

## NIC 2015 / Indicator descriptions

NIC 2015 / Indicators
<i>Indicator No / Indicator short name</i>
Description
Type ( input / process / output )
Source(s)
Factors and actions enforcing / hampering positive impacts (motivation)
Further reading / links
Misc comments

## National human capital indicators / NHC

<i>NHC1 / Skilled labor</i>
Skilled labor is readily available
Process / enhancer
Survey / IMD WCY 3.2.17 / IMD OnLine 2014
Main factors affecting availability of skilled labor are 1) investments in education, 2) quality of higher education and 3) migration policies

<i>NHC2 / Employee training</i>
Employee training is a high priority in companies
Process / enhancer
Survey / IMD WCY 3.2.10 / IMD OnLine 2014
Employee training improves 1) labor productivity and 2) labor quality

<i>NHC3 / Higher education achievement (%)</i>
Percentage of population that has attained at least tertiary education for persons aged 25-34
Output / achievement
Hard data / IMD WCY 4.5.06 / IMD OnLine 2014
Level(s) of education impacts 1) societal development, 2) economic development and 3) social cohesion in a positive way

<i>NHC4 / Pupil ratio</i>
Ratio of students to teaching staff, primary education Ratio of students to teaching staff, secondary education
Input / basis
Hard data / IMD WCY 4.5.03-04 / IMD OnLine 2014
Generally higher index indicates higher quality in 1) teaching and 2) results of teaching
Composite indicator / inverse

<i>NHC5 / Public expenditure on education</i>
Total public expenditure on education (% of GDP)
Input / basis

Hard data / IMD WCY 4.5.01 / IMD OnLine 2014
Investments in education generally improve 1) social, 2) equality and 3) economic development
Index calculation acknowledges GDP level(s) and annual growth of GDP

<b>NHC6 / 15-64 years old population</b>
Population under 15 years (% of total population) Population over 65 years (% of total population)
Input / basis
Hard data / IMD WCY 4.1.08-09 / IMD OnLine 2014
High index 1) indicates that major part of IC active and 2) economic burden to active share of population (IC) is low. Activating <i>the silver bullet</i> is a challenge.
Composite indicator / inverse

<b>NHC7 / Qualified engineers</b>
Qualified engineers are available in your labor market
Process / enhancer
Survey / IMD WCY 4.2.15 / IMD OnLine 2014
Main factors affecting availability of qualified engineers are 1) <i>targeted</i> investments in education, 2) quality of <i>targeted</i> higher education and 3) migration policies. <i>Strategic targeting</i> anticipating future demands are of the essence.

<b>NHC8 / Students PISA performace</b>
Performance in OECD PISA tests for Math, Reading and Science
Output / achievement
Hard data / OECD PISA / 2012
High performace indicates high future and potential IC assets. Previous year high affect present year active IC.
Composite indicator / missing years interpolated and/or extrapolated using NIC imputation of missing data

<b>NHC9 / Human Development Index</b>
Human Development Index HDI provided by UN combines economic, social and educational metrics monitored by UNPD
Output / achievement
Hard data / IMD WCY 4.4.10 / IMD OnLine 2014
Improving economic, social jand educational equal opporunities and sustaniable levels of welfare generally improve IC assets and impacts. This is especially true considering developing and

emerging economies.
Composite indicator

<i>NHC10 / Gender equality</i>
Female labor force (% of total labor force) Female positions (% of total legislators, senior officials and managers) Women on boards (% , Boardmembers of all companies analyzed by GMI)
Output / achievement
Hard data / IMD WCY 3.2.15, 2.5.11-12 / IMD OnLine 2014
Gender equality generally 1) broadens IC base and IC asset pool, 2) improve social and 3) economic development
Composite indicator / missing data imputed using NIC imputation of missing data

<i>NHC11 / Years of education</i>
School life expectancy primary to tertiary
Input / basis
Hard data / UNESCO UIS 2013
Years of high(er) level education increase potential of IC assets.

<i>NHC12 / R&amp;D researchers</i>
Total R&D personnel nationwide per capita (Full-time work equivalent (FTE) per 1000 people)
Process / enhancer
Hard data / IMD WCY 4.3.07 / IMD OnLine 2014
R&D intensity significantly affects 1) output of R&D investments, 2) productivity based on innovation and 3) patent activity and basic research.
Modified base / Incator index value calculated using per employed

## National market capital indicators / NMC

<i>NMC1 / Corporate tax encouragement</i>
Real corporate taxes do not discourage entrepreneurial activity
Process / enhancer
Survey / IMD WCY 2.2.13 / IMD OnLine 2014
High corporate taxes may hamper attractiveness. Fiscal policy measures balancing openness with responsible corporate developing are important.

<i>NMC2 / Cross border venture</i>
Foreign investors are free to acquire control in domestic companies
Input / basis
Survey / IMD WCY 2.4.05 / IMD OnLine 2014
Equality strenghtens IC and increases attractiveness

<i>NMC3 / Openness of culture</i>
The national culture is open to foreign ideas Language skills are meeting the needs of enterprises
Input / basis
Survey / IMD WCY 3.5.03, 4.5.16 / IMD OnLine 2014
Openness of cuture as 1) openness to new ideas (readiness to change) and 2) basic capabilities to co-operate enforces possibilities to utilize global spillovers, IC and benefits economic and cultural development.
Composite indicator

<i>NMC4 / Transparency of government policies</i>
Transparency of government policy is satisfactory
Process / enhancer
Survey / IMD WCY 2.3.11 / IMD OnLine 2014
Transparency of actions and policies 1) increases trust and 2) double contingensy. Both enforce co-operation and willingness to share IC, e.g. utilize global IC spillovers.

<i>NMC5 / Image of your country</i>
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The image abroad of your country encourages business development
Process / enhancer
Survey / IMD WCY 3.5.02 / IMD OnLine 2014
Image abroad gauges FDI investments flows and affect willingness of third party to take (future) investment risk.

<b>NMC6 / Capital availability</b>
Cost of capital encourages business development
Input / basis
Survey / IMD WCY 2.3.02 / IMD OnLine 2014
Favorable business environment and environment encouraging SME development is a main IC incubator and fiscal policies may affect this environment substantially.

<b>NMC7 / Trade to GDP ratio (exports + imports)</b>
$(\text{Exports} + \text{Imports}) / (2 * \text{GDP})$
Output / achievement
Hard data / IMD WCY 1.2.21 / IMD OnLine 2014
Trade enhances cultural exchange and exchange in IC as spillovers. Enhancing trade enhances growth of IC.
Composite indicator

<b>NMC8 / Current account balance %GDP</b>
Value of (export - import) as percentage of GDP
Output / achievement
Hard data / IMD WCY 1.2.02 / IMD OnLine 2014
Excess trade and trade in value-added (TIVA) exemplify trade in IC. Fiscal policies promoting trade promote growing IC.
Composite indicator

<b>NMC9 / Investment flows %GDP</b>
Value of direct investment flows abroad as % of GDP
Value of direct investment flows inward as % of GDP
Output / achievement
Hard data / IMD WCY 1.3.02, 06 / IMD OnLine 2014
Increasing investments (FDI inward/outward) strengthen IC flows via co-operation and spillovers. On the other hand strong IC increases inward FDI investment flows, i.e. increases attractiveness.

Composite indicator
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<i>NMC10 / Country credit rating</i>
Country credit rating (Rating on a scale of 0-100 assessed by the Institutional Investor Magazine)
Process / enhancer
Hard data / IMD WCY 2.3.04 / IMD OnLine 2014
High IC strenghtens high credit rating via 1) reliability, 2) predictability and 3) sustaianbility. Importance of fiscal policy can not be over stated.
Modified / Composite indicator

<i>NMC11 / Investment risk</i>
Investment risk (Euromoney country risk overall (basic scale from 0-100))
Input / basis
Hard data / IMD WCY 3.3.04 / IMD OnLine 2014
High IC lowers risk factors by improving 1) reliability, 2) predictability and 3) sustaianbility.
Modified / Composite indicator

<i>NMC12 / Globalization index</i>
KOF index of globalization Attitudes toward globalization are generally positive in your society
Output / achievement
ETH Zürich / 2014 / KOF index of globalization Survey / IMD WCY 3.5.01 / IMD OnLine 2014
Global activities utilize global IC pool as asset and global IC spillovers and thuse increase national active and potential IC.
Composite indicator

## National process capital indicators / NPC

<i>NPC1 / Business competition environment</i>
Competition legislation is efficient in preventing unfair competition
Input / basis
Survey / IMD WCY 2.4.11 / IMD OnLine 2014
Competition i.e. the drive to do things better and smarter is a key ingredients of all IC. Hindering competition is to hamper innovativeness and development of IC.

<i>NPC2 / Government efficiency</i>
Bureaucracy does not hinder business activity
Process / enhancer
Survey / IMD WCY 2.3.12 / IMD OnLine 2014
Vivid business activities promote IC and those unnecessary bureaucracy hampering business activities also hamper vivid growth of IC.

<i>NPC3 / Computer per capita + Mobile subscribers</i>
Computer per capita (Number of computers per 1000 people / Source: Computer Industry Almanac) Mobile phone subscribers (Number of subscribers per 1000 inhabitants)
Input / basis
Hard data / IMD WCY 4.2.09, 04 / IMD OnLine 2014
Communication, co-operation and sharing is a key component of IC. All activities promoting readiness and affordability of communication and sharing promote growth of IC.
Composite indicator

<i>NPC4 / Internet subscribers + Broadband subscribers</i>
Internet users (Number of internet users per 1000 people / Source: Computer Industry Almanac) Broadband subscribers (Number of subscribers per 1000 inhabitants)
Input / basis
Hard data / IMD WCY 4.2.10, 12 / IMD OnLine 2014
Communication, co-operation and sharing is a key component of IC. All activities promoting readiness and affordability of communication and sharing promote growth of IC.
Composite indicator

<i>NPC5 / Convenience of establishing new firms + start up days</i>
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Creation of firms is supported by legislation Convenience of establishing new firms + start-up days
Input / basis
Survey / IMD WCY 2.4.14 / IMD OnLine 2014 Hard data / IMD WCY 4.2.15 / IMD OnLine 2014
Vivid business activities promote IC and those unnecessary bureaucracy hampering business activities also hamper vivid growth of IC.
Composite indicator

<i>NPC6 / Goods &amp; services distribution efficiency</i>
The distribution infrastructure of goods and services is generally efficient
Process / enhancer
Survey / IMD WCY 4.1.15 / IMD OnLine 2014 Good logistic basic infrastructure embeds easy co-operation and communication promoting IC.

<i>NPC7 / Overall productivity</i>
Overall productivity (PPP) (GDP (PPP) per person employed, US\$)
Output / achievement
Hard data / IMD WCY 3.1.01 / IMD OnLine 2014 IC is a key driver of total factor productivity creating value.

<i>NPC8 / Unemployment % + Youth unemployment %</i>
Unemployment rate (% of labor force) Youth unemployment (% of youth labor force (under the age of 25))
Output / achievement
Hard data / IMD WCY 1.4.06, 08 / IMD OnLine 2014 IC is job creating via 1) sharing and co-operation, 2) renewal and 3) innovativeness.
Composite indicator

<i>NPC9 / Consumer price inflation</i>
Consumer price inflation (Average annual rate)
Output / achievement
Hard data / IMD WCY 1.5.01 / IMD OnLine 2014 Balanced inflation (i.e. annual inflation near 2.5 % +/- in developed economies) reflects 1) growing value creation and 2) renewal activity. Both indicate active IC.

Deflation and hyper inflation negative when calculating index

*NPC10 / Health & environment*

Total health expenditure as % of GDP

CO2 emissions intensity as CO2 industrial emissions in metric tons per one million US\$ of GDP

Process / enhancer

Hard data / IMD WCY 4.4.01, 17 / IMD OnLine 2014

“Mens sana in corpore sano” Welbeing promote IC.

Composite indicator

*NPC11 / Corruption*

Corruption Perceptions Index CPI

Output / achievement

Hard data / Transparency International 2013

IC as being duple contingent reduces corruption. In reverse: Reducing corruption also promote IC, i.e. enables bouble contingent developmet.

Composite indicator

*NPC12 / Freedom of speech*

Press Freedom Index

Process / enhancer

Hard data / Reporters Without Borders for freedom of information 2014

Freedom of speech equals freedom of oppinion and IC sharing.

Composite indicator

## National renewal capital indicators / NRC

<i>NRC1 / Business R&amp;D spending</i>
Business expenditure on R&D, million USD
Input / basis
Hard data / IMD WCY 4.3.04 / IMD OnLine 2014
Need of funding and monetary size of funding can not be over stated.
Missing data imputed using NIC imputation of missing data

<i>NRC2 / Basic research</i>
Basic research does enhance long-term economic and technological development Scientific research (public and private) is high by international standards
Input / basis
Survey / IMD WCY 4.3.10, 18 / IMD OnLine 2014
Basic research and quality of research is the key to new mega-innovations. As resources are scarce co-operation broadens opportunities to do costly, but necessary basic research.
Composite indicator

<i>NRC3 / R&amp;D spending /GDP</i>
Total (public and private) expenditure on R&D as % of GDP
Input / basis
Hard data / IMD WCY 4.3.02 / IMD OnLine 2014
Need of funding and monetary size of funding can not be over stated.

<i>NRC4 / R&amp;D US\$ per capita</i>
R&D, USD per capita
Input / basis
Hard data / IMD WCY 4.3.03 / IMD OnLine 2014
Need of funding and monetary size of funding can not be over stated.
Modified base / Incator index value calculated using per employed

<i>NRC5 / IP right protection</i>
Intellectual property rights are adequately enforced
Process / enhancer
Survey / IMD WCY 4.3.21 / IMD OnLine 2014

Securing intellectual property rights promote *openness* of IC and willingness to share.  
Government and business policies are key areas.

*NRC6 / Utility Patents / R&D expenditure*

Number of Utility Patent Applications Filed in the United States  
Total expenditure on R&D, mUSD

Output / achievement

Hard data / U.S. Patent and Trademark Office 2013  
Hard data / IMD WCY 4.3.01 / IMD OnLine 2014

Easing patenting processes and costs enhances patenting and strenghtens active IC. Also:  
Cutting corners cuts expences and time.

Composite indicator

*NRC7 / Cooperation between corporations and university*

Knowledge transfer is highly developed between companies and universities

Process / enhancer

Survey / IMD WCY 4.3.22 / IMD OnLine 2014

Mutual utilization of spillovers and fundings promote growth of IC. Also: Business know-how may  
well gauge academic research towards more productive IC.

*NRC8 / Scientific articles*

IMD WCY 4.3.11 / Scientific articles (Scientific articles published by origin of author)

Output / achievement

Hard data / IMD WCY 4.3.11 / IMD OnLine 2014

Easing peer review processes and costs enhances publication activity and strenghtens active IC.

Composite indicator / Modified base / Incator index value calculated using per capita and  
employed

*NRC9 / Patents per capita (USTPO+EPO)*

Patents per capita (US)  
Patents per capita (EU)

Output / achievement

U.S. Patent and Trademark Office 2014  
European Patent Office 2014

Easing pantenting processes and costs enhances patenting and strenghtens active IC. Also  
providing ready at hand information regarding patenting is a key issue.

Composite indicator / Modified base / Indicator index value calculated using per capita and employed

***NRC10 / Entrepreneurship***

Entrepreneurship of managers is widespread in business

Process / enhancer

Survey / IMD WCY 3.4.07 / IMD OnLine 2014

Entrepreneurship is based on a *new* business idea and those based on IC. Promoting attitudes towards entrepreneurship, removing practical barriers and securing start-up funding thus strengthens active IC.

***NRC11 / Development & application of technology***

Development and application of technology are supported by the legal environment

Output / achievement

Survey / IMD WCY 4.2.18 / IMD OnLine 2014

Fast adoption and innovative use of ready at hand technology is a key ingredient of active IC. Reducing barriers hindering or slowing down this process hinders growth of *applied* IC.

***NRC12 / Venture capital***

Venture capital is easily available for business

Process / enhancer

Survey / IMD WCY 3.3.16 / IMD OnLine 2014

Availability of venture capital support SME company development and turns IC potentials into active IC. Fiscal and banking sector policies are key areas.