance deals	11.6	11.6	14.3	14.3
5.2.5. Share of patents with foreign inventor	19.2	19.2	19.2	19.2
5.3. Knowledge absorption	**14.9**	**14.9**	**16.4**	**16.4**
5.3.1. Royalty and license fees payments	1.8	1.8	1.5	1.5
5.3.2. High-tech imports	19.3	19.3	19.3	19.3
5.3.3. Computer and communications service imports	33.8	33.8	33.8	33.8
5.3.4. Foreign direct investment net inflows	4.6	4.6	11.2	11.2
6. Knowledge and technology outputs	**31.0**	**29.1**	**32.6**	**30.7**
6.1. Knowledge creation	**32.7**	**27.1**	**35.3**	**29.7**
6.1.1. National office patent applications	17.3	17.3	27.8	27.8
6.1.2. Patent Cooperation Treaty applications	49.9	49.9	49.9	49.9
6.1.3. National office utility model applications	14.2	14.2	11.4	11.4
6.1.4. Scientific and technical journal articles	49.4	0.0	52.4	0.0
6.2. Knowledge impact	**27.7**	**27.7**	**29.8**	**29.8**
6.2.1. Growth rate of GDP per person engaged	24.8	24.8	24.1	24.1
6.2.2. New business density	5.6	5.6	5.6	5.6
6.2.3. Total computer software spending	39.8	39.8	51.4	51.4
6.2.4. ISO 9001 quality certificates	43.7	43.7	43.7	43.7
6.3. Knowledge diffusion	**32.4**	**32.4**	**32.8**	**32.8**
6.3.1. Royalty and license fees receipts	34.8	34.8	32.4	32.4
6.3.2. High-tech exports	36.0	36.0	36.0	36.0
6.3.3. Computer and communications service exports	53.0	53.0	53.0	53.0
6.3.4. Foreign direct investment net outflows	5.9	5.9	9.7	9.7
7. Creative outputs	**52.7**	**58.3**	**50.2**	**55.7**
7.1. Creative intangibles	**44.3**	**44.3**	**39.4**	**39.4**
7.1.1. National office trademark registrations	21.8	21.8	58.0	58.0
7.1.2. Madrid Agreement trademark registrations	19.1	19.1	15.9	15.9
7.1.3. ICT and business model creation	72.0	72.0	58.9	58.9
7.1.4. ICT and organizational models creation	64.3	64.3	24.9	24.9
7.2. Creative goods and services	**44.9**	**49.1**	**44.5**	**48.6**
7.2.1. Recreation and culture consumption	73.8	73.8	67.8	67.8
7.2.2. National feature films produced	11.9	0.0	11.9	0.0
7.2.3. Daily newspapers circulation	52.9	0.0	52.9	0.0
7.2.4. Creative goods exports	25.8	25.8	30.9	30.9
7.2.5. Creative services exports	47.6	47.6	47.0	47.0
7.3. Creation of online content	**77.3**	**95.4**	**77.3**	**95.4**
7.3.1. Generic top level domains (gTLDs)	98.9	98.9	98.9	98.9
7.3.2. Country-code top level domains (ccTLDs)	91.9	91.9	91.9	91.9
7.3.3. Wikipedia monthly edits	41.7	0.0	41.7	0.0
7.3.4. Video uploads on YouTube	76.7	0.0	76.7	0.0

Ireland (IE)	2011 Score (0-100) (Collected)	2011 Score (0-100) (Removed Media	2012 Score (0-100) (Collected)	2012 Score (0-100) (Removed Media
Key Indicators				
Population (millions)	**4.6**	**4.6**	**4.6**	**4.6**
GDP per capita, PPP$	**41.278.2**	**41.278.2**	**39,507.9**	**39,507.9**
GDP (US$ billion)	**227.2**	**227.2**	**222.3**	**222.3**
Innovation index	**49.7**	**47.7**	**50.8**	**48.1**
Innovation output sub-index	**35.5**	**32.8**	**38.7**	**35.5**
Innovation input sub-index	**63.9**	**62.7**	**63.0**	**60.8**
Innovation efficiency index	**0.6**	**0.5**	**0.6**	**0.6**
1. Institutions	**94.6**	**94.6**	**92.2**	**92.2**
1.1. Political environment	**89.6**	**89.6**	**83.0**	**83.0**
1.1.1 Political Stability	87.0	87.0	87.1	87.1
1.1.2. Government effectiveness	83.9	83.9	66.1	66.1
1.1.3. Press freedom	97.9	97.9	95.9	95.9
1.2. Regulatory environment	**97.0**	**97.0**	**96.4**	**96.4**
1.2.1. Regulatory quality	95.1	95.1	92.9	92.9
1.2.2. Rule of law	92.9	92.9	92.7	92.7
1.2.3. Cost of redundancy dismissal	100.0	100.0	100.0	100.0
1.3. Business environment	**97.2**	**97.2**	**97.2**	**97.2**
1.3.1. Ease of starting a business	96.7	96.7	96.7	96.7
1.3.2. Ease of resolving insolvency	96.0	96.0	96.0	96.0
1.3.3. Ease of paying taxes	98.9	98.9	98.9	98.9
2. Human capital and research	**55.2**	**55.2**	**55.7**	**55.7**
2.1. Education	**81.8**	**81.8**	**80.2**	**80.2**
2.1.1. Expenditure on education	60.1	60.1	60.9	60.9
2.1.2. Public expenditure on education per pupil	n/a	n/a	n/a	n/a
2.1.3. School life expectancy	100.0	100.0	100.0	100.0
2.1.4. Assessment in reading, mathematics, and science	66.8	66.8	66.8	66.8
2.1.5. Pupil-teacher ratio, secondary	92.7	92.7	86.5	86.5
2.2. Tertiary education	**41.1**	**41.1**	**41.0**	**41.0**
2.2.1. Tertiary enrolment	54.7	54.7	54.3	54.3
2.2.2. Graduates in science and engineering	25.0	25.0	25.0	25.0
2.2.3. Tertiary inbound mobility	18.2	18.2	18.2	18.2
2.2.4. Gross tertiary outbound enrolment	82.2	82.2	82.2	82.2
2.3. Research and development (R&D)	**42.7**	**42.7**	**45.8**	**45.8**
2.3.1. Researchers	43.2	43.2	45.9	45.9
2.3.2. Gross expenditure on R&D (GERD)	25.3	25.3	35.5	35.5
2.3.3. Quality of scientific research institutions	59.6	59.6	55.9	55.9
3. Infrastructure	**43.2**	**37.0**	**37.7**	**26.8**
3.1. Information & Communication Technologies	**54.4**	**35.6**	**37.5**	**4.9**
3.1.1. ICT access	83.3	0.0	75.9	0.0
3.1.2. ICT use	63.0	0.0	64.4	0.0
3.1.3. Government's online service	31.5	31.5	9.8	9.8
3.1.4. E-participation	39.8	39.8	0.0	0.0
3.2. General infrastructure	**30.6**	**30.6**	**30.9**	**30.9**
3.2.1. Electricity output	19.9	19.9	22.7	22.7
3.2.2. Electricity consumption	22.6	22.6	21.6	21.6
3.2.3. Trade and transport-related infrastructure	70.7	70.7	70.7	70.7
3.2.4. Gross capital formation	0.0	0.0	0.0	0.0
3.3. Ecological sustainability	**44.6**	**44.6**	**44.6**	**44.6**
3.3.1. GDP per unit of energy use	53.9	53.9	53.9	53.9
3.3.2. Environmental performance	55.5	55.5	55.5	55.5
3.3.3. ISO 14001 environmental certificates	24.3	24.3	24.3	24.3

4. Market sophistication	**61.5**	**61.5**	**64.1**	**64.1**
4.1. Credit	**93.3**	**93.3**	**93.3**	**93.3**
4.1.1. Ease of getting credit	94.4	94.4	94.4	94.4
4.1.2. Domestic credit to private sector	92.1	92.1	92.1	92.1
4.1.3. Microfinance Institutions' gross loan portfolio	n/a	n/a	n/a	n/a
4.2. Investment	**39.2**	**39.2**	**47.3**	**47.3**
4.2.1. Ease of protecting investors	98.9	98.9	98.9	98.9
4.2.2. Market capitalization	0.0	0.0	0.4	0.4
4.2.3. Total value of stocks traded	0.8	0.8	0.9	0.9
4.2.4. Venture capital deals	57.3	57.3	89.2	89.2
4.3. Trade and competition	**51.9**	**51.9**	**51.7**	**51.7**
4.3.1. Applied tariff rate, weighted mean	94.3	94.3	91.8	91.8
4.3.2. Market access for non-agricultural exports	31.7	31.7	31.7	31.7
4.3.3. Imports of goods and services	31.6	31.6	31.8	31.8
4.3.4. Exports of goods and services	36.9	36.9	41.0	41.0
4.3.5. Intensity of local competition	47.4	47.4	46.7	46.7
5. Business sophistication	**65.1**	**65.1**	**65.2**	**65.2**
5.1. Knowledge workers	**63.8**	**63.8**	**62.6**	**62.6**
5.1.1. Employment in knowledge-intensive services	72.1	72.1	72.1	72.1
5.1.2. Firms offering formal training	83.1	83.1	83.1	83.1
5.1.3. GERD performed by business enterprise	71.7	71.7	74.9	74.9
5.1.4. GERD financed by business enterprise	50.3	50.3	37.2	37.2
5.1.5. GMAT mean score	62.5	62.5	62.5	62.5
5.1.6. GMAT test takers	15.5	15.5	15.5	15.5
5.2. Innovation linkages	**61.7**	**61.7**	**63.0**	**63.0**
5.2.1. University/industry research collaboration	68.6	68.6	67.6	67.6
5.2.2. State of cluster development	45.4	45.4	46.1	46.1
5.2.3. GERD financed by abroad	90.4	90.4	87.7	87.7
5.2.4. Joint venture / strategic alliance deals	21.8	21.8	38.8	38.8
5.2.5. Share of patents with foreign inventor	62.6	62.6	62.6	62.6
5.3. Knowledge absorption	**69.8**	**69.8**	**70.1**	**70.1**
5.3.1. Royalty and license fees payments	100.0	100.0	100.0	100.0
5.3.2. High-tech imports	34.5	34.5	34.5	34.5
5.3.3. Computer and communications service imports	100.0	100.0	100.0	100.0
5.3.4. Foreign direct investment net inflows	44.6	44.6	45.7	45.7
6. Knowledge and technology outputs	**36.8**	**33.4**	**41.7**	**37.2**
6.1. Knowledge creation	**21.6**	**11.3**	**25.8**	**12.5**
6.1.1. National office patent applications	5.0	5.0	7.4	7.4
6.1.2. Patent Cooperation Treaty applications	17.6	17.6	17.6	17.6
6.1.3. National office utility model applications	n/a	n/a	n/a	n/a
6.1.4. Scientific and technical journal articles	42.2	0.0	52.2	0.0
6.2. Knowledge impact	**29.4**	**29.4**	**38.0**	**38.0**
6.2.1. Growth rate of GDP per person engaged	18.6	18.6	27.2	27.2
6.2.2. New business density	23.9	23.9	23.9	23.9
6.2.3. Total computer software spending	53.1	53.1	78.9	78.9
6.2.4. ISO 9001 quality certificates	32.9	32.9	32.9	32.9
6.3. Knowledge diffusion	**59.4**	**59.4**	**61.2**	**61.2**
6.3.1. Royalty and license fees receipts	64.3	64.3	81.3	81.3
6.3.2. High-tech exports	51.5	51.5	51.5	51.5
6.3.3. Computer and communications service exports	86.7	86.7	86.7	86.7
6.3.4. Foreign direct investment net outflows	35.0	35.0	25.3	25.3
7. Creative outputs	**34.1**	**32.2**	**35.7**	**33.7**
7.1. Creative intangibles	**22.9**	**22.9**	**26.1**	**26.1**
7.1.1. National office trademark registrations	0.0	0.0	31.9	31.9
7.1.2. Madrid Agreement trademark registrations	2.0	2.0	2.1	2.1
7.1.3. ICT and business model creation	43.6	43.6	55.1	55.1
7.1.4. ICT and organizational models creation	46.1	46.1	15.2	15.2
7.2. Creative goods and services	**28.7**	**24.2**	**28.4**	**23.9**
7.2.1. Recreation and culture consumption	47.8	47.8	46.0	46.0
7.2.2. National feature films produced	46.9	0.0	46.9	0.0
7.2.3. Daily newspapers circulation	37.4	0.0	37.4	0.0
7.2.4. Creative goods exports	18.8	18.8	17.9	17.9
7.2.5. Creative services exports	5.9	5.9	7.7	7.7
7.3. Creation of online content	**62.1**	**58.7**	**62.1**	**58.7**
7.3.1. Generic top level domains (gTLDs)	51.0	51.0	51.0	51.0
7.3.2. Country-code top level domains (ccTLDs)	66.4	66.4	66.4	66.4
7.3.3. Wikipedia monthly edits	40.1	0.0	40.1	0.0
7.3.4. Video uploads on YouTube	90.8	0.0	90.8	0.0