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Networks for Prosperity:
Partnering for inclusive and sustainable industrial development
Connectedness Index 2013

UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION
partner for prosperity

Leuven Centre
for Global
Governance Studies

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About the Authors

AXEL MARX

is deputy director of the Leuven Centre for Global Governance Studies at the University of Leuven (Belgium). He studied sociology and political science at the Universities of Leuven, Hull and Cambridge and holds a PhD in social sciences from the University of Leuven. His research interest include non-state market governance and regulation, regulatory cooperation, global governance, political economy and comparative case methods. His international peer-reviewed papers appeared inter alia in Regulation and Governance, Political Research Quarterly, European Political Science Review, International Journal of Multiple Research Approaches, Methodological Innovations, Journal of Socio-Economics, Journal of Business Research, Environmental Impact Assessment Review, Innovation and European Journal of Social Sciences and European Environmental Law Review. He was lead author of the first and second Networks of Prosperity Report and published in 2011 and 2012 and a book on Global Governance and Private Standards (jointly with Jan Wouters, Jo Swinnen and Miet Maertens) with Edward Elgar. In addition he published more than 10 commissioned policy reports on a wide range of topics for inter alia the European Commission, the European Parliament, the Belgian Government, the Flemish Government and private organizations. He can be reached at axel.marx@ggs.kuleuven.be

JADIR SOARES

is a member of the Leuven Centre for Global Governance Studies at the University of Leuven. He works on statistical analysis and development of indicators on country level data, and manages a large interdisciplinary database on political, legal and economic development. He holds a Master of Accounting degree from Fucape Business School (Brazil) and he is current pursuing an Advanced Master in Statistics at the University of Leuven. He also contributed to the previous Networks of Prosperity Reports published in 2011 and 2012. His research interest includes development, global governance and human rights. He can be reached at jadir.soares@ggs.kuleuven.be.

EDITORS:

Kazuki Kitaoka, Head of the Strategic Planning and Coordination Group, UNIDO.
Joaquín Fuentes Cardona, Consultant, UNIDO.
Irene Pirca García, Consultant, UNIDO.

Table of Contents

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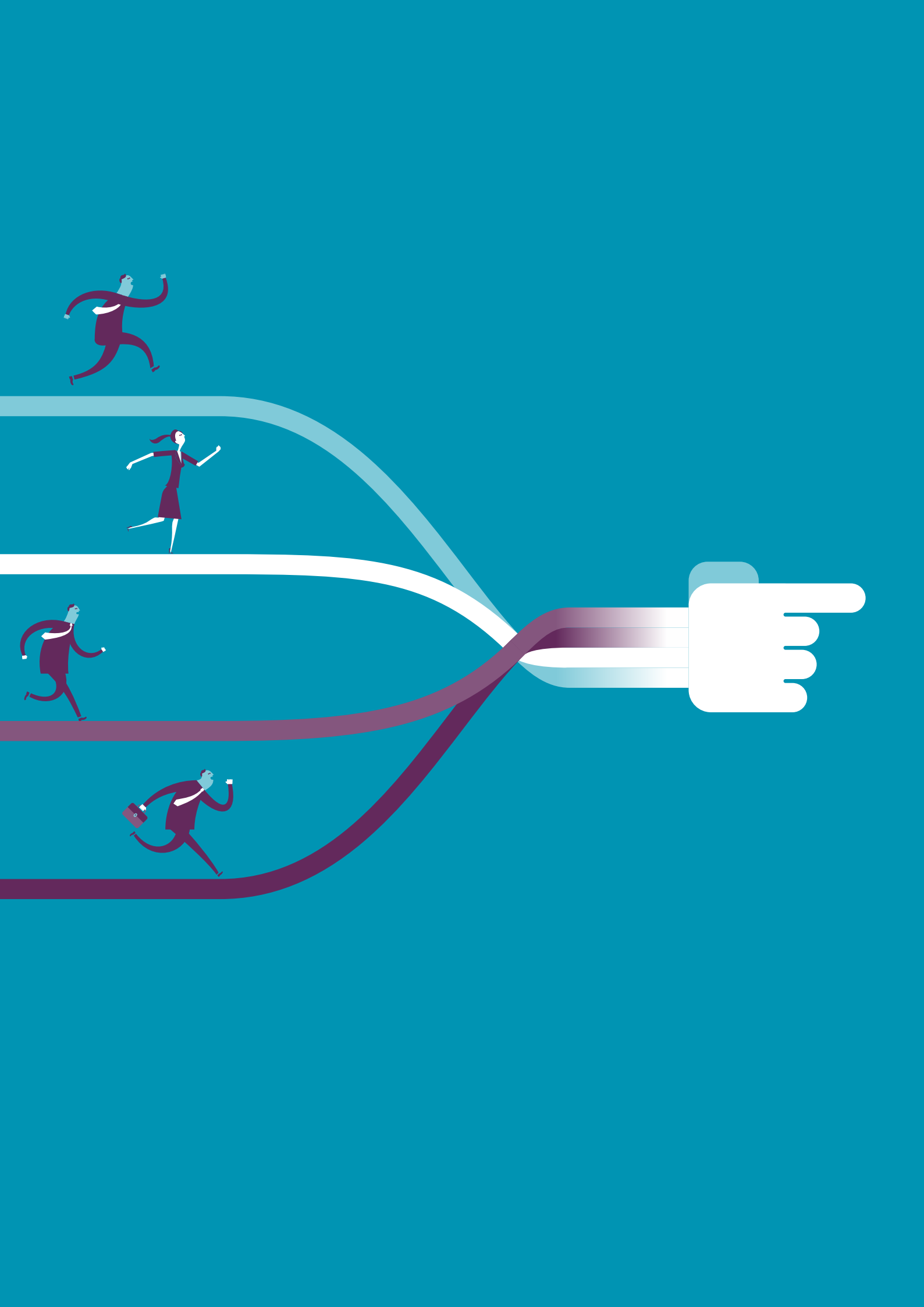
Index of graphs, figures and tables

GRAPHS

FIGURES

TABLES



Acronyms

CIP	Competitive Industrial Performance
CLEAN	Coordinated Low Emission Assistance Network
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
IGO	Intergovernmental Organization
ISO	International Organization for Standardization
KOF	Konjunkturforschungsstelle der ETH Zurich (Swiss Economic Institute)
MIC	Middle Income Country
NCPC	National Cleaner Production Centre
NGO	Non Governmental Organization
N4P	Networks for Prosperity
OECD	Organization for Economic Co-operation and Development
PPP	Purchasing Power Parity
R&D	Research and Development
SOE	State-owned Enterprise
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNEP	United Nations Environment Programme
UNIDO	United Nations Industrial Development Organization

Foreword

LI Yong
Director General, UNIDO

These are interesting times as the international community discusses the developmental framework of the future. Achieving the full eradication of poverty and accelerating sustainable development requires new approaches that harness globally available knowledge and innovation.

In the case of UNIDO, we aim to achieve *inclusive and sustainable industrial development (ISID)* for our member states and beyond. Knowledge exchange and technology transfer, particularly through strong productive linkages between diverse development actors, can positively influence success in reaching this goal.

Industry is a primary source of income generation for individuals and governments, and ISID strategies thus play a key role in building resilient economies and societies. "Connectedness" – through knowledge, production and investment networks – is a core ingredient in such strategies, as demonstrated in our *Networks for Prosperity* reports over the past three years. Networks can offer the required platforms to advance innovation and technology, and create the knowledge that is necessary for building suitable institutional capacities and a conducive business environment, prerequisites for a vibrant economy. They can also facilitate infrastructure investments and promote trade relations. Indeed, our research has shown a positive correlation between a country's connectedness and its industrial and economic performance.

UNIDO has demonstrated that there are significant opportunities and potential gains in advancing a country's connectedness at all levels. The structured creation of *ISID*-related knowledge, promotion of industrial innovation, and partnership for respective technology exchange will therefore remain at the core of UNIDO's development strategies. To deliver this, UNIDO will continue to forge ever closer and stronger networks and partnerships among governments, private sector, academia, multilateral and bilateral development agencies, international financial institutions, and all other related stakeholders.

The previous *Networks for Prosperity* reports in 2011 and 2012 argued that connectedness needs to be considered as important enabler in the elaboration of a future post-2015 development agenda. We were therefore most encouraged when the recent High-Level Panel report recognized the importance of knowledge networks in development. This is further underlined by the San José Declaration adopted at the High-Level Conference of Middle-Income Countries in June 2013, which took up the concept of Networks for Prosperity for knowledge exchange and technology transfer.

This third edition of the Networks for Prosperity report, *"Partnering for inclusive and sustainable industrial development"*, builds on the findings of its preceding reports and provides the 2013 ranking of the UNIDO Connectedness Index. The report was prepared by UNIDO's Networks for Prosperity initiative in close collaboration with the Leuven Centre for Global Governance Studies. I am convinced that this report will contribute to further shaping current efforts in advancing *inclusive and sustainable industrial development*, and thus to achieving broad-based economic growth and shared prosperity within a sustainable framework.

LI Yong
Director General, UNIDO

Foreword

Jan Wouters
Director, Leuven Centre for Global Governance Studies

Fostering inclusive and sustainable industrial development is a key mission for UNIDO. In order to achieve this, one has to create the right conditions for information exchange and knowledge learning with regard to sustainable development.

The Networks for Prosperity reports and the underlying conception of network governance, argue that networks constitute important structures of opportunity to create these conditions. The construction of these networks should simultaneously take place at the national and international level. Many countries have understood this message. They are creating green industrial clusters and networks to structurally change their domestic economies towards sustainability. In addition, they are forging international cooperation and building international networks, often with international multilateral organizations, to generate cross-boundary learning effects. A prerequisite to establishing such networks and collaboration is the recognition that international cooperation is necessary. In a global economic context in which competition plays a leading role and economic crises remain endemic, this is not self-evident. Often zero-sum thinking generates barriers for cooperation. For this reason, the San José Declaration on "Challenges for Sustainable Development and International Cooperation in Middle-income Countries: The role of Networks for Prosperity" constitutes an important milestone. It recognizes the importance of (international) cooperation in order to achieve sustainable development, and supports initiatives which create transnational networks. These initiatives play a key role in new forms of governance that rely on knowledge management and information exchange. These new forms of network governance (1) enhance **mutual learning,** (2) identify **good practices** and their conditions for transferability, and (3) stimulate the development of **joint policy initiatives**. Leading examples include UNIDO's Green Industry Platform or the UN Sustainable Development Solutions Network.

The importance and increased sense for cooperation also emerges out of the third Connectedness Index presented in this report. The Connectedness Index is a unique and distinct index in that it conceptualizes connectedness not only internationally, but also within countries and hence takes the multi-level dimension of connectedness and network formation into account. In this report, we present the results of a third wave of data-gathering and analysis. The report demonstrates the increased connectedness of countries, both internationally as well as internally, thereby highlighting the increased attention for network formation and cooperation. The report also shows significant variation between countries in terms of connectedness and thus shows a world map of countries which are highly connected and countries which are less connected. What emerges from this analysis is not so much a division between 'North' and 'South', but between highly networked countries and less networked countries, countries moving from the periphery to the core, grasping the importance of being connected. These findings generate several additional questions and policy challenges which we hope to address and study together with UNIDO. We look forward to our further collaboration.

Prof. Dr. Jan Wouters

Jean Monnet Chair Ad Personam EU and Global Governance
Full Professor of International Law and International Organizations
Director, Leuven Centre for Global Governance Studies - Institute for International Law University of Leuven
President, Flemish Foreign Affairs Council

Introduction

The Networks for Prosperity Initiative is built on the crucial role networks play for international cooperation and sustainable economic development, including private sector development. The importance of networks, and the social capital which emerges out of networks, has been recognised by policy-makers and academics from many different disciplines. Social networks constitute structures of opportunity and constraint for individuals as well as corporate actors. Networks have proven to be crucial for several policy outcomes including learning, reduction of uncertainty, increased quality of decisions, performance, etc. In leading publications, Slaughter (2004) and Martinez-Diaz and Woods (2009) focused on networks as a key concept in order to understand current development processes in a global order (see also Martinez-Diaz and Woods, 2009).

Since networks are based on non-hierarchical coordination and horizontal embedded relations between actors, many authors consider them as distinct type of governance besides hierarchies (states) and market (Börzel, 2011; see also Torfing). The rise of network governance takes place in a context of a more general and profound shift from government to governance which is redefining the role of states (Lobel, 2004; see also 2012; Rhodes, 2012). What emerges is a distinct way of governing by networks, both nationally and internationally. The importance of network governance was also acknowledged in the outcome document of the 4th High-level Forum on Aid Effectiveness (2011). The Busan Partnership for Effective Development Co-operation recommended the 'development of networks for knowledge exchange, peer learning and coordination among South-South actors as a means of facilitating access to important knowledge pools by developing countries.

As a result, several researchers aim to capture the degree to which countries are networked. The UNIDO Connectedness Index is unique and distinct in that it conceptualizes connectedness not only internationally, but also within countries. In the second report, we analyzed the differences and similarities between several indices and showed that to a high degree they correspond indicating a trend towards more connectedness and the significant variation which exists between countries in relation to their connectedness. In this report we present the results of a third wave of data. First, the Connectedness Index and its sub-indices are introduced. In the following section, we introduce the main results for the 2013 Connectedness Index. The report highlights the increased interconnectedness of countries. In a final part, the report compares the three waves of the Connectedness Index and formulates some conclusions.

Connectedness Index 2013

The Connectedness Index 2013

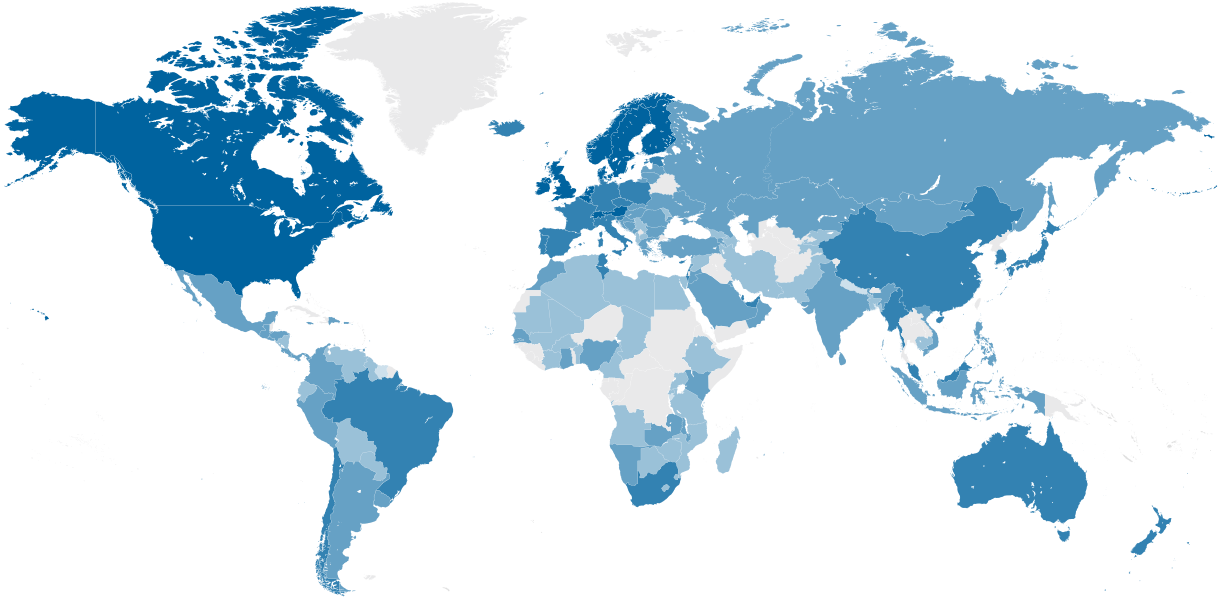
This chapter presents an updated version of the Connectedness Index, which captures the degree to which countries are networked on three distinct levels: international, inter-organizational and intra-organizational.

Following the same methodology applied in the previous versions released, respectively, in the UNIDO's Networks for Prosperity Report 2011 and 2012, this edition covers 138 economies and show significant variation on the overall connectedness, as well as among its three sub-indices.

The overall Connectedness Index 2013 shows a higher median when compared with the previous reports. The countries' effort to strengthen its networks seems evident on graph 1.4, that shows the increased average connectedness among countries of all levels of development. In this regards, the progress made by lower middle income countries deserves special attention. In order to provide more detailed information per country we have made country profiles which are included in Annex 2.

These results are specifically relevant in a context of evolving global challenges and shifting notions and constellations of development. In this context, the strategies which are developed to achieve economic growth and stability are changing. Networks and knowledge networks are becoming increasingly important in order to support development which adheres to the Millennium Development Goals. This is the starting point/premise of the Networks for Prosperity initiative and the results of the third report indicate its increasing relevance.

Networks for Prosperity – Connectedness Index 2013



The Connectedness Index 2013 is the average of three sub-indices (International, Inter-organizational, and Intra-organizational Networks). This map shows the level of overall connectedness of countries for which data was available.

1.0–0.8	0.59–0.4	0.19–0
0.79–0.6	0.39–0.2	No data

The Connectedness Index averages the three sub-indices (International, Inter-organizational, and Intra-organizational Networks).

Table 1.1: Connectedness Index

		Connectedness 2013		Connectedness 2012		Connectedness 2011	
ISO	Country	Index	Rank	Index	Rank	Index	Rank
CHE	Switzerland	0.956	1	0.977	1	0.971	1
SWE	Sweden	0.946	2	0.915	2	0.913	2
NLD	Netherlands	0.878	3	0.873	4	0.886	5
DNK	Denmark	0.869	4	0.886	3	0.901	3
BEL	Belgium	0.867	5	0.859	5	0.875	6
FIN	Finland	0.858	6	0.849	6	0.863	7
CAN	Canada	0.850	7	0.822	9	0.813	11
AUT	Austria	0.847	8	0.818	12	0.837	8
GBR	United Kingdom	0.838	9	0.785	13	0.770	14
USA	United States	0.830	10	0.820	10	0.887	4
IRL	Ireland	0.817	11	0.822	8	0.803	12
NOR	Norway	0.813	12	0.818	11	0.813	10
SGP	Singapore	0.813	13	0.838	7	0.836	9
LUX	Luxembourg	0.782	14	0.741	16	0.695	21
AUS	Australia	0.780	15	0.758	15	0.755	16
DEU	Germany	0.764	16	0.723	18	0.773	13
CZE	Czech Republic	0.755	17	0.758	14	0.705	20
JPN	Japan	0.748	18	0.687	22	0.736	18
FRA	France	0.736	19	0.691	21	0.756	15
NZL	New Zealand	0.724	20	0.701	20	0.682	22
MYS	Malaysia	0.708	21	0.711	19	0.716	19
ISL	Iceland	0.688	22	0.729	17	0.748	17
ISR	Israel	0.683	23	0.618	30	0.677	23
CHL	Chile	0.670	24	0.640	25	0.609	33
QAT	Qatar	0.664	25	0.577	35	0.569	37
THA	Thailand	0.660	26	0.666	23	0.650	26
EST	Estonia	0.659	27	0.653	24	0.640	28
ESP	Spain	0.658	28	0.624	27	0.613	32
CHN	China	0.646	29	0.536	42	0.613	31
ARE	United Arab Emirates	0.635	30	0.565	38	0.506	46
POL	Poland	0.631	31	0.598	33	0.523	42
ZAF	South Africa	0.629	32	0.625	26	0.622	30
PRT	Portugal	0.627	33	0.582	34	0.562	38
CYP	Cyprus	0.626	34	0.619	29	0.583	35
BRA	Brazil	0.624	35	0.603	32	0.561	39
SVN	Slovenia	0.621	36	0.622	28	0.666	24
TUN	Tunisia	0.616	37	0.574	36	0.635	29
KOR	Korea, Republic of	0.609	38	0.610	31	0.654	25
ITA	Italy	0.601	39	0.538	40	0.575	36
LTU	Lithuania	0.570	40	0.463	59	0.544	41
CRI	Costa Rica	0.567	41	0.537	41	0.507	44
SAU	Saudi Arabia	0.566	42	0.477	52	0.469	54
HUN	Hungary	0.562	43	0.548	39	0.590	34

		Connectedness 2013		Connectedness 2012		Connectedness 2011	
ISO	Country	Index	Rank	Index	Rank	Index	Rank
MLT	Malta	0.561	44	0.515	44	0.464	56
SVK	Slovakia	0.547	45	0.529	43	0.645	27
PER	Peru	0.544	46	0.496	48	0.475	51
IND	India	0.538	47	0.573	37	0.554	40
GTM	Guatemala	0.522	48	0.439	67	0.418	75
ARG	Argentina	0.520	49	0.503	46	0.469	53
BHR	Bahrain	0.515	50	0.450	63	0.477	50
IDN	Indonesia	0.507	51	0.474	55	0.502	47
MEX	Mexico	0.499	52	0.433	70	0.397	79
SLV	El Salvador	0.499	53	0.457	61	0.405	76
BRB	Barbados	0.488	54	0.503	47	0.470	52
PRI	Puerto Rico	0.485	55	0.477	53	0.463	58
ZMB	Zambia	0.484	56	0.420	78	0.425	69
COL	Colombia	0.483	57	0.482	50	0.451	60
KEN	Kenya	0.473	58	0.469	57	0.468	55
LBN	Lebanon	0.471	59				
DOM	Dominican Republic	0.471	60	0.480	51	0.430	66
OMN	Oman	0.468	61	0.416	79	0.388	82
HRV	Croatia	0.468	62	0.466	58	0.484	49
URY	Uruguay	0.467	63	0.411	81	0.378	84
TUR	Turkey	0.464	64	0.431	71	0.402	77
MNE	Montenegro	0.462	65	0.402	83	0.375	85
TTO	Trinidad and Tobago	0.461	66	0.445	64	0.420	74
VNM	Viet Nam	0.457	67	0.476	54	0.429	67
LVA	Latvia	0.449	68	0.375	93	0.425	68
GMB	Gambia	0.447	69	0.422	75	0.356	92
ARM	Armenia	0.445	70	0.421	76	0.369	88
NGA	Nigeria	0.444	71	0.443	65	0.444	62
RUS	Russian Federation	0.440	72	0.496	49	0.423	70
JAM	Jamaica	0.438	73	0.459	60	0.514	43
GRC	Greece	0.438	74	0.428	73	0.422	71
PHL	Philippines	0.437	75	0.428	72	0.451	61
PAN	Panama	0.436	76	0.512	45	0.506	45
LKA	Sri Lanka	0.432	77	0.443	66	0.464	57
JOR	Jordan	0.432	78	0.472	56	0.491	48
NAM	Namibia	0.427	79	0.434	69	0.399	78
BGR	Bulgaria	0.426	80	0.427	74	0.454	59
MNG	Mongolia	0.425	81	0.404	82	0.317	104
HND	Honduras	0.420	82	0.386	87	0.374	86
MUS	Mauritius	0.419	83	0.383	89	0.431	64
KWT	Kuwait	0.418	84	0.388	86	0.431	65
UKR	Ukraine	0.418	85	0.435	68	0.421	73
BIH	Bosnia and Herzegovina	0.417	86	0.331	105	0.295	112
KAZ	Kazakhstan	0.414	87	0.454	62	0.421	72
MAR	Morocco	0.410	88	0.374	94	0.391	81
SEN	Senegal	0.410	89	0.420	77	0.394	80
GHA	Ghana	0.408	90	0.365	96	0.347	95
ROU	Romania	0.407	91	0.413	80	0.436	63

		Connectedness 2013		Connectedness 2012		Connectedness 2011	
ISO	Country	Index	Rank	Index	Rank	Index	Rank
MWI	Malawi	0.405	92	0.364	97	0.337	99
BRN	Brunei Darussalam	0.397	93	0.378	92	0.346	96
EGY	Egypt	0.392	94	0.378	91	0.363	90
BWA	Botswana	0.391	95	0.379	90	0.353	93
KHM	Cambodia	0.390	96	0.389	85	0.366	89
GUY	Guyana	0.389	97	0.389	84	0.303	107
BOL	Bolivia, Plurinational State of	0.387	98	0.350	101	0.319	102
UGA	Uganda	0.381	99	0.360	98	0.338	98
ECU	Ecuador	0.380	100	0.373	95	0.370	87
MLI	Mali	0.379	101	0.347	102	0.317	105
LSO	Lesotho	0.373	102	0.340	103	0.298	110
PRY	Paraguay	0.373	103	0.300	112	0.266	117
SRB	Serbia	0.369	104	0.385	88	0.384	83
CIV	Côte d'Ivoire	0.355	105	0.329	106	0.348	94
MDA	Moldova	0.347	106	0.243	125	0.235	124
RWA	Rwanda	0.344	107				
TZA	Tanzania, United Republic of	0.337	108	0.325	109	0.228	125
MOZ	Mozambique	0.337	109	0.326	107	0.302	108
ZWE	Zimbabwe	0.330	110	0.335	104	0.331	100
SWZ	Swaziland	0.328	111				
ALB	Albania	0.326	112	0.282	119	0.227	126
NIC	Nicaragua	0.324	113	0.281	120	0.244	122
BEN	Benin	0.317	114	0.288	117	0.255	120
MKD	Macedonia, the former Yugoslav Republic of	0.315	115	0.296	114	0.343	97
MDG	Madagascar	0.314	116	0.350	100	0.310	106
AZE	Azerbaijan	0.314	117	0.351	99	0.356	91
DZA	Algeria	0.311	118	0.280	121	0.243	123
CMR	Cameroon	0.306	119	0.307	110	0.318	103
ETH	Ethiopia	0.303	120	0.287	118	0.320	101
PAK	Pakistan	0.301	121	0.274	122	0.261	118
TCD	Chad	0.293	122	0.303	111	0.246	121
VEN	Venezuela, Bolivarian Republic of	0.292	123	0.292	116	0.295	113
BFA	Burkina Faso	0.289	124	0.265	123	0.278	115
KGZ	Kyrgyzstan	0.272	125	0.292	115	0.297	111
TMP	East Timor	0.269	126	0.225	126	0.200	130
IRN	Iran, Islamic Republic of	0.262	127				
BGD	Bangladesh	0.260	128	0.204	130	0.219	128
GEO	Georgia	0.256	129	0.223	127	0.225	127
LBY	Libyan Arab Jamahiriya	0.251	130	0.326	108	0.290	114
TJK	Tajikistan	0.244	131	0.221	128	0.274	116
AGO	Angola	0.243	132				
SYR	Syrian Arab Republic	0.243	133	0.263	124	0.260	119
CPV	Cabo Verde	0.237	134				
MRT	Mauritania	0.214	135	0.296	113	0.300	109
NPL	Nepal	0.169	136	0.127	131	0.186	131
BDI	Burundi	0.153	137	0.206	129	0.147	132
SUR	Suriname	0.076	138	0.081	132	0.204	129
	Median:	0.446		0.441		0.429	

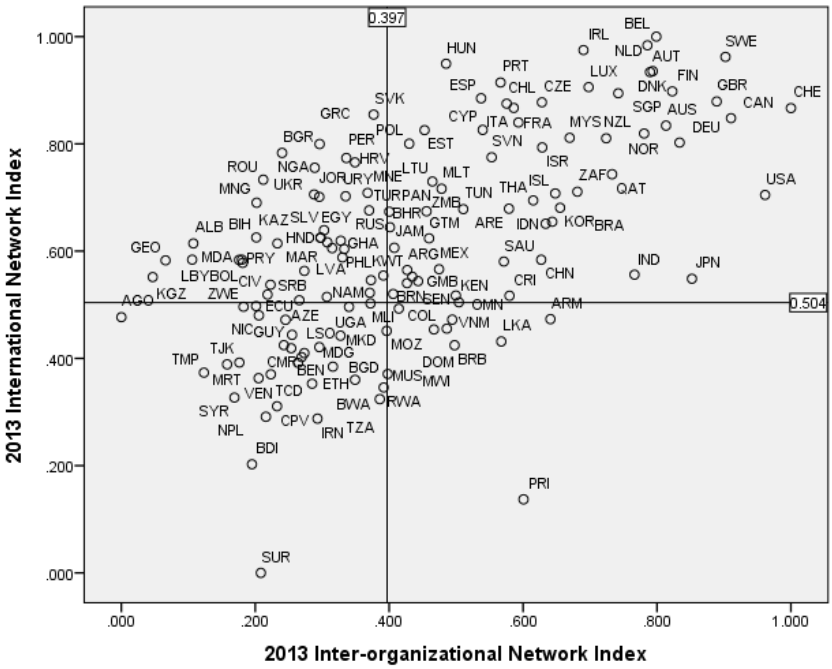
The 2013 connectedness index shows the overall variation in the degree to which 138 countries are networked, both internally as well as internationally. As in the previous years, the index is headed by Switzerland, closely followed by Sweden. The Netherlands, Denmark and Belgium complete the list of top five connected countries in 2013. Among the most connected, the presence of high income/developed countries is marked, mainly OECD members. The most connected "middle-income country" in the 2013 ranking is Malaysia, occupying the 21st position. Thailand (26th) and China (29th) are also among the most connected developing countries.

Countries differ significantly with regards to the nature of their connections: international, inter-organizational and intra-organizational. Some countries obtain consistently high/low scores across the three sub-indicators, whereas others vary notably across the sub-indicators.

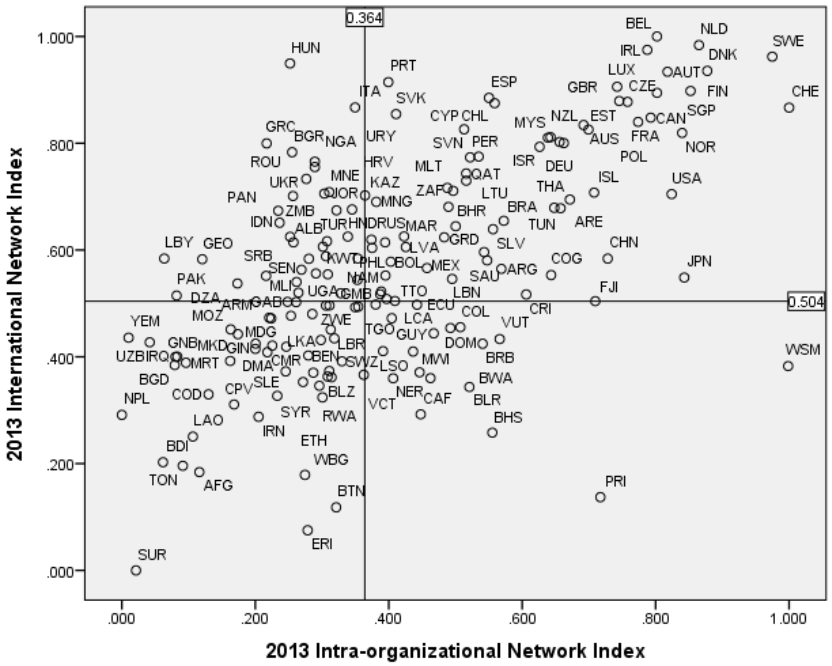
Saudi Arabia, Dominican Republic and Colombia are among the countries showing regular scores across all sub-indicators. For instance, Saudi Arabia scores 0.581 on the International Networks sub-index, 0.571 on the Inter-organizational Networks sub-index, and 0.547 on the Intra-organizational Networks sub-index, what leads to a 0.566 score on the Connectedness Index. In the other extreme, countries such as Hungary, Greece and Bulgaria reach very different scores across the three network sub-indices. Hungary scores very high in the International sub-index, reach an intermediate score on Inter-organizational Networks (0.585), and a low score on the Intra-organizational sub-index (0.252).

Graphs 1.1-1.3 present scatter plots comparing the three sub-indices: international, inter-organization and intra-organization networks. The X and Y-axis present the median scores. These graphs help visualize the different scores of countries and between countries on the different network sub-indices. Looking at graph 1.1 is easy to see that Japan and India score high on Inter-organizational Networks but reach only a median score on International Networks. It is also easy to visualize the consistent high scores of Switzerland and Sweden in the top right side of the three graphs, or the persistent low scores of Suriname, Burundi and Nepal, in the bottom left side.

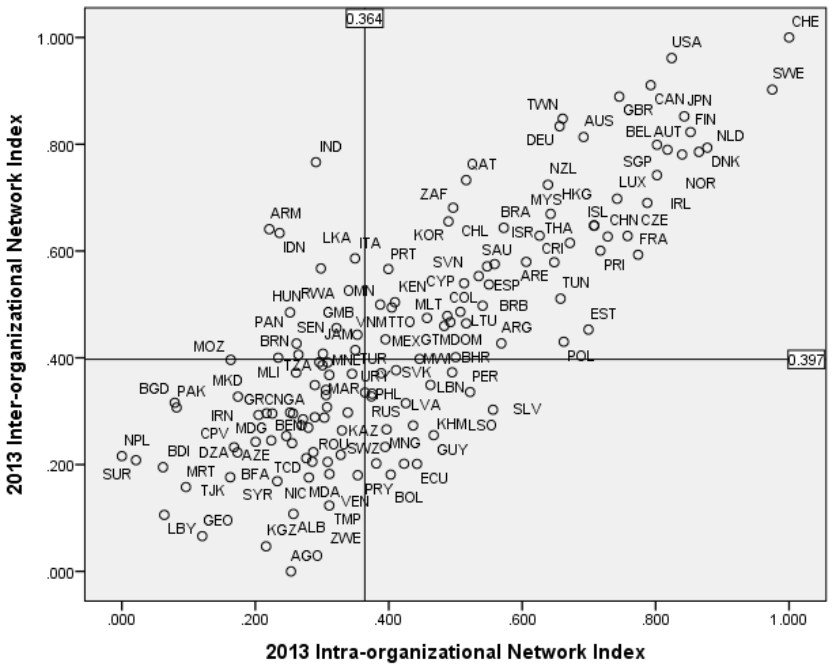
Graph 1.1: Relationship between International and Inter-organizational Networks



Graph 1.2: Relationship between International and Intra-organizational Networks



Graph 1.3: Relationship between Inter-organizational and Intra-organizational Networks



The Connectedness Index: Multi-level measurement of networks across countries

The UNIDO Connectedness Index is an exploratory attempt to measure the degree to which a country is 'networked' or connected. It takes into account that networks develop and are influential on three distinct levels: the international, the inter-organizational, and the intra-organizational level.

The first attempt to capture the level of connectivity of a country was developed and published in the 2011 Networks for Prosperity Report, and further updated in 2012. This report gathers the most recent data available to measure developments in countries' networks. Methodology used in previous reports is maintained in the 2013 edition in order to keep measures comparable between the three reports. Figure 1.1 presents the seven variables selected to construct the connectedness index. For international networks, the aim is to identify indicators that capture the flows of information and policy diffusion between public authorities, as well as the information flows between economic actors (Slaughter, 2004; Martínez-Diaz &Woods, 2009). Two indicators are incorporated to capture this degree of international connectedness, namely the KOF (Swiss Economic Institute) political globalization indicator and the KOF economic networks indicator. The political globalization index captures inter alia the membership in international inter-governmental organizations and the number of international treaties signed and ratified by a country. The economic networks indicator measures the actual economic and financial flows between countries (trade, FDI, portfolio investments). Several other economic indicators capture economic flows, but the KOF is the most comprehensive and suitable one for the purpose of this report.

To capture the degree of inter-organizational interconnectedness within a country, three variables are included: university-industry collaboration; networks and supporting industries; and the degree to which individuals are members of professional organizations, which are often established for networking purposes. The first two indicators are drawn from the Global Competitiveness Report. University-industry collaboration measures the extent to which business and research professionals collaborate on research and development. This relationship forms a network between the private and academic sectors as they work together to pursue innovations. Networks and supporting industries capture the number and quality of local suppliers and the extent of their interaction (i.e. clusters, or the concentration of interconnected businesses). Literature on inter-organizational networks and economic geography recognizes both factors as important indicators to capture the degree of connectedness between these organizations. (Podolny & Page, 1998; Powell & Smith-Doerr, 1994; Saxenian et al. 2001; European Commission, 2008) The third indicator is drawn from the World Values Survey and aims to account for networks of professionals that collaborate with each other for specific purposes. Networking in the context of professional association can be regarded as a relevant networking strategy in the context of information exchange (see Burt, 1995;

Baker, 2002; Putnam, 2000 for a more general argument on the importance of association).

Intra-organizational networks are more difficult to measure. To do so, two proxies are identified based on the degree to which firms offer training (Cross & Parker, 2004). The idea is that training enhances internal networks and learning resulting from increased interaction between people within an organization. One measure comes from the World Bank Enterprise Surveys and measures the percentages of firms offering formal training. A second measure is based on the Global Competitiveness report; it accounts for local availability of specialized research and training services to measure on-the-job training in a country and the extent to which companies in a country invest in training and employee development.

To analyze the relationship with relevant outcome variables, the report focuses on four variables, namely two policy-related variables (government effectiveness and regulatory quality) and two economy-related variables (industrial development and GDP per capita). Government effectiveness and regulatory quality are chosen since networks are assumed to contribute to better policy formulation and implementation (see Marx et al. 2011). In turn, these variables are important for better private sector development and economic development (see also Altenburg (2011, pp. 35-36)). Government effectiveness, from the World Bank governance indicators series, captures different aspects of policymaking and implementation, including the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. The link with private sector development is specifically made in the concept of regulatory quality – data for which was also retrieved from the World Bank governance indicators series –, which refers to the ability of governments to formulate and implement sound policies and regulations that permit and promote private sector development (Kaufman et al. 2009). The UNIDO Competitive Industrial Performance (CIP) Index benchmarks competitive industrial activity at the country level and is an indicator for industrial development. The World Development Indicators provides data on GDP per capita, a second general measure for economic development.
The analysis that follows has a dual focus: first, it analyzes the variation in the connectedness index and its sub-indices; second, it analyzes the relationship between other relevant parameters such as policy effectiveness, industrial development and economic development, without implying any causal relationship. As explained in the first Networks for Prosperity report, this analysis only serves to identify co-variation and does not claim any causal relations.

Figure 1.1: Connectedness Index

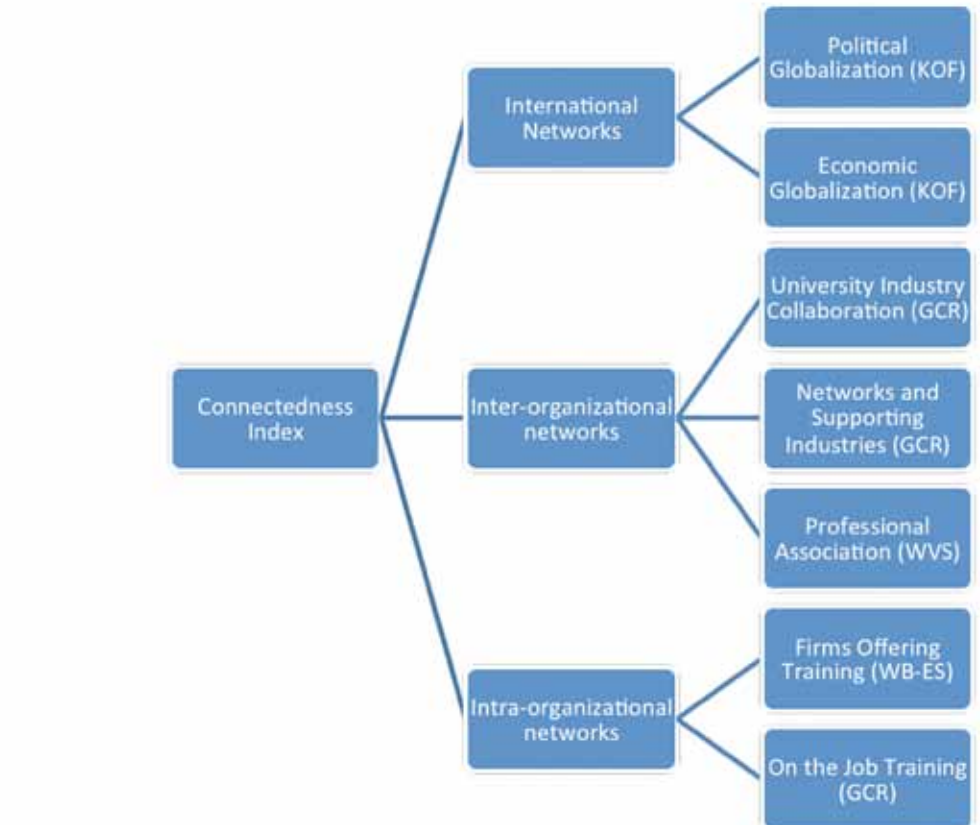


Table 1.1 below presents the variables used to compose the connectedness index as well as the indicators we have related to connectedness.

Table 1.2: Components of connectedness

Variable	Source	Source variable
Political Networks	KOF Index of Globalization	Political Globalization
Economic Networks	KOF Index of Globalization	Actual flows in economic terms
University-Firm Networks	Global Competitiveness Report	University-industry collaboration in R&D
Inter-firm Networks	Global Competitiveness Report	Networks and supporting industries
Personal Networks	World Values Survey	A072: Member of professional associations or A104: Active/inactive membership of professional organization
Formal Training	Enterprise Surveys	L.10: Over fiscal year … [last complete fiscal year], did this establishment have formal training programmes for its permanent, full-time employees?
On-the-job Training	Global Competitiveness Report	On-the-job training
Government Effectiveness	Worldwide Governance Indicators	Government effectiveness
Regulatory Quality	Worldwide Governance Indicators	Regulatory quality
Competitive Industrial Performance (CIP)	Industrial Development Report	Competitive industrial performance
GDP per capita	World Development Indicators	GDP per capita, PPP (current international $)

The following sections discuss the different sub-indices, the Connectedness Index, and the Connectedness Index's relationship with other relevant variables, government effectiveness, CIP and GDP per capita.

The international networks sub-index

Network governance is not only relevant on the national level, but increasingly also on the international level. These networks develop bilaterally, on a regional level and on a global level in the context of multilateral organizations.

The International Networks sub-index aims to capture this and is based on two indicators from the KOF Index of Globalization, political and economic globalization. Political globalization is a proxy for the degree to which states are networked on an international level. This indicator is based on the number of embassies in a country, the number of international organizations of which a country is a member, the number of UN peace missions in which a country participated, and the number of international treaties a country signed (Dreher, 2006). The proxy for economic globalization (networks) is based on the flows of goods and services (KOF actual flows). This indicator takes into account the exports and imports of goods and services, foreign direct investments (FDI stocks), the portfolio of investments of a country, and income payments to foreign nationals.
To create the International Networks Sub-index, we calculate the arithmetic mean of political and economic networks, transformed on a scale from 0-1.The sub-index of International Networks includes data for 208 countries; it is presented in table 2.2.

Table 1.3: International Networks Sub-index

ISO	Country	2013 International Network Index	2013 International Network Rank
BEL	Belgium	1.000	1
NLD	Netherlands	0.984	2
IRL	Ireland	0.975	3
SWE	Sweden	0.962	4
HUN	Hungary	0.950	5
DNK	Denmark	0.936	6
AUT	Austria	0.934	7
PRT	Portugal	0.915	8
LUX	Luxembourg	0.906	9
FIN	Finland	0.898	10

ISO	Country	2013 International Network Index	2013 International Network Rank
SGP	Singapore	0.894	11
ESP	Spain	0.885	12
GBR	United Kingdom	0.879	13
CZE	Czech Republic	0.877	14
CHL	Chile	0.875	15
ITA	Italy	0.867	16
CHE	Switzerland	0.867	17
SVK	Slovakia	0.855	18
CAN	Canada	0.848	19
FRA	France	0.840	20
AUS	Australia	0.834	21
CYP	Cyprus	0.826	22
EST	Estonia	0.826	23
NOR	Norway	0.819	24
MYS	Malaysia	0.811	25
NZL	New Zealand	0.810	26
DEU	Germany	0.802	27
POL	Poland	0.800	28
GRC	Greece	0.800	29
ISR	Israel	0.793	30
BGR	Bulgaria	0.783	31
SVN	Slovenia	0.775	32
PER	Peru	0.774	33
HRV	Croatia	0.766	34
NGA	Nigeria	0.755	35
QAT	Qatar	0.743	36
ROU	Romania	0.733	37
LTU	Lithuania	0.730	38
MLT	Malta	0.716	39
ZAF	South Africa	0.711	40
MNE	Montenegro	0.709	41
ISL	Iceland	0.708	42
JOR	Jordan	0.706	43
USA	United States	0.705	44
URY	Uruguay	0.702	45
UKR	Ukraine	0.701	46
THA	Thailand	0.695	47
MNG	Mongolia	0.690	48
KOR	Korea, Republic of	0.681	49
ARE	United Arab Emirates	0.679	50
TUN	Tunisia	0.678	51
TUR	Turkey	0.676	52
ZMB	Zambia	0.674	53
PAN	Panama	0.674	54
BRA	Brazil	0.655	55
IDN	Indonesia	0.651	56
BHR	Bahrain	0.644	57
SLV	El Salvador	0.639	58
SYC	Seychelles	0.626	59

ISO	Country	2013 International Network Index	2013 International Network Rank
BIH	Bosnia and Herzegovina	0.625	60
HND	Honduras	0.625	61
EGY	Egypt	0.625	62
GTM	Guatemala	0.624	63
RUS	Russian Federation	0.619	64
MAR	Morocco	0.616	65
ALB	Albania	0.614	66
KAZ	Kazakhstan	0.614	67
JAM	Jamaica	0.606	68
LVA	Latvia	0.606	69
PHL	Philippines	0.604	70
GRD	Grenada	0.596	71
GHA	Ghana	0.588	72
PRY	Paraguay	0.584	73
LBY	Libyan Arab Jamahiriya	0.584	74
CHN	China	0.584	75
MDA	Moldova	0.584	76
GEO	Georgia	0.583	77
SAU	Saudi Arabia	0.581	78
BOL	Bolivia, Plurinational State of	0.578	79
MEX	Mexico	0.566	80
ARG	Argentina	0.565	81
SRB	Serbia	0.563	82
IND	India	0.556	83
KWT	Kuwait	0.554	84
COG	Congo	0.553	85
TTO	Trinidad and Tobago	0.552	86
KGZ	Kyrgyzstan	0.552	87
CUB	Cuba	0.551	88
JPN	Japan	0.549	89
GNQ	Equatorial Guinea	0.547	90
LBN	Lebanon	0.546	91
GMB	Gambia	0.544	92
SEN	Senegal	0.540	93
DZA	Algeria	0.537	94
NAM	Namibia	0.522	95
BRN	Brunei Darussalam	0.520	96
CIV	Côte d'Ivoire	0.519	97
OMN	Oman	0.517	98
CRI	Costa Rica	0.517	99
PAK	Pakistan	0.515	100
MCO	Monaco	0.512	101
KHM	Cambodia	0.508	102
KEN	Kenya	0.505	103
FJI	Fiji	0.504	104
GAB	Gabon	0.503	105
MLI	Mali	0.503	106
LCA	Saint Lucia	0.498	107
ECU	Ecuador	0.498	108

ISO	Country	2013 International Network Index	2013 International Network Rank
ZWE	Zimbabwe	0.496	109
UGA	Uganda	0.496	110
TGO	Togo	0.494	111
MUS	Mauritius	0.493	112
NIC	Nicaragua	0.480	114
AGO	Angola	0.477	115
ARM	Armenia	0.473	116
VNM	Viet Nam	0.472	117
AZE	Azerbaijan	0.472	118
COL	Colombia	0.455	119
DOM	Dominican Republic	0.454	120
MOZ	Mozambique	0.451	121
PNG	Papua New Guinea	0.451	122
LBR	Liberia	0.451	123
DJI	Djibouti	0.450	124
GUY	Guyana	0.444	125
MKD	Macedonia, the former Yugoslav Republic of	0.442	126
YEM	Yemen	0.436	127
ATG	Antigua and Barbuda	0.434	128
VUT	Vanuatu	0.433	129
LKA	Sri Lanka	0.431	130
UZB	Uzbekistan	0.427	131
BFA	Burkina Faso	0.425	132
BRB	Barbados	0.424	133
MDG	Madagascar	0.421	134
CMR	Cameroon	0.419	135
GIN	Guinea	0.415	136
KNA	Saint Kitts and Nevis	0.411	137
SMR	San Marino	0.410	138
LSO	Lesotho	0.410	139
DMA	Dominica	0.409	140
SLB	Solomon Islands	0.403	141
BEN	Benin	0.402	142
IRQ	Iraq	0.400	143
GNB	Guinea-Bissau	0.400	144
TJK	Tajikistan	0.392	145
TKM	Turkmenistan	0.392	146
SWZ	Swaziland	0.391	147
MRT	Mauritania	0.389	148
BGD	Bangladesh	0.385	149
WSM	Samoa	0.383	150
TMP	East Timor	0.373	151
SLE	Sierra Leone	0.373	152
MWI	Malawi	0.371	153
TCD	Chad	0.370	154
STP	Sao Tome and Principe	0.369	155
MAC	Macao	0.366	156
VCT	Saint Vincent and the Grenadines	0.366	157
VEN	Venezuela, Bolivarian Republic of	0.363	158

ISO	Country	2013 International Network Index	2013 International Network Rank
BLZ	Belize	0.362	159
BWA	Botswana	0.360	160
NER	Niger	0.360	161
ABW	Aruba	0.354	162
ETH	Ethiopia	0.353	163
RWA	Rwanda	0.346	164
BLR	Belarus	0.343	165
COD	Congo, Democratic Republic of the	0.330	166
AND	Andorra	0.327	167
SYR	Syrian Arab Republic	0.327	168
LIE	Liechtenstein	0.485	113
TZA	Tanzania, United Republic of	0.324	169
PLW	Palau	0.316	170
CPV	Cabo Verde	0.311	171
FRO	Faroe Islands	0.299	172
CAF	Central African Republic	0.292	173
NPL	Nepal	0.291	174
IRN	Iran, Islamic Republic of	0.288	175
SOM	Somalia	0.285	176
IMN	Isle of Man	0.284	177
JEY	Jersey	0.282	178
PRK	Korea, Democratic People's Republic of	0.279	179
SDN	Sudan	0.279	180
BHS	Bahamas	0.258	181
LAO	Lao People's Democratic Republic	0.251	182
NCL	New Caledonia	0.241	183
HTI	Haiti	0.235	184
MMR	Myanmar	0.204	185
KIR	Kiribati	0.203	186
BDI	Burundi	0.203	187
TON	Tonga	0.196	188
MHL	Marshall Islands	0.189	189
AFG	Afghanistan	0.184	190
WBG	West Bank and Gaza Strip	0.179	191
ANT	Netherlands Antilles	0.156	192
MDV	Maldives	0.144	193
FSM	Micronesia, Federated States of	0.140	194
BMU	Bermuda	0.137	195
CYM	Cayman Islands	0.137	195
PRI	Puerto Rico	0.137	195
GRL	Greenland	0.133	198
VIR	Virgin Islands, U.S.	0.130	199
BTN	Bhutan	0.118	200
COM	Comoros	0.111	201
ERI	Eritrea	0.075	202
GUM	Guam	0.070	203
MNP	Northern Mariana Islands	0.065	204
ASM	American Samoa	0.050	205
PYF	French Polynesia	0.046	206

ISO	Country		2013 International Network Index	2013 International Network Rank
MYT	Mayotte		0.009	207
SUR	Suriname		0.000	208
		Median:	0.504	

The international sub-index shows significant variation in the degree to which countries are linked to each other on the international level, both politically as well as economically. Belgium tops the list, followed by The Netherlands, Ireland and Sweden. The median score of 0.504 indicates that most of the countries achieved a relatively high level of international networks. Among the highest scores in the list there are also other high income/developed countries such as Denmark and Austria. Around the median, there are predominantly low and middle income countries such as Cambodia, Kenya, Fiji and Gabon. Close to the bottom of the list, one can find mainly low income countries such as Comoros and Eritrea, and small islands such as Micronesia, Cayman and Mayotte.

It should be noted that a score of zero does not imply that a country is totally unconnected, but that – given the variation between countries and the re-scaling of the variables necessary for indexing (see annex 1) - a country with a zero score indicates that international connectedness is very low compared to other countries.

The inter-organizational networks sub-index

Inter-organizational networks, or partnerships, are gaining prominence across the world. Inter-organisational networks can take at least three forms as presented in the first Networks for Prosperity report. Firstly, inter-organizational networks within the public sector can develop in order to support public sector development.

Secondly, inter-organizational networks between public-private actors can be established. Finally, purely private networks can contribute to private sector development.

Capturing these networks for many countries is not possible since little data is available. However, some indicators are available which capture dimensions of these types of networks. The Inter-organizational Networks Sub-index was created based on three indicators. First is the indicator on networks and supporting industries, which is constructed using data from the Global Competitiveness Report's Executive Opinion Survey. It takes into account the quality and quantity of local suppliers and the state of cluster development. The university-industry collaboration indicator is also taken from the Global Competitiveness Report, measuring the extent to which business and universities collaborate on research and development (R&D) in a country. Finally, the professional association indicator captures the degree to which individuals are involved in professional associations. Data for this measure is gleaned from the World Values Survey. The Inter-organizational Networks Sub-index is constructed by calculating the arithmetic mean of the three indicators; this value is then transformed to a scale from 0-1. The Inter-organizational Networks sub-index, covering 140 countries, is presented in table 1.3.

Table 1.4: Inter-organizational Networks Index

ISO	Country	2013 Inter-organizational Network Index	2013 Inter-organizational Network Rank
USA	United States	0.961	2
CAN	Canada	0.911	3
SWE	Sweden	0.902	4
GBR	United Kingdom	0.889	5
JPN	Japan	0.852	6
TWN	Taiwan, Province of China	0.848	7
DEU	Germany	0.834	8
FIN	Finland	0.823	9
AUS	Australia	0.813	10
BEL	Belgium	0.799	11
DNK	Denmark	0.794	12
AUT	Austria	0.790	13
NLD	Netherlands	0.786	14
NOR	Norway	0.781	15
IND	India	0.766	16
SGP	Singapore	0.742	17
QAT	Qatar	0.733	18
NZL	New Zealand	0.724	19
LUX	Luxembourg	0.698	20
IRL	Ireland	0.690	21
ZAF	South Africa	0.681	22
MYS	Malaysia	0.670	23
KOR	Korea, Republic of	0.655	24
ISL	Iceland	0.648	25
HKG	Hong Kong	0.647	26
BRA	Brazil	0.643	27
ARM	Armenia	0.641	28
IDN	Indonesia	0.634	29
ISR	Israel	0.629	30
CZE	Czech Republic	0.628	31
CHN	China	0.627	32
THA	Thailand	0.615	33
PRI	Puerto Rico	0.601	34
FRA	France	0.593	35
ITA	Italy	0.586	36
CRI	Costa Rica	0.580	37
ARE	United Arab Emirates	0.579	38
CHL	Chile	0.576	39
SAU	Saudi Arabia	0.571	40
LKA	Sri Lanka	0.567	41
PRT	Portugal	0.566	42
SVN	Slovenia	0.553	43
CYP	Cyprus	0.540	44
ESP	Spain	0.537	45
TUN	Tunisia	0.511	46
KEN	Kenya	0.504	47
OMN	Oman	0.500	48

ISO	Country	2013 Inter-organizational Network Index	2013 Inter-organizational Network Rank
BRB	Barbados	0.498	49
VNM	Viet Nam	0.494	50
COL	Colombia	0.486	51
HUN	Hungary	0.485	52
MLT	Malta	0.478	53
MEX	Mexico	0.475	54
DOM	Dominican Republic	0.467	55
LTU	Lithuania	0.464	56
GTM	Guatemala	0.460	57
ZMB	Zambia	0.456	58
EST	Estonia	0.453	59
GMB	Gambia	0.443	60
TTO	Trinidad and Tobago	0.435	61
POL	Poland	0.430	62
ARG	Argentina	0.427	63
SEN	Senegal	0.427	64
MUS	Mauritius	0.414	65
JAM	Jamaica	0.408	66
BRN	Brunei Darussalam	0.406	67
BHR	Bahrain	0.401	68
PAN	Panama	0.400	69
MWI	Malawi	0.398	70
MOZ	Mozambique	0.396	71
RWA	Rwanda	0.392	72
KWT	Kuwait	0.391	73
TZA	Tanzania, United Republic of	0.386	74
SVK	Slovakia	0.377	75
LBN	Lebanon	0.373	76
MLI	Mali	0.372	77
NAM	Namibia	0.371	78
TUR	Turkey	0.370	79
CHE	Switzerland	1.000	1
MNE	Montenegro	0.368	80
BWA	Botswana	0.349	81
HRV	Croatia	0.349	82
UGA	Uganda	0.340	83
PER	Peru	0.336	84
URY	Uruguay	0.335	85
PHL	Philippines	0.333	86
GHA	Ghana	0.330	87
RUS	Russian Federation	0.328	88
MKD	Macedonia, the former Yugoslav Republic of	0.327	89
BGD	Bangladesh	0.316	90
LVA	Latvia	0.315	91
MAR	Morocco	0.308	92
PAK	Pakistan	0.307	93
SLV	El Salvador	0.303	94
EGY	Egypt	0.298	95
HND	Honduras	0.298	96

ISO	Country	2013 Inter-organizational Network Index	2013 Inter-organizational Network Rank
GRC	Greece	0.296	97
MDG	Madagascar	0.296	98
UKR	Ukraine	0.296	99
IRN	Iran, Islamic Republic of	0.293	100
NGA	Nigeria	0.289	101
JOR	Jordan	0.288	102
ETH	Ethiopia	0.285	103
SRB	Serbia	0.273	104
LSO	Lesotho	0.273	105
BEN	Benin	0.269	106
KHM	Cambodia	0.266	107
SWZ	Swaziland	0.264	108
GUY	Guyana	0.255	109
CMR	Cameroon	0.254	110
AZE	Azerbaijan	0.245	111
BFA	Burkina Faso	0.243	112
BGR	Bulgaria	0.240	113
KAZ	Kazakhstan	0.233	114
CPV	Cabo Verde	0.233	115
TCD	Chad	0.223	116
DZA	Algeria	0.223	117
CIV	Côte d'Ivoire	0.218	118
NPL	Nepal	0.216	119
ROU	Romania	0.212	120
SUR	Suriname	0.208	121
NIC	Nicaragua	0.205	122
VEN	Venezuela, Bolivarian Republic of	0.205	123
MNG	Mongolia	0.202	124
BIH	Bosnia and Herzegovina	0.202	125
ECU	Ecuador	0.201	126
BDI	Burundi	0.195	127
ZWE	Zimbabwe	0.182	128
BOL	Bolivia, Plurinational State of	0.181	129
PRY	Paraguay	0.180	130
TJK	Tajikistan	0.176	131
MDA	Moldova	0.176	132
SYR	Syrian Arab Republic	0.169	133
MRT	Mauritania	0.158	134
TMP	East Timor	0.123	135
ALB	Albania	0.108	136
LBY	Libyan Arab Jamahiriya	0.106	137
GEO	Georgia	0.066	138
KGZ	Kyrgyzstan	0.047	139
AGO	Angola	0.000	140
	Median:	0.397	

Switzerland is the most inter-organizationally connected country, followed by the United States, Canada and Sweden. Similar to the International Networks sub-index, high income/developed countries are dominant in the list of most connected, and around the median (0.397) mainly low and middle income countries such as Panama, Malawi and Mozambique are found. At the bottom of the list, there is also the prevalence of low and middle income countries.
The median score of inter-organizational interconnectedness is below 0.5, indicating that a significant number of countries have less developed inter-organizational networks as operationalized in the inter-organizational network sub-index. In our sample, the low median score partly reflects the low level of personal networks (median: 0.14) measured by the professional association indicator. It should be stressed that this is only a very partial operationalization on the basis of available data and it does not take into account several other elements that could be important in terms of inter-organizational networks (i.e. the links between other actors of the private sector development eco-system are not included in the sub-index). Again, the zero score does not indicate a complete absence of inter-organizational networks, but is a result of the re-scaling method, indicating a comparatively low level of inter-organizational connectedness.

The intra-organizational network sub-index

Finally, the first Networks for Prosperity report argued that it is also important to capture the degree to which networks are formed and strengthened within organizations. The basic premise of a social network approach within organizations is that knowledge creation and information exchange primarily occurs between persons notwithstanding the exponential growth of technical knowledge management tools such as databases, the internet, repositories, etc. within organizations.

The importance of intra-organizational networks was also illustrated in the second Networks for Prosperity report with some case-studies. Organizational research has consistently shown that internal interconnectedness is crucial for organizational performance. This dimension is even harder to capture for a full population of countries due to a lack of data. However, two proxies were identified for this purpose.

Two indicators form the basis for the Intra-organizational Networks sub-index. Data measuring the Percentage of Firms Offering Formal Training comes from the World Bank Enterprise Surveys, most specifically from the question assessing whether an establishment offers formal training programmes for its permanent, full-time employees. The On-the-job Training indicator culls data from the Global Competitiveness Report 2010-2011 and is based on the local availability of specialized research and training services, and the extent to which companies invest in training and employee development.

Like the International and Inter-organizational sub-indices, the Intra-organizational Networks sub-index is built by using the arithmetic mean of the two training indicators. The index, covering 172 countries, is presented in table 1.4.

Table 1.5: Intra-organizational Networks Index

ISO	Country	2013 Intra-organizational Network Index	2013 Intra-organizational Network Rank
CHE	Switzerland	1.000	1
WSM	Samoa	0.999	2
SWE	Sweden	0.975	3
DNK	Denmark	0.877	4
NLD	Netherlands	0.865	5
FIN	Finland	0.852	6
JPN	Japan	0.843	7
NOR	Norway	0.840	8
USA	United States	0.824	9
AUT	Austria	0.818	10
BEL	Belgium	0.802	11
SGP	Singapore	0.802	11
CAN	Canada	0.793	13
IRL	Ireland	0.787	14
FRA	France	0.774	15
CZE	Czech Republic	0.758	16
GBR	United Kingdom	0.745	17
LUX	Luxembourg	0.742	18
CHN	China	0.728	19
PRI	Puerto Rico	0.717	20
FJI	Fiji	0.709	21
HKG	Hong Kong	0.708	22
ISL	Iceland	0.708	22
EST	Estonia	0.699	24
AUS	Australia	0.692	25
THA	Thailand	0.671	26
POL	Poland	0.662	27
TWN	Taiwan, Province of China	0.661	28
TUN	Tunisia	0.657	29
DEU	Germany	0.656	30
ARE	United Arab Emirates	0.648	31
COG	Congo	0.643	32
MYS	Malaysia	0.643	33
NZL	New Zealand	0.639	34
ISR	Israel	0.626	35
CRI	Costa Rica	0.606	36
BRA	Brazil	0.572	37
ARG	Argentina	0.569	38
VUT	Vanuatu	0.566	39
CHL	Chile	0.559	40
SLV	El Salvador	0.556	41
BHS	Bahamas	0.555	42
ESP	Spain	0.550	43
SAU	Saudi Arabia	0.547	44
GRD	Grenada	0.543	45
BRB	Barbados	0.541	46
SVN	Slovenia	0.535	47

ISO	Country	2013 Intra-organizational Network Index	2013 Intra-organizational Network Rank
PER	Peru	0.522	48
BLR	Belarus	0.521	49
LTU	Lithuania	0.516	50
QAT	Qatar	0.516	51
CYP	Cyprus	0.513	52
COL	Colombia	0.507	53
BHR	Bahrain	0.500	54
ZAF	South Africa	0.497	55
LBN	Lebanon	0.495	56
DOM	Dominican Republic	0.492	57
KOR	Korea, Republic of	0.489	58
MLT	Malta	0.488	59
GTM	Guatemala	0.483	60
GUY	Guyana	0.467	61
BWA	Botswana	0.463	62
MEX	Mexico	0.457	63
CAF	Central African Republic	0.448	64
MWI	Malawi	0.446	65
ECU	Ecuador	0.442	66
LSO	Lesotho	0.436	67
LVA	Latvia	0.426	68
BIH	Bosnia and Herzegovina	0.423	69
SVK	Slovakia	0.411	70
KEN	Kenya	0.409	71
NER	Niger	0.407	72
VNM	Viet Nam	0.405	73
BOL	Bolivia, Plurinational State of	0.403	74
PRT	Portugal	0.399	75
KHM	Cambodia	0.397	76
TTO	Trinidad and Tobago	0.395	77
KAZ	Kazakhstan	0.395	78
KNA	Saint Kitts and Nevis	0.391	79
NAM	Namibia	0.389	80
OMN	Oman	0.387	81
MNG	Mongolia	0.381	82
LCA	Saint Lucia	0.380	83
PHL	Philippines	0.375	84
RUS	Russian Federation	0.374	85
URY	Uruguay	0.364	86
VCT	Saint Vincent and the Grenadines	0.363	87
TGO	Togo	0.354	88
PRY	Paraguay	0.353	89
GMB	Gambia	0.353	90
MUS	Mauritius	0.350	91
ITA	Italy	0.350	92
TUR	Turkey	0.345	93
HND	Honduras	0.339	94
SWZ	Swaziland	0.330	95
CIV	Côte d'Ivoire	0.328	96

ISO	Country	2013 Intra-organizational Network Index	2013 Intra-organizational Network Rank
ZMB	Zambia	0.322	97
BTN	Bhutan	0.321	98
ATG	Antigua and Barbuda	0.318	99
BLZ	Belize	0.314	100
LBR	Liberia	0.313	101
ZWE	Zimbabwe	0.311	102
MNE	Montenegro	0.311	103
TMP	East Timor	0.311	104
KWT	Kuwait	0.309	105
VEN	Venezuela, Bolivarian Republic of	0.308	106
MAR	Morocco	0.307	107
UGA	Uganda	0.306	108
GHA	Ghana	0.306	109
JOR	Jordan	0.303	110
JAM	Jamaica	0.301	111
TZA	Tanzania, United Republic of	0.301	112
LKA	Sri Lanka	0.298	113
RWA	Rwanda	0.296	114
IND	India	0.291	115
HRV	Croatia	0.289	116
NGA	Nigeria	0.289	117
TCD	Chad	0.287	118
NIC	Nicaragua	0.285	119
MDA	Moldova	0.280	120
BEN	Benin	0.279	121
ERI	Eritrea	0.279	122
ROU	Romania	0.276	123
WBG	West Bank and Gaza Strip	0.274	124
ETH	Ethiopia	0.272	125
SRB	Serbia	0.269	126
BRN	Brunei Darussalam	0.265	127
SEN	Senegal	0.262	128
MLI	Mali	0.261	129
ALB	Albania	0.257	130
UKR	Ukraine	0.256	131
BGR	Bulgaria	0.255	132
AGO	Angola	0.253	133
EGY	Egypt	0.252	134
HUN	Hungary	0.252	135
GAB	Gabon	0.248	136
CMR	Cameroon	0.246	137
SLE	Sierra Leone	0.246	138
KOS	Kosovo	0.244	139
IDN	Indonesia	0.236	140
PAN	Panama	0.234	141
SYR	Syrian Arab Republic	0.233	142
MDG	Madagascar	0.225	143
AZE	Azerbaijan	0.224	144
ARM	Armenia	0.221	145

ISO	Country	2013 Intra-organizational Network Index	2013 Intra-organizational Network Rank
DMA	Dominica	0.218	146
GRC	Greece	0.217	147
KGZ	Kyrgyzstan	0.216	148
IRN	Iran, Islamic Republic of	0.205	149
BFA	Burkina Faso	0.200	150
GIN	Guinea	0.200	151
MKD	Macedonia, the former Yugoslav Republic of	0.174	152
DZA	Algeria	0.173	153
CPV	Cabo Verde	0.168	154
MOZ	Mozambique	0.163	155
TJK	Tajikistan	0.162	156
COD	Congo, Democratic Republic of the	0.130	157
GEO	Georgia	0.121	158
AFG	Afghanistan	0.116	159
LAO	Lao People's Democratic Republic	0.106	160
MRT	Mauritania	0.096	161
TON	Tonga	0.091	162
IRQ	Iraq	0.083	163
PAK	Pakistan	0.082	164
GNB	Guinea-Bissau	0.080	165
BGD	Bangladesh	0.079	166
LBY	Libyan Arab Jamahiriya	0.064	167
BDI	Burundi	0.062	168
UZB	Uzbekistan	0.042	169
SUR	Suriname	0.021	170
YEM	Yemen	0.010	171
NPL	Nepal	0.000	172
	Median:	0.364	

Switzerland also heads the Intra-organizational sub-index, closely followed by Samoa, Sweden and Denmark. Samoa, a small developing country, has an impressive performance on this index due to its high percentage of firms offering formal training (79%). However, this high score needs further in-depth analysis to better understand why Samoa is scoring so high. Similar to the International and Inter-organizational sub-indices, low- and "middle-income countries" are prevalent around the median and the bottom of the list.

The low median (0.364) indicates that the available indicators to identify internal networks are less widespread among countries. A limited number of countries achieve high scores, while a large group of countries receive lower scores. Again, the zero score does not indicate a complete absence of intra-organizational networks, but is a result of the re-scaling method, indicating a low level of intra-organizational connectedness in comparison to other countries in the ranking.

The progress over years

In this section, the changes on countries scores over these three years are discussed. Table 1.5 presents the connectedness index for each country in 2013, as well as in the previous versions of connectedness index: (2011 and 2012).

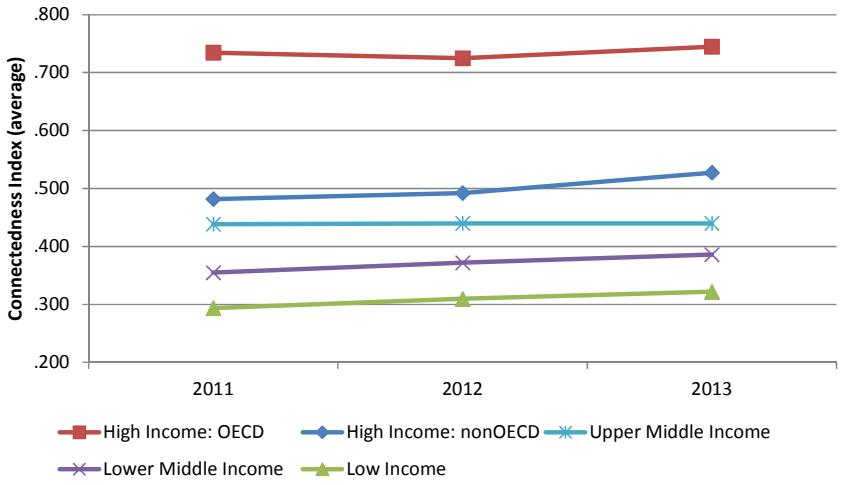
Only minor changes can be seen among the top connected countries. Although its connectedness index have slightly decreased, Switzerland is still the most connected state in the world. Following an opposite trend, the Swedish connectedness has increased consistently. The country is still the second in the ranking, but every year is closest to Switzerland. With regards to ranking positions, the case of The Netherlands should by highlighted, once this country has increased one ranking position per year, from the 5th in 2011 to the 3rd in 2013.

Overall, the growing median, from 0.429 in 2011 to 0.446 in 2013, shows that more countries have invested on their networks and, consequently, have reached higher scores. 51 countries achieve a score higher than 0.5 in 2013, against 47 in 2012 and 2011. Countries such as United Arab Emirates, Tanzania, Poland, Paraguay and Mexico have consistently increased their connectedness score over these years. For example, Mexico increased its connectedness scores from 0.397 in 2011 to 0.433 in 2012, and then to 0.499 in 2013, mainly due to its sharp progress on intra-organizational networks. Mongolia is another example. Its score increased from 0.317 in 2011 to 0.404 in 2012 and 0.425 in 2013. However, in this case, the improvement is mainly due to its progress on international networks. On the other hand, countries such as Suriname, Mauritania, Jamaica, Panamá, Iceland, and Slovenia have decreased their connectedness score year after year. Suriname is the most explicit case, whose connectedness index fell down from 0.204 in 2011 to 0.076 in 2013, mainly due to a comparative drop on their international networks.

Next, graph 1.4 shows the trends on connectedness according to the level of development of countries. It is interesting to note that a positive trend is evident for all groups of countries. On average, high income non-OECD members and lower middle income are the groups of countries with the most positive trends. For instance, lower middle income countries such as Moldova, Mongolia, Paraguay and Guatemala are among the countries that most improved their connectedness index since 2011. It can also be visualized on graph 1.5, on which connected index 2013 is compared with its 2011 edition. In this graph, lower middle-income countries are highlighted. Note that the majority of these countries are plotted on the left of the diagonal, indicating that they have improved their networks in the period from 2011 to 2013.

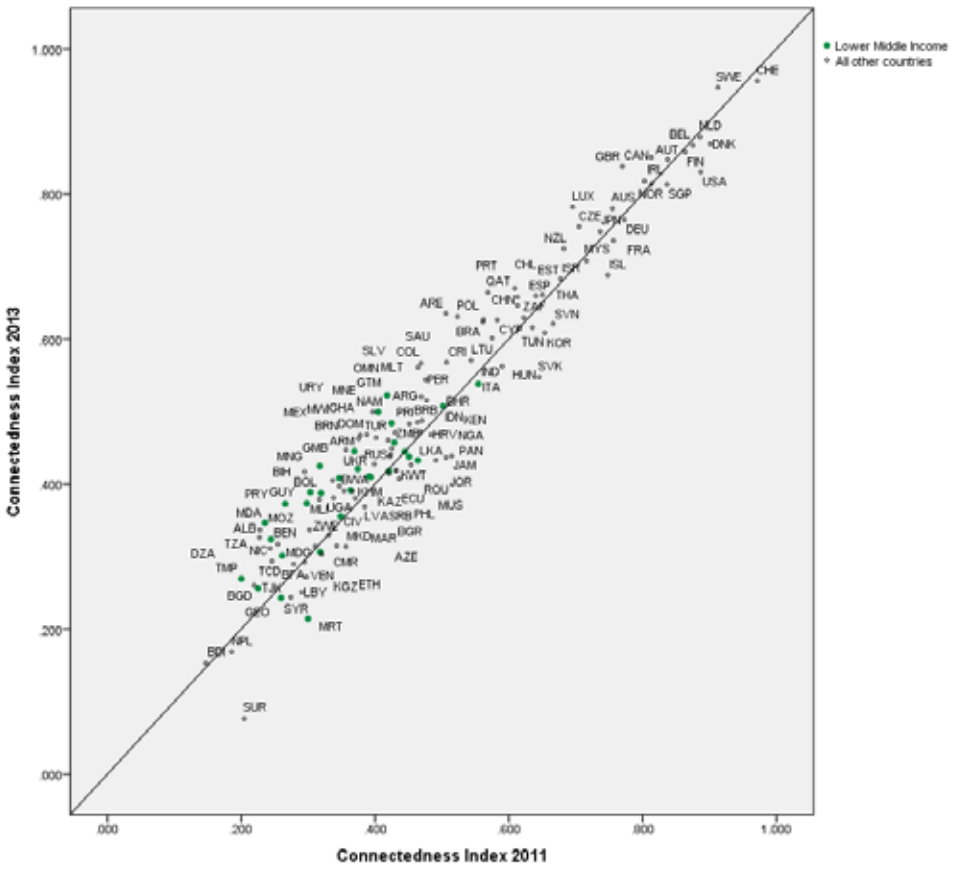
On the other hand, the group of upper middle-income countries is the one with the smallest increase on connectedness. This is the case of countries such as Venezuela and South Africa, whose connectedness index has been kept stable during these three years. Note, for instance, the position of South Africa (ZAF), on the diagonal of graph 1.5.

Graph 1.4: Trends on Connectedness Index according to the countries' level of development[1]



[1] Countries' classification according to The World Bank Country Groups by Income

Graph 1.5: Comparison between Connectedness Index 2011 and 2013

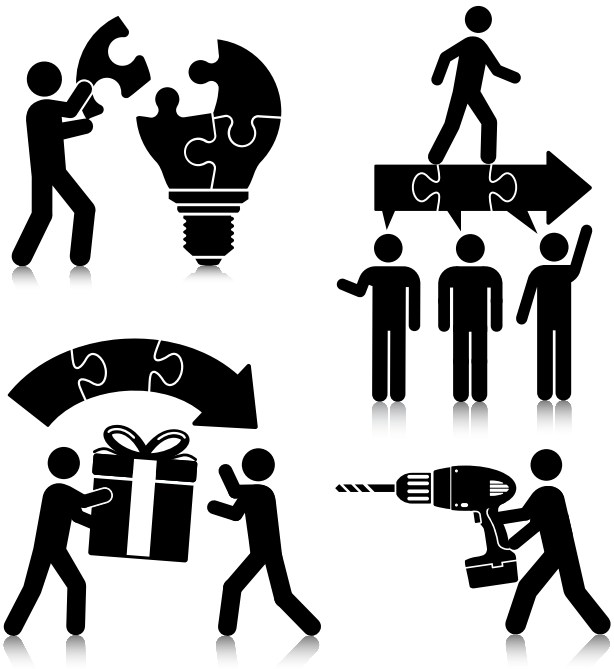


The relationship between connectedness and government, industrial and economic performance

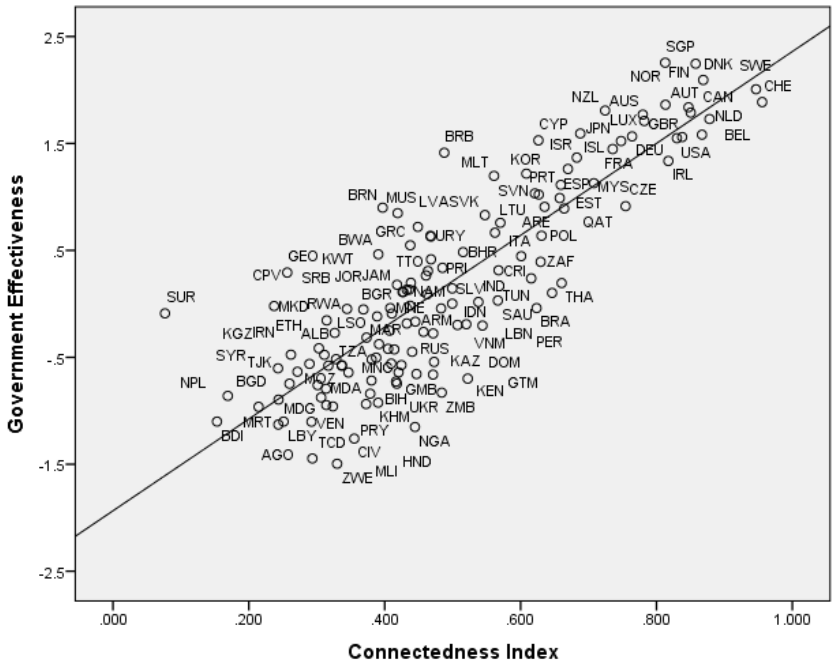
In this section the relationship between connectedness and a series of development indicators is briefly discussed. Although it helps us to explore how the connectedness index is related to other frequently used measures, disentangling causal relationships among these indicators is out of the scope of this report.

Graphs 1.6 to 1.9 present the relationship between connectedness and government effectiveness, regulatory quality, competitive industrial performance, and GDP per capita PPP. The graphs clearly show a strong positive linear relationship between connectedness and these performance indicators, mainly with government effectiveness and regulatory quality.

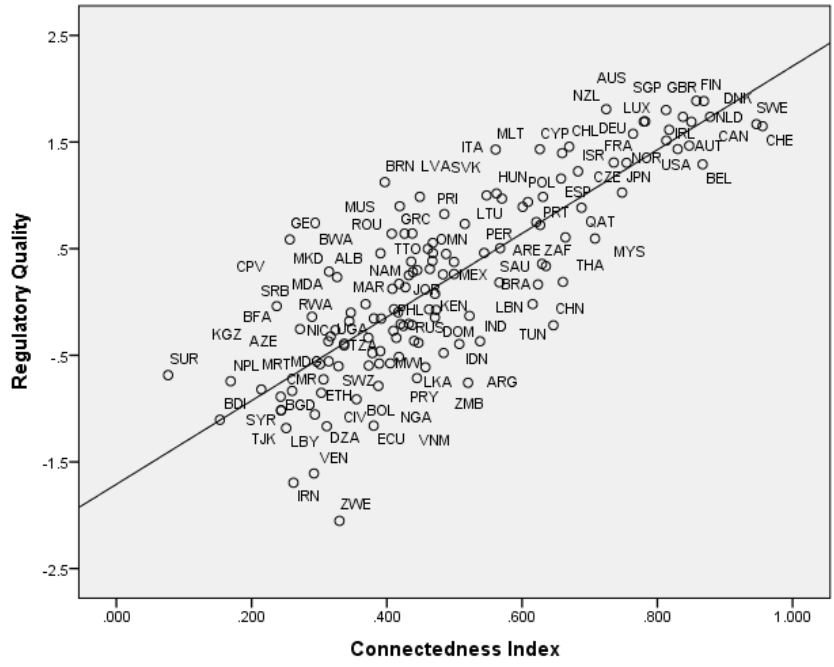
Apart from these graphs, the Pearson Product-Moment Correlation Coefficient is also used to measure the relationship between the different indicators. The correlations between the Connectedness Index and the four development measures listed above are high (see table 1.6), confirming what is apparent in the series of graphs. The Pearson correlation ranges from 0.739 (connectedness x CIP) to 0.858 (connectedness x Government Effectiveness). This indicates that, in the majority of the cases, connectedness and these development measures follow the same direction, i.e., when one increases (decreases), the other follows a similar standard.



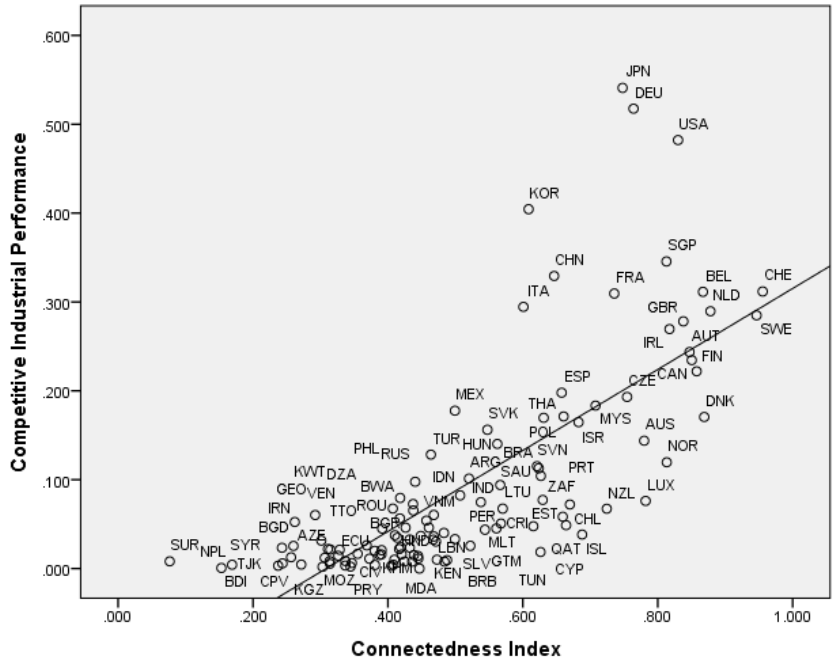
Graph 1.6: Government Effectiveness x Connectedness Index



Graph 1.7: Regulatory Quality x Connectedness Index



Graph 1.8: Competitive Industrial Performance x Connectedness Index



Graph 1.9: GDP per capita PPP x Connectedness Index

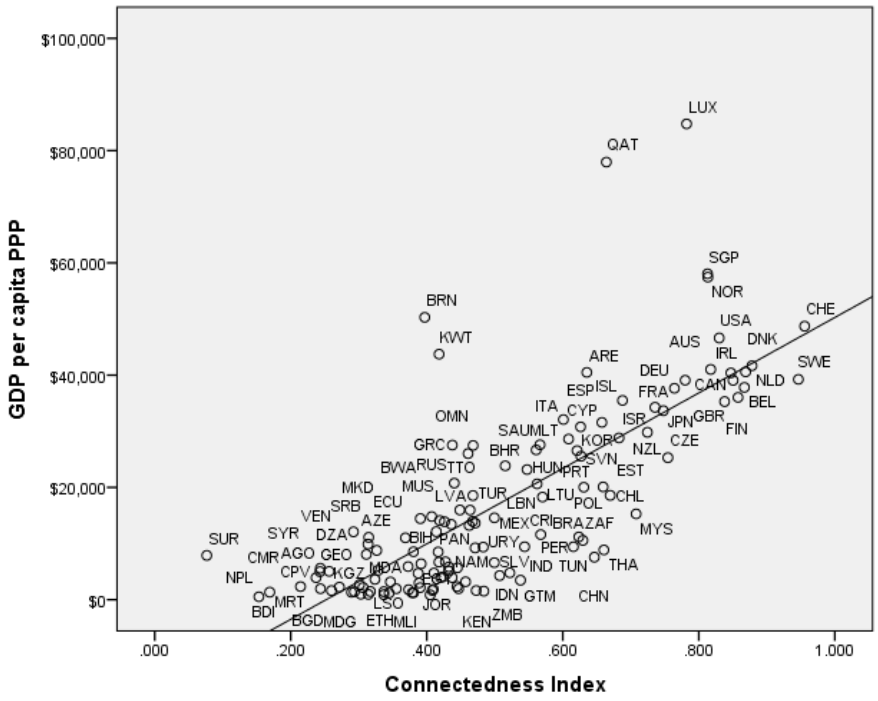


Table 1.6:
Correlations

	Connectedness Index	Political Globalization	Economic Globalization	International Networks	Inter-firm Networks	University-Industry Networks	Professional Association	Inter-org. Networks	% firms offering formal training	On-the-job training	Intra-org. Networks	Government Effectiveness	Regulatory Quality	CIP	GDP per capita
Connectedness Index	1														
Political Globalization	.550**	1													
Economic Globalization	.678**	.001	1												
International Networks	.821**	.803**	.597**	1											
Inter-firm Networks	.870**	.480**	.455**	.618**	1										
University-Industry Networks	.901**	.431**	.499**	.620**	.815**	1									
Professional Association	.080	-.133	-.091	-.161*	.021	.052	1								
Inter-org. Networks	.908**	.430**	.451**	.585**	.904**	.933**	.299**	1							
% firms offering formal training	.539**	.126	.303**	.293**	.267**	.294**	-.052	.260**	1						
On-the-job training	.920**	.439**	.570**	.676**	.865**	.882**	-.002	.875**	.222*	1					
Intra-org. Networks	.924**	.348**	.530**	.583**	.780**	.827**	.001	.807**	.872**	.885**	1				
Government Effectiveness	.858**	.197**	.634**	.537**	.756**	.827**	.067	.807**	.294**	.835**	.711**	1			
Regulatory Quality	.829**	.245**	.658**	.588**	.715**	.750**	.041	.740**	.292**	.779**	.669**	.924**	1		
CIP	.739**	.526**	.366**	.565**	.749**	.707**	-.005	.721**	.340**	.705**	.666**	.644**	.587**	1	
GDP per capita	.755**	.262**	.647**	.605**	.685**	.719**	-.047	.697**	.284**	.727**	.642**	.793**	.756**	.571**	1

***. Correlation is significant at the 0.01 level (2-tailed).*
**. Correlation is significant at the 0.05 level (2-tailed).*

Discussion

The Networks for Prosperity initiative aims to expand the understanding of how networks function in theory and in practice. Doing so exposes the ways in which networks can disseminate information capable of influencing development practices.

Research centers on UNIDO's recognition of networks as major contributor to development, and builds on a fast growing body of academic research, in many disciplines, which recognizes the importance of network governance as a distinct form of governance. This in mind, the Networks for Prosperity initiative acknowledge networks as an emerging governance structure build on the notion of sustained cooperation between actors and states as is outlined in the San José Declaration on *Challenges for Sustainable Development and International Cooperation in Middle-Income Countries: The Role of Networks for Prosperity* included in this report as Annex 3.

The importance of building sustained cooperation is also highlighted by the High-Level Panel of eminent persons on the Post-2015 development agenda. Following their meeting in March in Bali the High-Level Panel identified four key areas on which progress is needed to achieve their post-2015 vision. One of them is to reshape and revitalize global governance and partnerships. They note that in order to achieve prosperity for all, *"Enhanced and scaled up models of cooperation among all levels of governments, the private sector, and civil society at the global, regional, national, and sub-national levels will be needed"* Indeed, network cooperation is required across levels of governance.

INTERNATIONAL NETWORKS

These models of cooperation are increasingly captured by the concept of network governance by scholars. In her famous study Anne-Marie Slaughter even spoke of a New Global Order in her book on international network governance. One of the key challenges for states, and especially middle-income countries, is how to reap the benefits from sustained cooperation in a world which is characterized by a strong increase, even proliferation, of formal and informal bi-lateral and pluri-lateral clubs, organizations and commitments on many transnational policy issues. This proliferation of international cooperation and networks can be further illustrated by at least four interrelated trends.

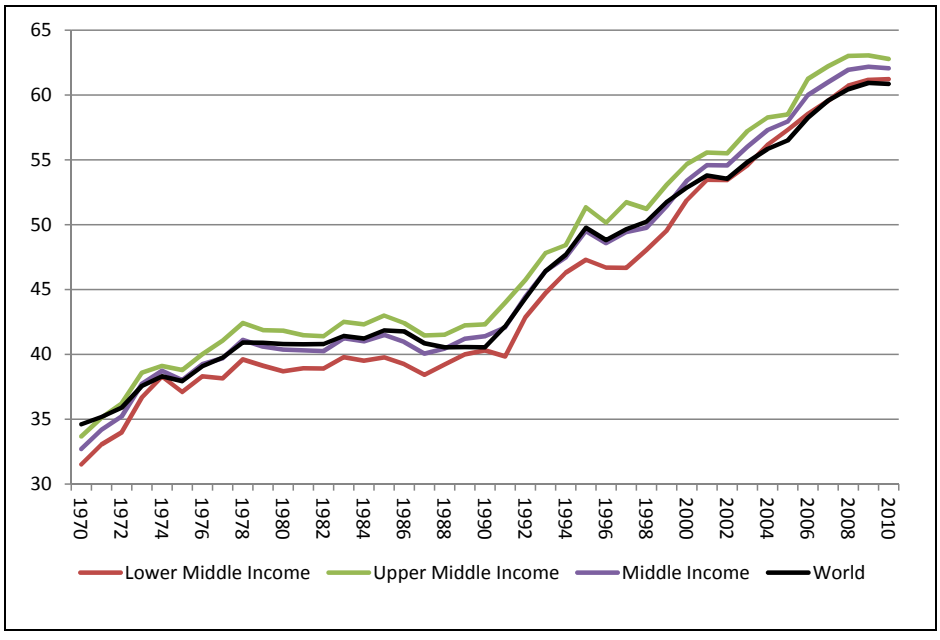
First, one can observe an increase in the number of formal international organizations. Concerning international intergovernmental organizations (IGOs), which can be defined as an organization composed primarily of sovereign states or other intergovernmental organizations and which are established by treaty or other agreement, one can observe a strong increase during the last four decades. The Union of International Associations database keeps track of this evolution. In 1951 they counted 123 of such IGO's, in 1970 there were 242 IGO's, in 1981 1.039 IGO's, in 1990 counted 4.322 IGO's and in 2012 7.696. Between 1980 and 2000 a few hundred IGO's were founded each year.

Second, we do not only witness an increase in number of international organizations but also in participation in these international organizations by many countries across the world, also "middle-income countries". This increased participation in international organizations is captured in our Connectedness Index (sub-index international) which relies partially on the KOF political globalization index (Dreher, 2006; Dreher et al., 2008). The KOF political globalization index captures the membership in IGOs, the number of international treaties which are signed and ratified by a country, the number of embassies across the world and participation in UN Security Council missions. Scores range from 0 to 100, 100 indicating a very high degree of political globalization and political international integration. For the KOF index we have a longer time series available. Graph 1.10 shows the evolution from 1970 to 2010 of participation of "middle-income countries" and all countries in international affairs. After the fall of the Berlin Wall one can observe a steady increase and global integration of countries internationally. More and more countries participate in the multilateral arena of international politics. One has to note here that this graph presents an average trend for the world and "middle-income countries" which does not reveal the significant variation between individual countries.

Third, countries are not only engaging increasingly in a growing number of multilateral international organizations. They also pursue very actively bilateral international cooperation. Many countries are, especially in the context of economic cooperation, pursuing bilateral agreements. The latter is clearly illustrated by the increase in bilateral trade agreements and bilateral investment treaties. Germany set the precedent for bilateral state-to-state investment relations in 1959. Since then, and especially in the last decade we have witnessed a proliferation of BITS. By the end of 2011 UNCTAD counted 2833 BITS in force.

Fourth, on top of these formal forms of international cooperation we observe an increase in the number of informal or issue-specific networks. There are no official figures on this and it is hard to determine their nature and set-up, but if one choses a specific policy issue, one finds many international networks and knowledge platforms which address the issue. Take for example climate change and low emission development strategies. The Coordinated Low Emission Assistance Network (CLEAN) made an inventory of international and regional knowledge platforms which deal with low emission strategies and identified a few dozen hybrid networks dealing with low emissions. These networks typically involve multiple stakeholders such as governments, IGO's, NGOs, academia, etc. and aim to diffuse information and generate policy learning. In this category of international platform formation many international organizations are playing an important role. These international platforms play a key role in policy diffusion since some of them offer *"an integrated set of services that*

Graph 1.10: KOF Political Globalization 1970 - 2010



Source: KOF Index of Globalization

provide information, tools and resources to support policy learning (Rayner et al, 2011, p. 141). Many of these knowledge platforms aim to promote structural policy change.

An interesting example in this context is UNIDO's Green Industry Platform. This is a voluntary multi-stakeholder partnership designed to provide a framework for participants, individually or in groups, to take specific and measurable action to advance environmentally sustainable approaches and employment in industry. The Platform was officially launched at Rio+20 in June 2012. It operates in four interrelated areas: resource efficiency for sustainable production and consumption; water optimization in manufacturing; industrial energy efficiency; and chemicals management. Another example is the UNIDO-UNEP network of national cleaner productions centres (NCPCs), which meet in the context of a global forum and which were discussed in the first Networks for Prosperity report.

NATIONAL NETWORKS

Not only international networks are proliferating but also there is increasing recognition of the importance of network governance for private sector development and economic development within specific countries. The host country of the High-Level Conference of "Middle-Income Countries", Costa Rica, provides an interesting example in this context which was presented at length in the second Networks for Prosperity report. The case of Costa Rica shows the importance of developing public-private as well as private-private networks.

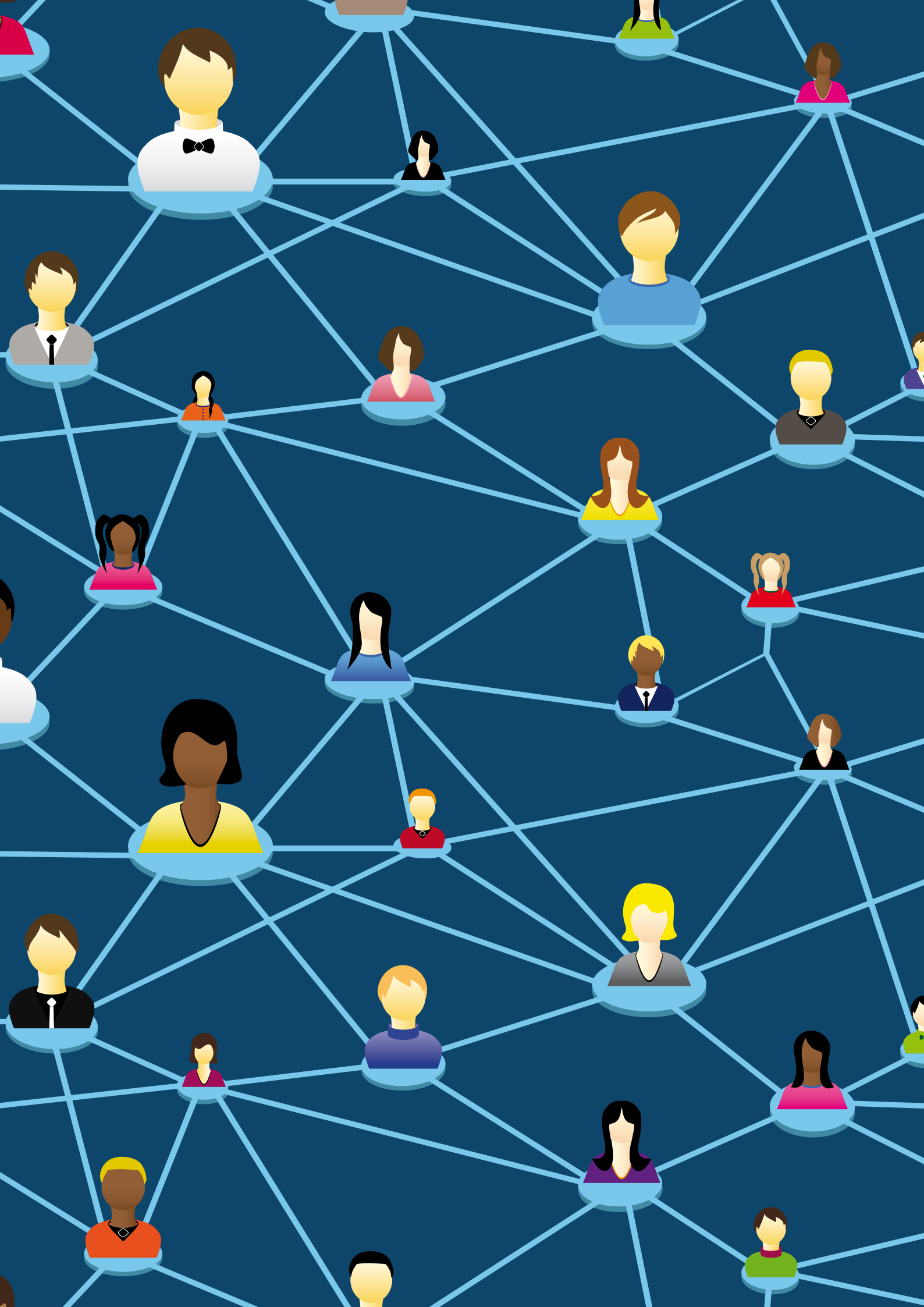
In the context of the public-private networks several types of networks can emerge. States can initiate innovation and change. In this model state-owned or dominated firms are set up in specific economic sectors. In analyzing the strong growth in several "middle-income country" economies, Amsden shows that manufacturing state-owned enterprises (SOE's) were concentrated in heavy industries such as petroleum and metallurgy (iron and steel), that were strongly influential on the development of other firms through their national leadership. "SOEs [...] *undertook exemplary technology transfers, strengthened professional management, invested in R&D, and became a training ground for technical staff and entrepreneurs who later entered private industry.*" (Amsden, 2001, pp. 213-214) A similar initiating role with strong spill-over can also be observed in key areas such as Research and Development support. Peter Evans (1995, p. 147) describes the case of South Korean investments in R&D, that were multiplied in the 1980's and 1990's, to reach levels higher or equivalent to those of most advanced countries. This increased investment in R&D continues to this day. Evans (1995, p. 147) argues that the initial investments by the state and the interaction between state capital and private capital was key to achieve this strong increase.

Secondly, purely private networks can take many forms such as business association, industry-university collaboration, private regulatory initiatives, etc. A key focus in the current literature is on economic clusters which are geographic concentrations of interconnected companies, specialized suppliers, service providers, and associated institutions in a particular field. Leading examples include financial services (London City, New York), film (Hollywood and "Bollywood"), cars (Detroit, Modena, Toyota City, Wolfsburg, Stuttgart, etc.), watches (Switzerland and Japan), optical equipment (Tokyo), flowers (The Netherlands and Colombia), computer software (Silicon Valley, Bangalore), marine technology (Southwest Norway), mobile telecommunications (Stockholm and Helsinki), wine (Barossa Valley, Rioja, Bordeaux, Southern Chile and parts of California), or biotech, life sciences and medical instruments (Boston's Route 128, BioValley 21, Medicon Valley 22) (European Commission, 2008). Clusters can be found in many economies around the world, each following its own trajectory and history. Cluster development initiatives are, as Porter et al. (Porter, 1998, 2000; Delgado et al., 2011) argue, an important new direction in economic policy, building on earlier efforts in macroeconomic stabilization, privatization, market opening, and reducing the costs of doing business. A prominent example concerns recent efforts undertaken by the European Commission (DG Entreprise) to further develop clusters (see European Commission, 2008a). The importance of clusters is also apparent in middle-income countries as is illustrated by the case of Costa Rica.

Conclusion

The Networks for Prosperity Initiative and the related multi-dimensional and multi-level Connectedness Index shows the increasing importance of forming cooperation and networks to pursue prosperity. From the perspective of each individual country network cooperation results in two distinct challenges we identify in the Networks for Prosperity reports.

First, for those countries which are less connected the challenge is to become more connected. The Networks for Prosperity report clearly identifies that some countries are more connected, networked than others. What emerges from this analysis is not so much a division between the 'North' and 'South', but between 'highly networked countries' and 'less networked countries', countries moving from the periphery to the core grasping the importance of being connected. The hypothesis is that those countries that understand the importance of networks can develop distinct advantages in their pursuit of prosperity. Second, for those well connected countries, being involved in many different international constellations and being linked, via different connections, to other countries, the challenge raises of how to make efficient use of these connections. Network connections can serve many purposes. The most important one from the perspective of the Networks for Prosperity report initiative is to facilitate policy learning, information exchange and dissemination on a range of policy issues. In order to maximize information diffusion and knowledge creation we argued in the first Networks for Prosperity report report that one does not only need to increase the number of (international) network connections, a process which is currently happening at a fast pace, but also that one has to 'deepen'/embed these network connections as was discussed in the first Networks for Prosperity report. In other words one has to build sustained network connections which will allow for frequent interaction and dialogue in order to generate trust between partners which facilitates information exchange and knowledge creation. How to do this is a key challenge. Building effective networks requires time and investment. This brings opportunity costs. As a result, strategic thinking (what do we want to achieve, how do we want to achieve this, etc.) on network involvement becomes a key issue.



Recommendations

The Networks for Prosperity initiative has formulated the following recommendations and remarks which remain of critical relevance for consideration by Member States. On the basis of recommendation (vi), a successful conference of middle-income countries was organized by the Government of Costa Rica and facilitated by UNIDO. This Conference took place in San José, Costa Rica, in June 2013 (Annex 3):

(i) **The international community should actively promote knowledge networking** and network governance structures for achieving local, regional and global development objectives.

(ii) **Member States should encourage and facilitate** the international knowledge networking capacities of their own public and private institutions.

(iii) **International organizations should improve their inter-institutional information** and knowledge exchange systems and facilitate better knowledge networking among their members.

(iv) **An international and cross-sectoral consultation network should be established** to further develop the initial findings.

(v) **The international community should recognize that knowledge networks, multi-sector partnerships and network governance should be at the centre of any emerging post-2015 development agenda as these are crucial ways and means towards tackling the complexities of today's state of development and globalization.** In particular, a bigger picture approach should be taken in the deliberations on the future of MDG-8 on the global partnership for development, enriching it with considerations of knowledge networking and network governance, and mainstreaming it to the centre of the development agenda. It should be recognized that without knowledge sharing and networking, including technology transfer, sustainable and inclusive patterns of global development cannot be achieved.

(vi) **Middle-income countries should enhance their role in global development cooperation through intensified knowledge networking, policy coordination and the establishment of network governance structures in fields of their shared interest.** It should be recognized that without the pro-active and constructive cooperation and collaboration of middle-income countries, no meaningful global development agenda, strategy or goal can be formulated or achieved.

(vii) **The international community should embrace South-South and triangular cooperation, based on knowledge exchange and technology partnerships, as effective ways for achieving development goals, and anchor these in the post-2015 development agenda.** In particular traditional donors and international organizations should consider triangular cooperation modalities for sustainably supporting capacity building efforts, especially in middle-income countries, and for ensuring long-term results and impact of development activities, beyond the immediately visible outputs. Also, middle-income countries and international organizations should actively support bilateral and multilateral South-South cooperation, both on regional and global levels.

(viii) **The international community should advance its analysis on the link between a country's connectedness and its population's prosperity as the ultimate goal of development.** In particular, international organizations, financial institutions and their academic partners should intensify their empirical research and policy analysis in this field, and collaborate amongst each other to leverage each other's knowledge. Member States should encourage their academic institutions and development agencies to actively engage in programmes that advance the understanding of the nexus between knowledge networking, economic network governance and prosperity, and support ongoing efforts in this regard.

Annex 1
Methodological note on the connectedness index

1. SELECTION OF VARIABLES

Three researches screened the identified datasets and made a selection of a first group of indicators. The aim was to identify variables which either directly measured a degree of connectedness or of networks or phenomena that are instrumental to strengthen networks. This initial selection was further refined considering the following criteria. First, we took into account the data coverage, both in terms of number of countries and years. Some of the selected indicators contain data only for a few sets of countries (typically, for one specific region such as barometers), and others only for one specific year that does not match with other selected indicators. As a result they were excluded from the index construction. Secondly, we performed an analysis of the content of each specific variable in order to identify indicators containing mixed concepts, i.e., composite indicators which contain networks measures but also capture other concepts that were not related to networks. If we could not separate them out we did not include them. Lastly, we performed an analysis to identify whether two or more indicators measured the same concept in order to avoid overload the composite connectedness index aggregating several times the same concept. Strongly related indicators were not included. For example, several indicators measure the economic flow between countries using more or less the same data. Another indicator initially selected for inclusion, as a proxy for inter-organizational networks, was patents. There is a significant body of literature that identifies patents as an interesting source for uncovering relations between organizations since several patents are co-owned between organizations (see Owen-Smith and Powell, 2004). However, patents do overlap with industry-university collaboration.

2. RE-SCALING OF VARIABLES

After the selection of indicators, the first step on creating the connectedness index and its three sub-indices was to re-scale each of the original indicators from 0 to 1, in order to normalize all indicators according to one identical scale. Normalization was required prior to data aggregation because the indicators have different measurement units (Nardo et al, 2005). In other words, as the original indicators have different scales - for example, 0-100 in the case of KOF political globalization, and 1-7 in the case of University-industry collaboration – we have transformed all the original indicators to one common scale ranging from 0-1, to make them comparable. We also applied the standardization method (Freudenberg, 2003), also called z-scores, that converts indicators to a scale with a mean of zero and standard deviation of one. The results of both methods were very similar and we opted for the re-scaling method, since it produces a small interval (0,1), increasing the effect of each part in the composite indicator, more than the z-scores transformation (Nardo et al, 2005).

The following procedure was used to calculate the indices.

Firstly, for the international networks sub-index:

i. Re-scale Political and Economic Globalization 2010 on 0-1 scale using the formula:

$$\textit{(1) Re-scaled score} = \frac{\textit{(Country Score – Minimum Country Score)}}{\textit{(Maximum Country Score – Minimum Country Score)}}$$

The minimum and maximum values of all countries available in the KOF Index of Globalization 2010 were considered. For 30 of the 208 countries, KOF index of economic globalization was not available. In these cases, KOF actual flows were used to replace economic globalization. Also, for 29 countries for which we have calculated the international networks sub-index, both economic globalization and actual flows were not provided by KOF Index of Globalization in 2010. For these 29 countries it was considered the average score among all countries in the same region, according to the United Nations Statistics Division Standard Country and Area Codes Classification. Lastly, KOF index of globalization do not provide data for Mayotte in 2010. In this case, data from 2009 was selected.

ii. Calculate the arithmetic mean of the re-scaled Political and Economic Globalization

iii. Re-scale the average using formula (1)

Secondly, the Inter-organizational networks sub-index:

i. Re-scale Networks and supporting industries using formula (1). The minimum and maximum values of all countries available in the Global Competitiveness Report 2010-2011 were used. Data for Suriname was not available in the Global Competitiveness Report 2010-2011. In this case, data from the 2009-2010 report was used.

ii. Re-scale University x Industry Collaboration using formula (1). The minimum and maximum values of all countries available in the Global Competitiveness Report 2009-2010.

iii. Professional Association is the percentage of interviewees that are member of one professional association. It was created using the most recent data for each country from the World Values Survey, in the following way:

a. For countries for which the question “Belong to professional associations” is available

$$\textit{Professional Association} = \frac{\textit{No. of members}}{\textit{No. of interviewees}}$$

b. For countries which the question “Active/Inactive membership of professional organization” is available

$$\textit{Professional Association} = \frac{\textit{(No. of active + No. of inactive members)}}{\textit{No. of interviewees}}$$

iv. Re-scale Professional Association using formula (1). The minimum and maximum values considering all countries in the selected surveys were used. For countries whose data were not available in the World Values Survey, it was considered the average score of all countries in the same region. As there weren’t

countries from Oceania (apart from Australia and New Zeeland) it was considered the average score of all developing countries.
v. Calculate the arithmetic mean of the three re-scaled components
vi. Re-scale the average

Thirdly, the Intra-organizational networks sub-index was created as follows:

i. Re-scale the percentage of Firms Offering Formal Training using formula (1). The minimum and maximum values were used, considering the most recent survey for each country.
ii. Re-scale On-the-job training using formula (1). The minimum and maximum values were used, considering all countries available in the Global Competitiveness Report 2010-2011.
iii. Calculate the arithmetic mean of the two components. When only one component was available, the single value was considered without averaging.
iv. Re-scale the average using formula (1).

Lastly, the connectedness index was calculated as the arithmetic mean of its three components: international networks, inter-organizational networks and intra-organizational networks.

For the aggregation of the indicators we choose the arithmetic mean - equal weighting (Nardo et al, 2005, p. 21) -, since this is an exploratory study and we do not intend to give privilege to one specific indicator over another one, setting distinct weights for each indicator. Also, the possibility was considered to use geometric aggregation in order to avoid full compensability, i.e. poor performance in one indicator being compensated by a high performance in other (Nardo et al, 2005, p. 79). However, as we have natural zeros in the professional association indicator, applying geometric aggregation would imply a loss of variance in our composite indicator.

3. Comparing the connectedness-index on the basis of median

It could be objected that in theory, through the re-scaling method, the interpretation of the median may be misleading since there is a theoretical possibility for interconnectedness to be low, although the median is high, because the maximum observation in a dataset (real observations) is far removed from a theoretical maximum. In other words, one could, on the basis of theory, construct a theoretical maximum for the sub-indices and compare that with the observed maximum in the dataset. If there is a significant gap between the theoretical maximum and the observed maximum, the median might be high, but the interconnectedness theoretically low. This argument could also be reversed with regard to the minimum scores. As a result, we assume that the observed maximum and minimum correspond to a significant degree to the theoretical maximum and minimum. We did not find indications that this might not be the case. In addition, we use the median mostly for comparative purposes.

4. Use of the Pearson Correlation Coefficient

Given the linear relationship between the variables (see graphs 1.6-1.9) the Pearson Product-Moment Correlation Coefficient was used to calculate the correlation between the different indicators. The Pearson correlation(r) measures the degree of linear relationship between two variables and ranges from -1.0 to +1.0. The closer r is to +1 or -1, the more closely the two variables are related. The sign of the correlation coefficient (+ , -) defines the direction of the relationship, either positive or negative. A positive correlation coefficient means that as the value of one variable increases, the value of the other variable increases; as one decreases the other decreases. A negative correlation coefficient indicates that as one variable increases, the other decreases, and vice-versa.
The significance (probability) of the correlation coefficient is determined from the t-statistic. The probability of the t-statistic indicates whether the observed correlation coefficient occurred by chance if the true correlation is zero. In other words, it asks if the correlation is significantly different than zero.

5. *Classification of Countries According to Level of Development*

Table 2.7: Countries' classification according to The World Bank Country Groups by Income

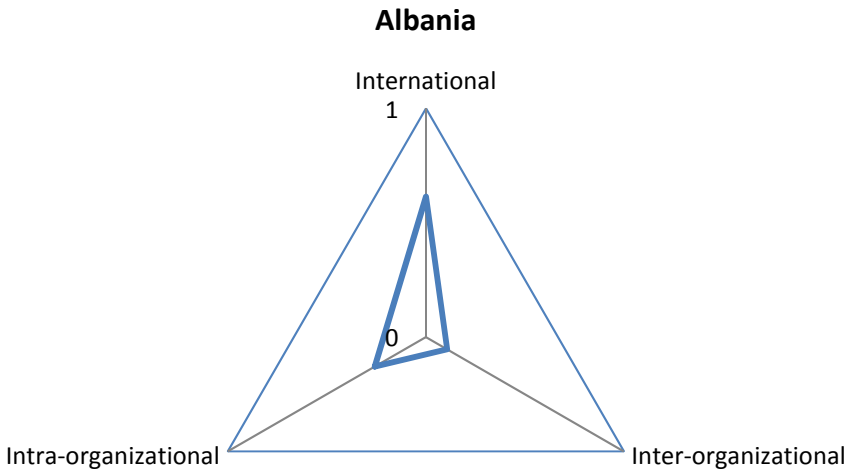
High Income: OECD	High Income: nonOECD	Upper Middle Income	Lower Middle Income	Low Income
Australia	Bahrain	Albania	Armenia	Bangladesh
Austria	Barbados	Algeria	Bolivia	Benin
Belgium	Brunei Darussalam	Angola	Cameroon	Burkina Faso
Canada	Croatia	Argentina	Cabo Verde	Burundi
Chile	Cyprus	Azerbaijan	Côte d'Ivoire	Cambodia
Czech Republic	Kuwait	Bosnia and Herzegovina	East Timor	Chad
Denmark	Latvia	Botswana	Egypt	Ethiopia
Estonia	Lithuania	Brazil	El Salvador	Gambia
Finland	Malta	Bulgaria	Georgia	Kenya
France	Oman	China	Ghana	Kyrgyzstan
Germany	Puerto Rico	Colombia	Guatemala	Madagascar
Greece	Qatar	Costa Rica	Guyana	Malawi
Iceland	Russian Federation	Dominican Republic	Honduras	Mali
Ireland	Saudi Arabia	Ecuador	India	Mozambique
Israel	Singapore	Hungary	Indonesia	Nepal
Italy	Trinidad and Tobago	Iran	Lesotho	Rwanda
Japan	United Arab Emirates	Jamaica	Mauritania	Tajikistan
Korea, Republic of	Uruguay	Jordan	Moldova	Tanzania
Luxembourg		Kazakhstan	Mongolia	Uganda
Netherlands		Lebanon	Morocco	Zimbabwe
New Zealand		Libyan Arab Jamahiriya	Nicaragua	
Norway		Macedonia	Nigeria	
Poland		Malaysia	Pakistan	
Portugal		Mauritius	Paraguay	
Slovakia		Mexico	Philippines	
Slovenia		Montenegro	Senegal	
Spain		Namibia	Sri Lanka	
Sweden		Panama	Swaziland	
Switzerland		Peru	Syrian Arab Republic	
United Kingdom		Romania	Ukraine	
United States		Serbia	Viet Nam	
		South Africa	Zambia	
		Suriname		
		Thailand		
		Tunisia		
		Turkey		
		Venezuela		

Source: The World Bank

Annex 2
Country Profiles

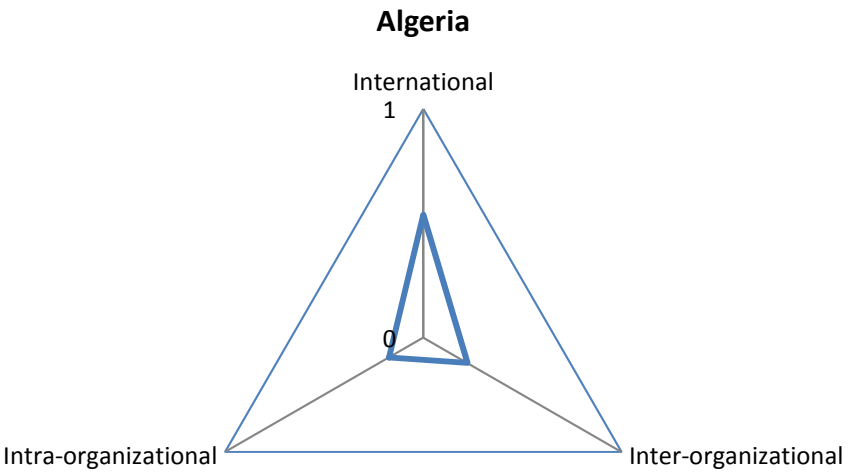
Albania
Connectedness Index 2013: 0.326
Rank 2013: 112 of 138
Rank 2011: 126 of 132
Rank 2012: 119 of 132
Connectedness Profile 2013

International Networks: 0.614
Inter-organizational Networks: 0.108
Intra-organizational networks: 0.257



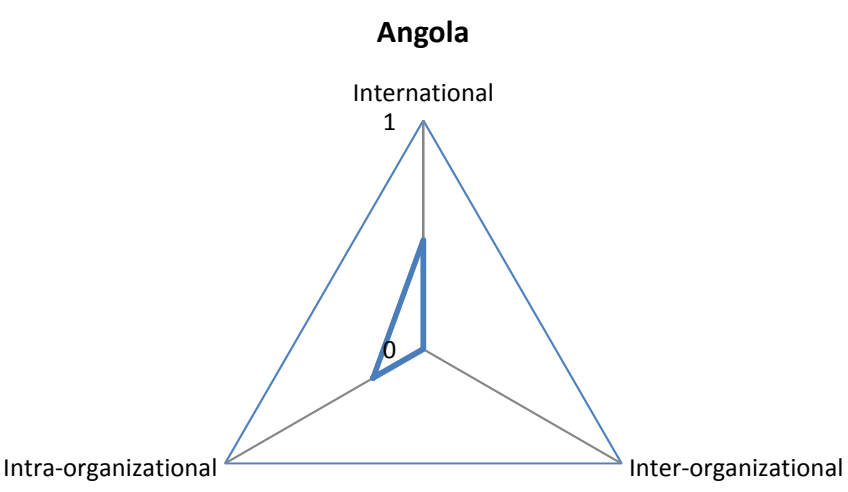
Algeria
Connectedness Index 2013: 0.311
Rank 2013: 118 of 138
Rank 2011: 123 of 132
Rank 2012: 121 of 132
Connectedness Profile 2013

International Networks: 0.537
Inter-organizational Networks: 0.223
Intra-organizational networks: 0.173



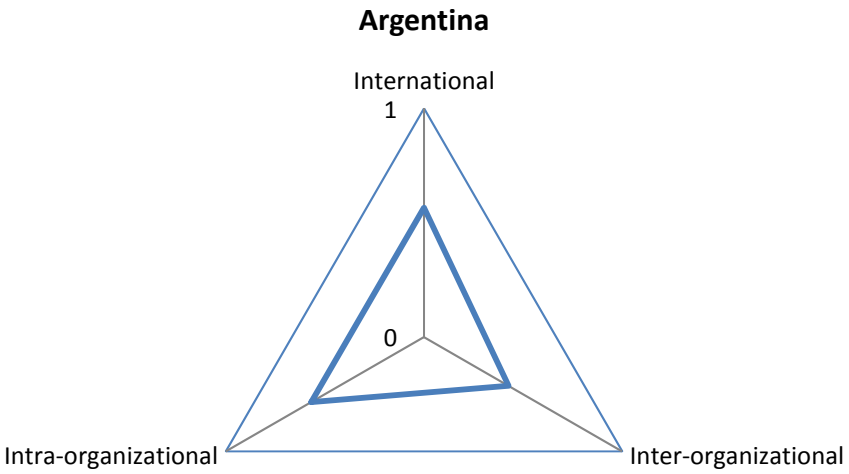
Angola
Connectedness Index 2013: 0.243
Rank 2013: 132 of 138
Rank 2011: of 132
Rank 2012: of 132
Connectedness Profile 2013

International Networks: 0.477
Inter-organizational Networks: 0.000
Intra-organizational networks: 0.253



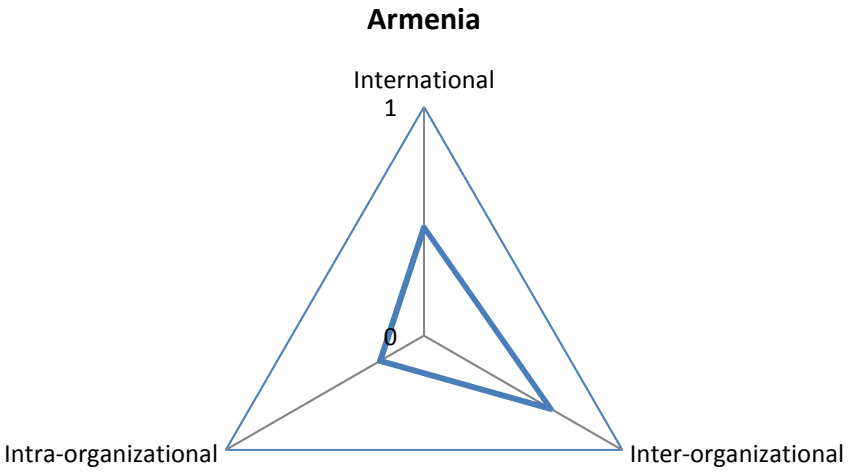
Argentina
Connectedness Index 2013: 0.520
Rank 2013: 49 of 138
Rank 2011: 53 of 132
Rank 2012: 46 of 132
Connectedness Profile 2013

International Networks: 0.565
Inter-organizational Networks: 0.427
Intra-organizational networks: 0.569



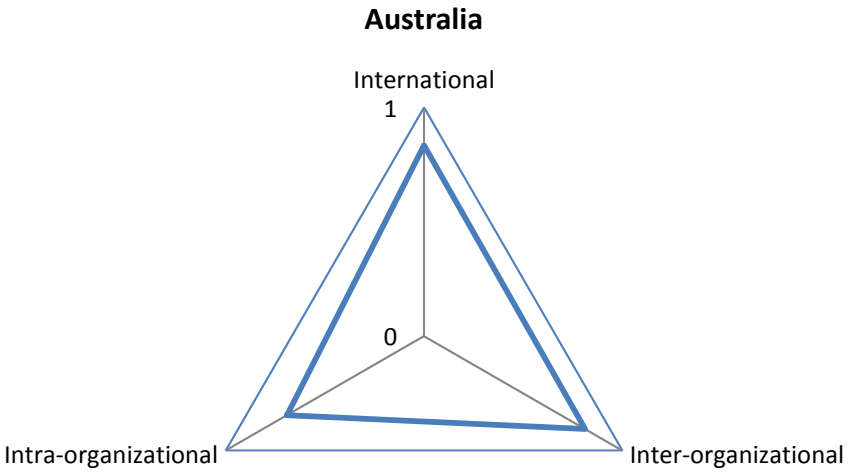
Armenia
Connectedness Index 2013: 0.445
Rank 2013: 70 of 138
Rank 2011: 88 of 132
Rank 2012: 76 of 132
Connectedness Profile 2013

International Networks: 0.473
Inter-organizational Networks: 0.641
Intra-organizational networks: 0.221



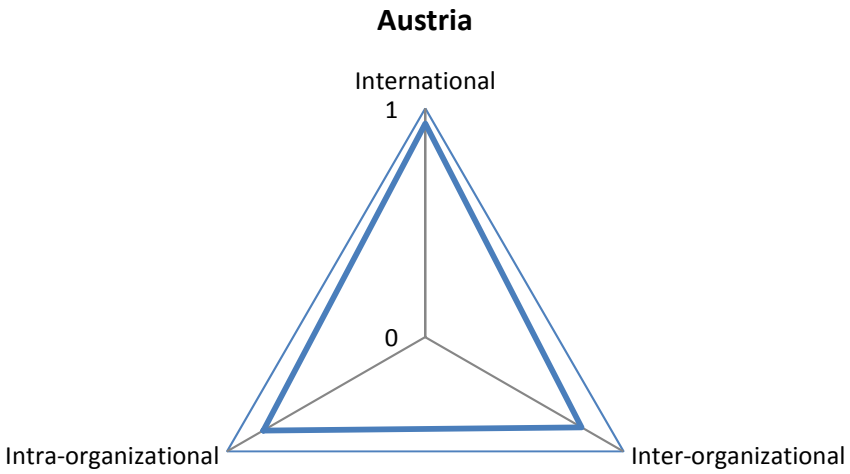
Australia
Connectedness Index 2013: 0.780
Rank 2013: 15 of 138
Rank 2011: 16 of 132
Rank 2012: 15 of 132
Connectedness Profile 2013

International Networks: 0.834
Inter-organizational Networks: 0.813
Intra-organizational networks: 0.692



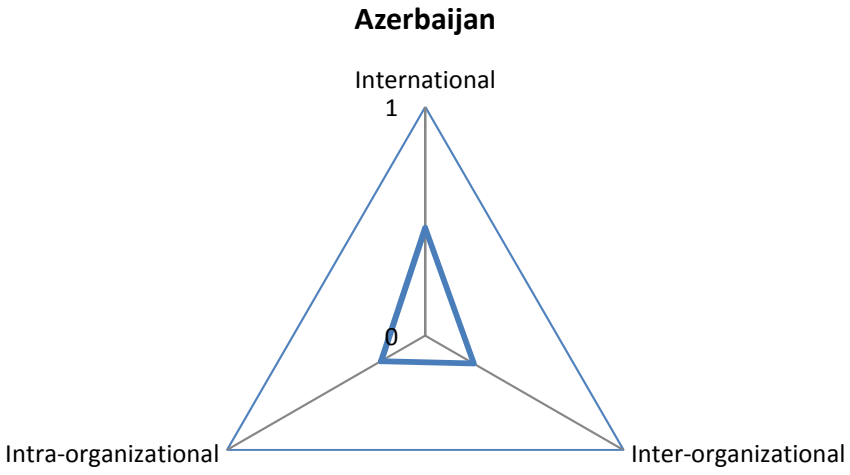
Austria
Connectedness Index 2013: 0.847
Rank 2013: 8 of 138
Rank 2011: 8 of 132
Rank 2012: 12 of 132
Connectedness Profile 2013

International Networks: 0.934
Inter-organizational Networks: 0.790
Intra-organizational networks: 0.818



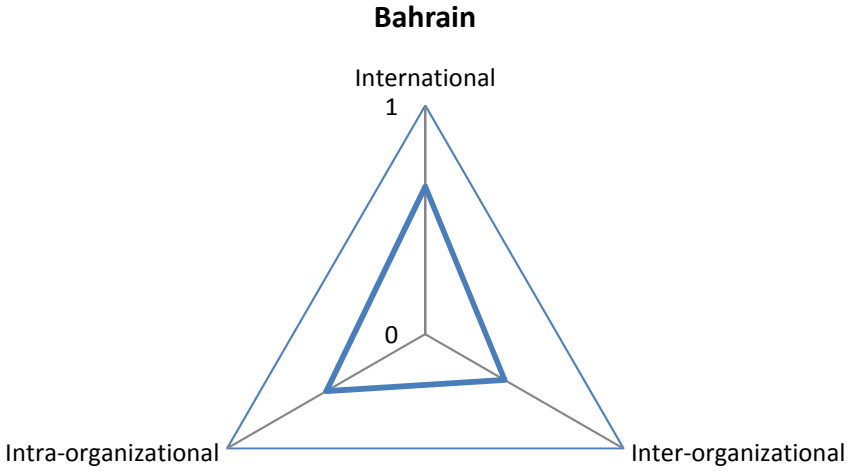
Azerbaijan
Connectedness Index 2013: 0.314
Rank 2013: 117 of 138
Rank 2011: 91 of 132
Rank 2012: 99 of 132
Connectedness Profile 2013

International Networks: 0.472
Inter-organizational Networks: 0.245
Intra-organizational networks: 0.224



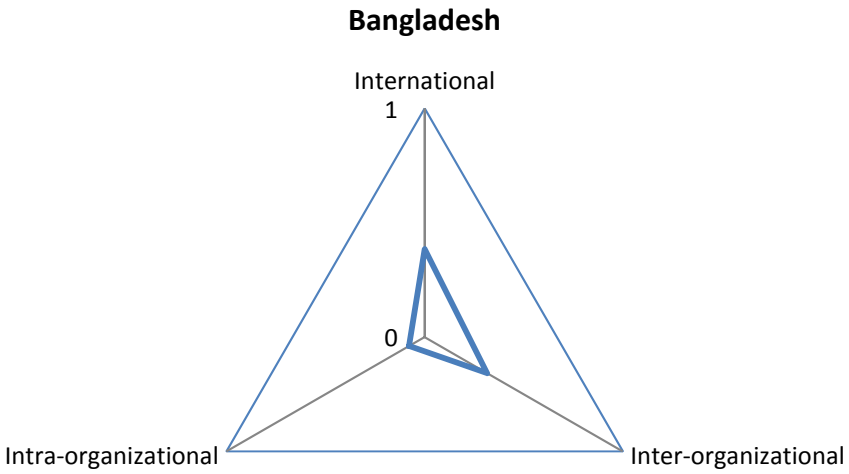
Bahrain
Connectedness Index 2013: 0.515
Rank 2013: 50 of 138
Rank 2011: 50 of 132
Rank 2012: 63 of 132
Connectedness Profile 2013

International Networks: 0.644
Inter-organizational Networks: 0.401
Intra-organizational networks: 0.500



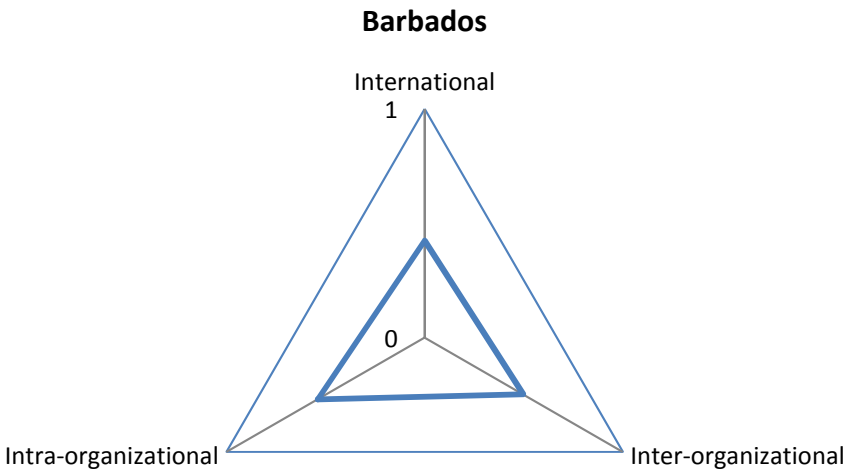
Bangladesh
Connectedness Index 2013: 0.260
Rank 2013: 128 of 138
Rank 2011: 128 of 132
Rank 2012: 130 of 132
Connectedness Profile 2013

International Networks: 0.385
Inter-organizational Networks: 0.316
Intra-organizational networks: 0.079



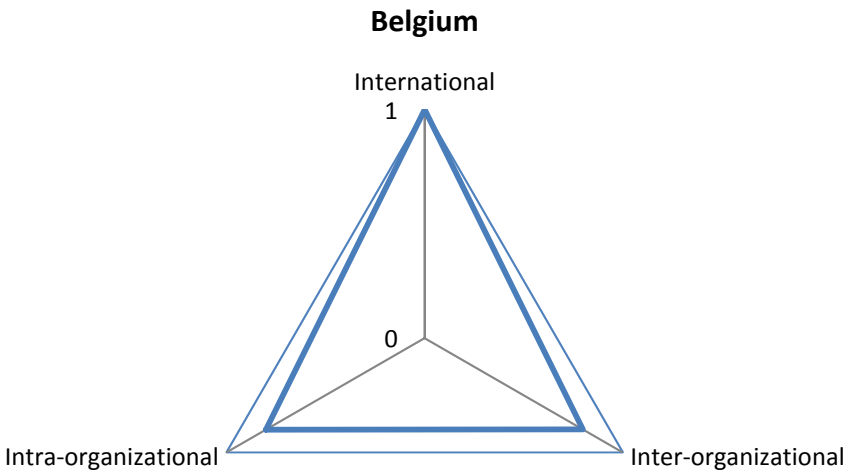
Barbados
Connectedness Index 2013: 0.488
Rank 2013: 54 of 138
Rank 2011: 52 of 132
Rank 2012: 47 of 132
Connectedness Profile 2013

International Networks: 0.424
Inter-organizational Networks: 0.498
Intra-organizational networks: 0.541



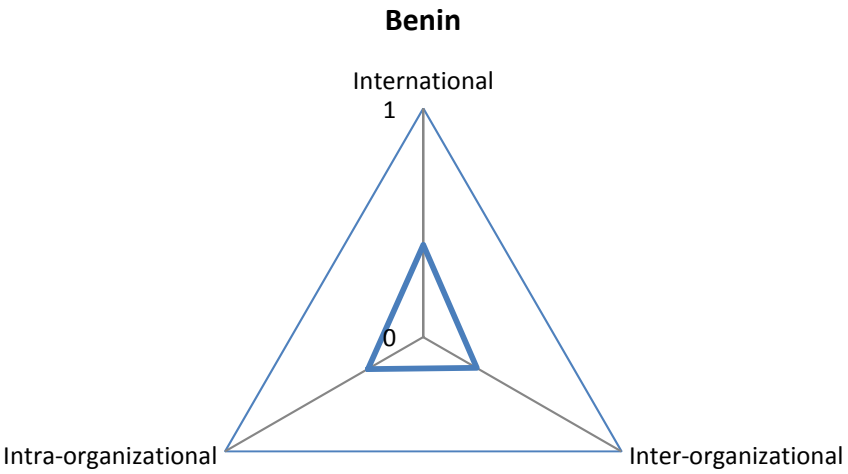
Belgium
Connectedness Index 2013: 0.867
Rank 2013: 5 of 138
Rank 2011: 6 of 132
Rank 2012: 5 of 132
Connectedness Profile 2013

International Networks: 1.000
Inter-organizational Networks: 0.799
Intra-organizational networks: 0.802



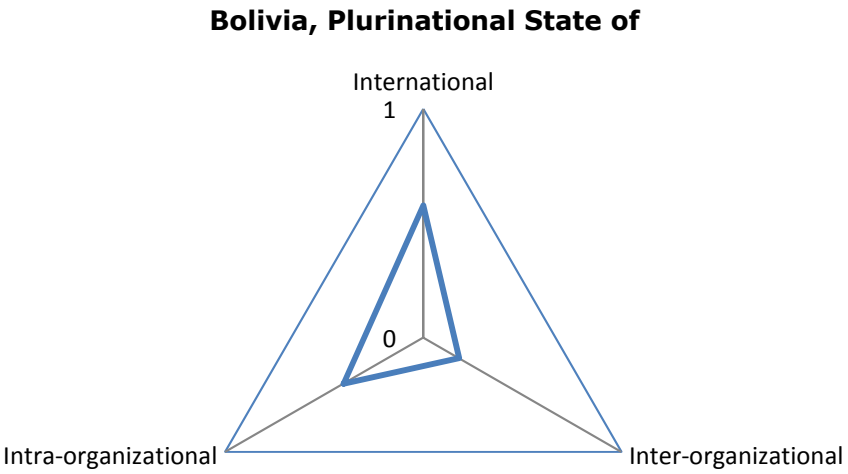
Benin
Connectedness Index 2013: 0.317
Rank 2013: 114 of 138
Rank 2011: 120 of 132
Rank 2012: 117 of 132
Connectedness Profile 2013

International Networks: 0.402
Inter-organizational Networks: 0.269
Intra-organizational networks: 0.279



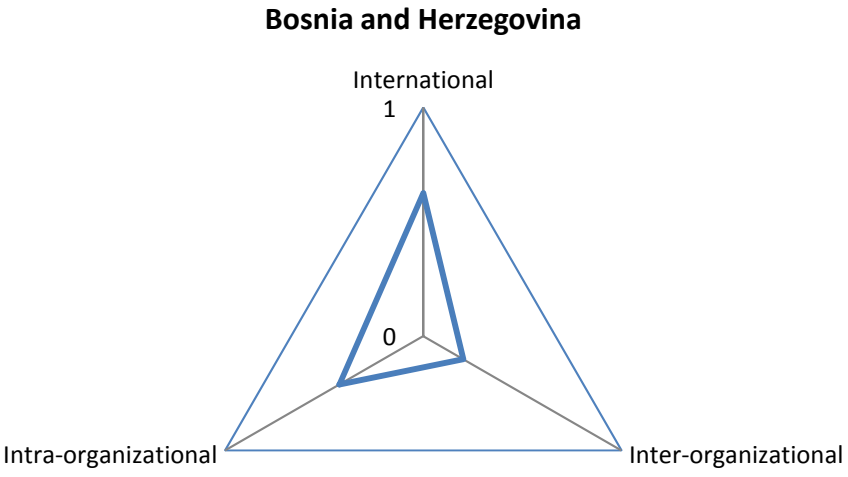
Bolivia, Plurinational State of
Connectedness Index 2013: 0.387
Rank 2013: 98 of 138
Rank 2011: 102 of 132
Rank 2012: 101 of 132
Connectedness Profile 2013

International Networks: 0.578
Inter-organizational Networks: 0.181
Intra-organizational networks: 0.403



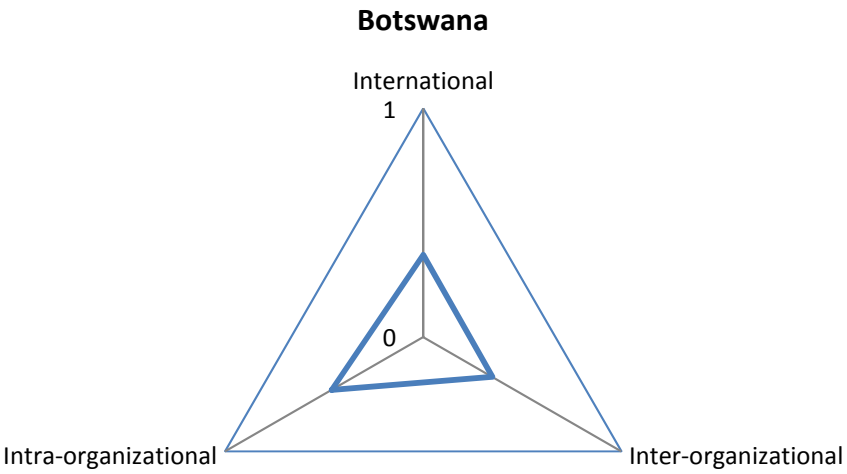
Bosnia and Herzegovina
Connectedness Index 2013: 0.417
Rank 2013: 86 of 138
Rank 2011: 112 of 132
Rank 2012: 105 of 132
Connectedness Profile 2013

International Networks: 0.625
Inter-organizational Networks: 0.202
Intra-organizational networks: 0.423



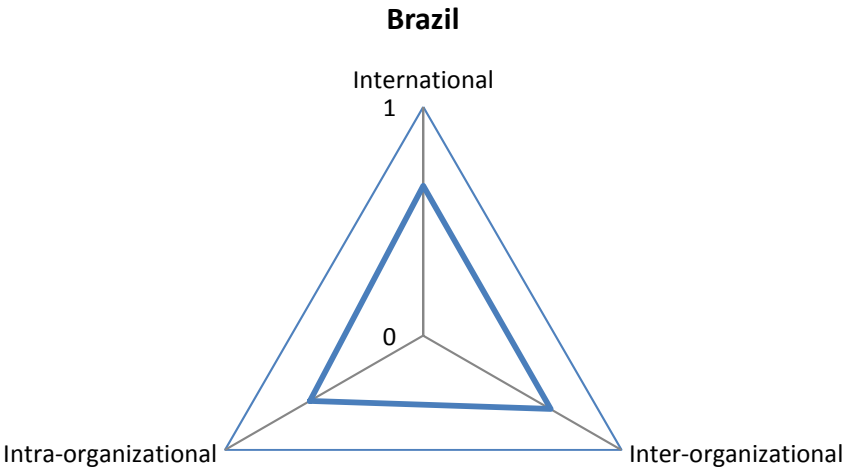
Botswana
Connectedness Index 2013: 0.391
Rank 2013: 95 of 138
Rank 2011: 93 of 132
Rank 2012: 90 of 132
Connectedness Profile 2013

International Networks: 0.360
Inter-organizational Networks: 0.349
Intra-organizational networks: 0.463



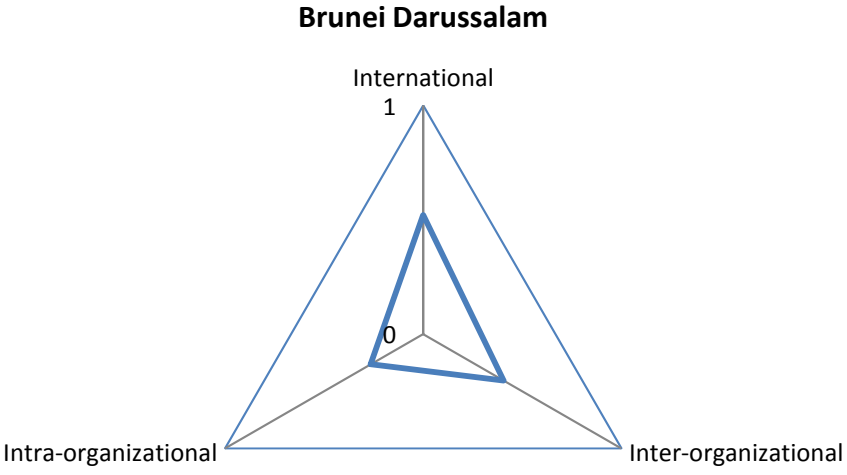
Brazil
Connectedness Index 2013: 0.624
Rank 2013: 35 of 138
Rank 2011: 39 of 132
Rank 2012: 32 of 132
Connectedness Profile 2013

International Networks: 0.655
Inter-organizational Networks: 0.643
Intra-organizational networks: 0.572



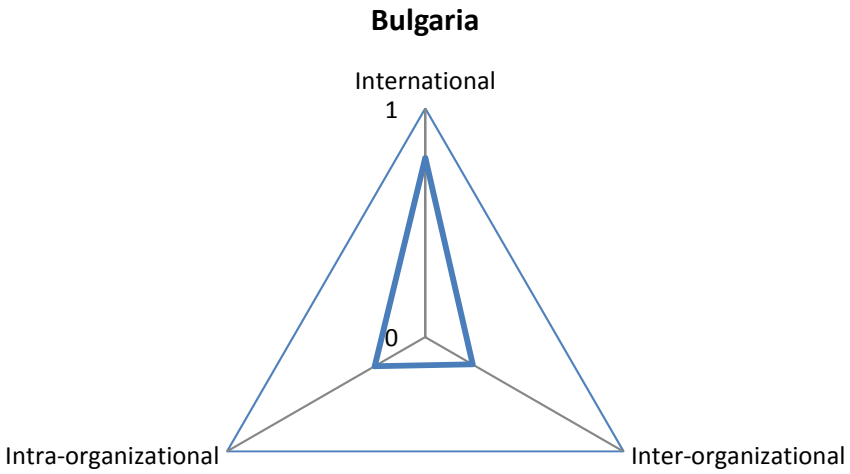
Brunei Darussalam
Connectedness Index 2013: 0.397
Rank 2013: 93 of 138
Rank 2011: 96 of 132
Rank 2012: 92 of 132
Connectedness Profile 2013

International Networks: 0.520
Inter-organizational Networks: 0.406
Intra-organizational networks: 0.265



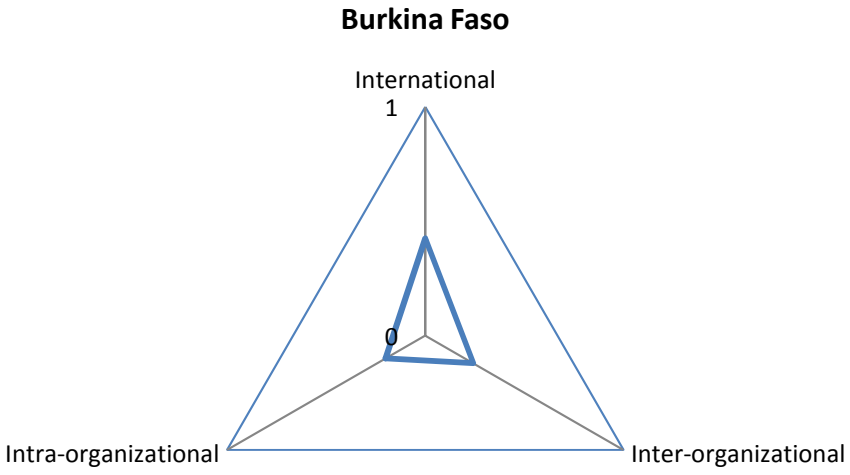
Bulgaria
Connectedness Index 2013: 0.426
Rank 2013: 80 of 138
Rank 2011: 59 of 132
Rank 2012: 74 of 132
Connectedness Profile 2013

International Networks: 0.783
Inter-organizational Networks: 0.240
Intra-organizational networks: 0.255



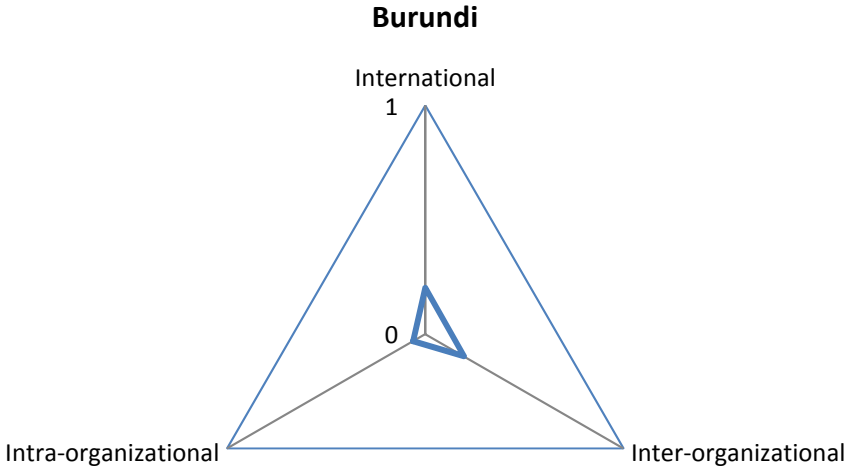
Burkina Faso
Connectedness Index 2013: 0.289
Rank 2013: 124 of 138
Rank 2011: 115 of 132
Rank 2012: 123 of 132
Connectedness Profile 2013

International Networks: 0.425
Inter-organizational Networks: 0.243
Intra-organizational networks: 0.200



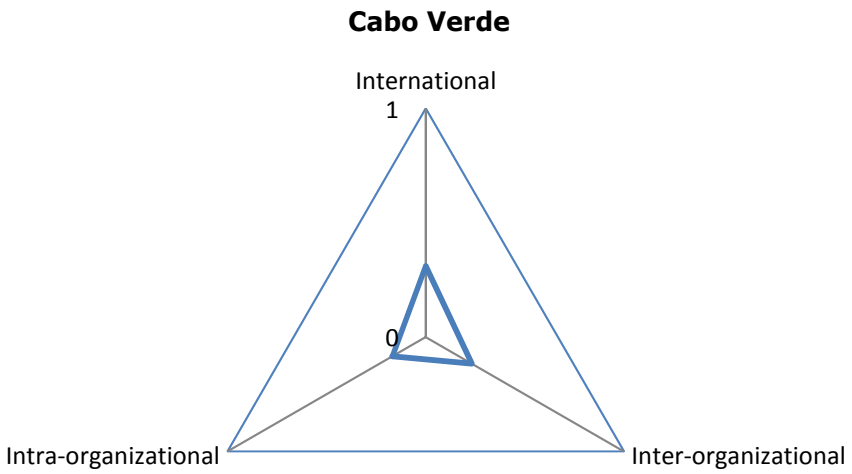
Burundi
Connectedness Index 2013: 0.153
Rank 2013: 137 of 138
Rank 2011: 132 of 132
Rank 2012: 129 of 132
Connectedness Profile 2013

International Networks: 0.203
Inter-organizational Networks: 0.195
Intra-organizational networks: 0.062



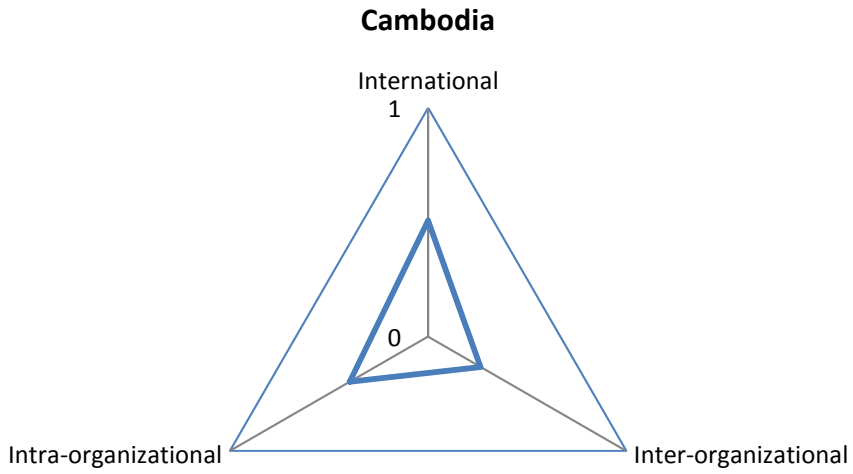
Cabo Verde
Connectedness Index 2013: 0.237
Rank 2013: 134 of 138
Rank 2011: of 132
Rank 2012: of 132
Connectedness Profile 2013

International Networks: 0.311
Inter-organizational Networks: 0.233
Intra-organizational networks: 0.168



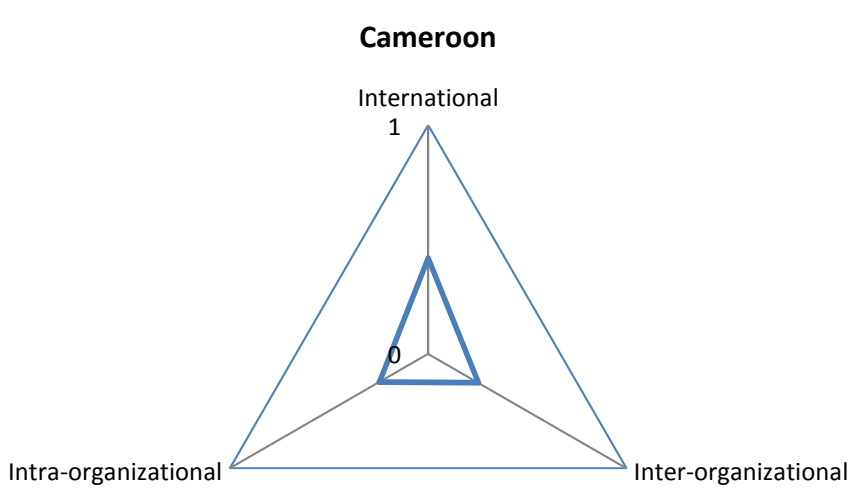
Cambodia
Connectedness Index 2013: 0.390
Rank 2013: 96 of 138
Rank 2011: 89 of 132
Rank 2012: 85 of 132
Connectedness Profile 2013

International Networks: 0.508
Inter-organizational Networks: 0.266
Intra-organizational networks: 0.397



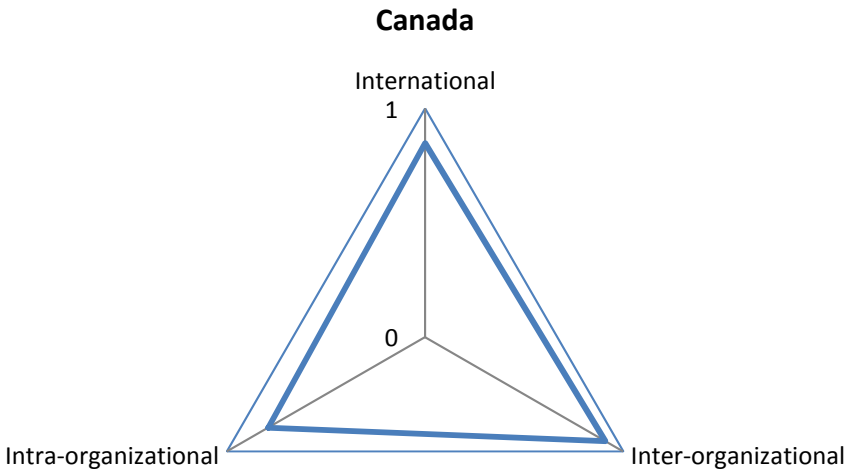
Cameroon
Connectedness Index 2013: 0.306
Rank 2013: 119 of 138
Rank 2011: 103 of 132
Rank 2012: 110 of 132
Connectedness Profile 2013

International Networks: 0.419
Inter-organizational Networks: 0.254
Intra-organizational networks: 0.246



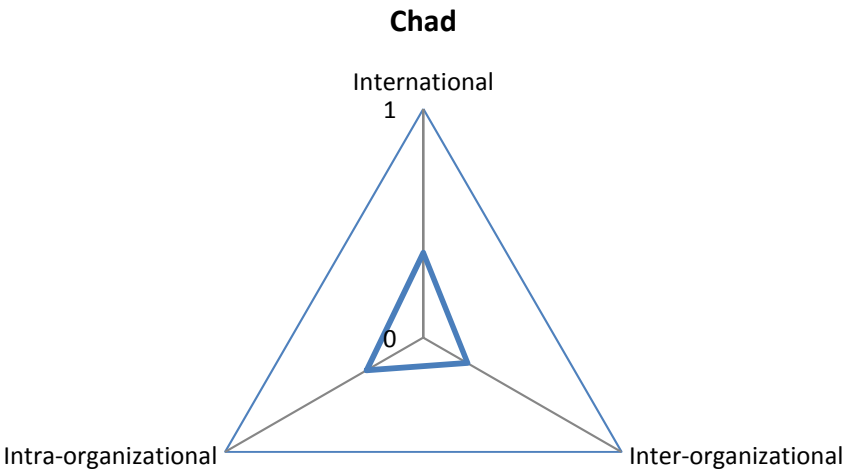
Canada
Connectedness Index 2013: 0.850
Rank 2013: 7 of 138
Rank 2011: 11 of 132
Rank 2012: 9 of 132
Connectedness Profile 2013

International Networks: 0.848
Inter-organizational Networks: 0.911
Intra-organizational networks: 0.793



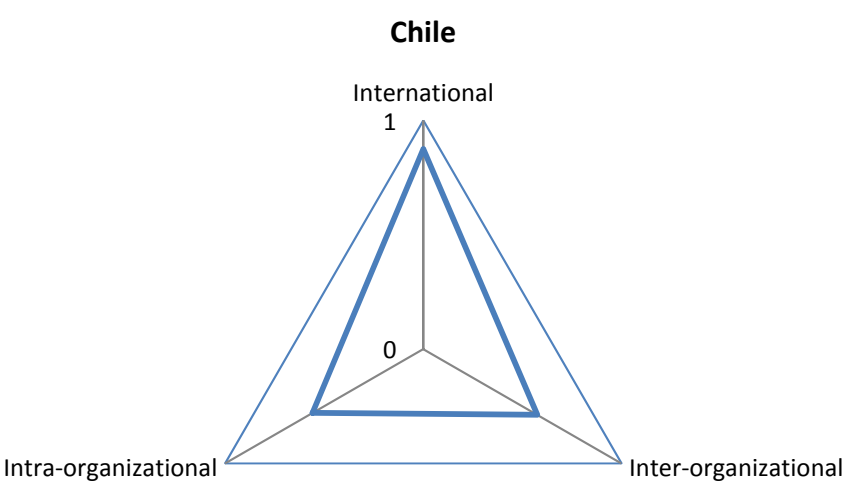
Chad
Connectedness Index 2013: 0.293
Rank 2013: 122 of 138
Rank 2011: 121 of 132
Rank 2012: 111 of 132
Connectedness Profile 2013

International Networks: 0.370
Inter-organizational Networks: 0.223
Intra-organizational networks: 0.287



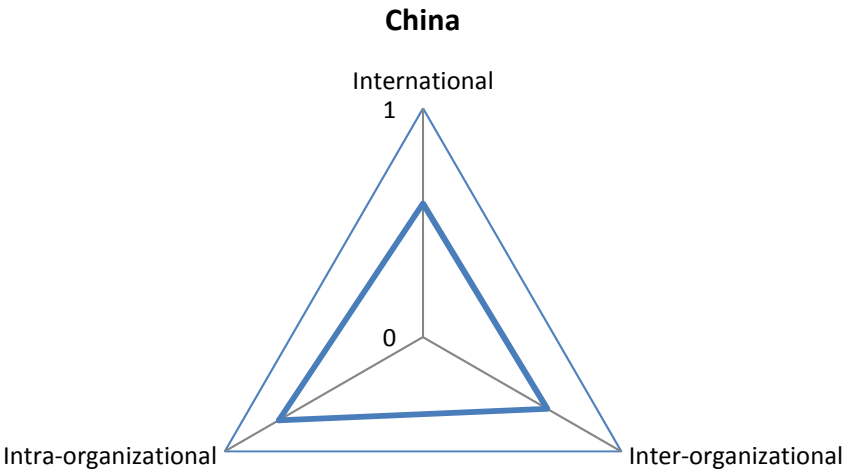
Chile
Connectedness Index 2013: 0.670
Rank 2013: 24 of 138
Rank 2011: 33 of 132
Rank 2012: 25 of 132
Connectedness Profile 2013

International Networks: 0.875
Inter-organizational Networks: 0.576
Intra-organizational networks: 0.559



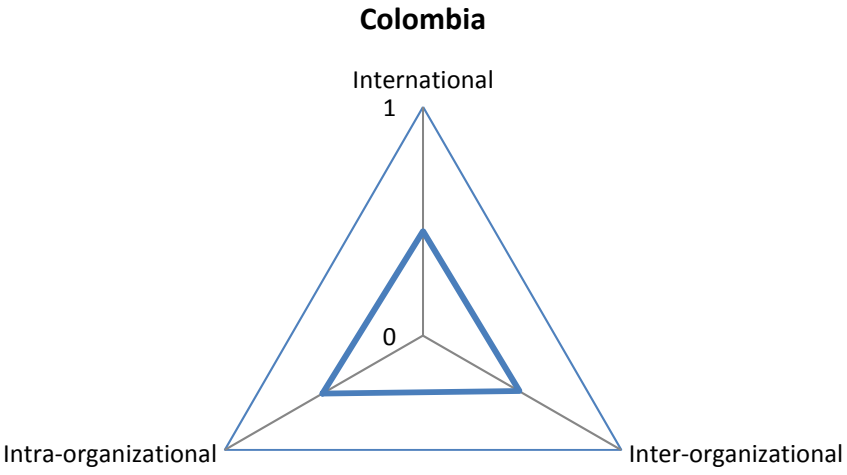
China
Connectedness Index 2013: 0.646
Rank 2013: 29 of 138
Rank 2011: 31 of 132
Rank 2012: 42 of 132
Connectedness Profile 2013

International Networks: 0.584
Inter-organizational Networks: 0.627
Intra-organizational networks: 0.728



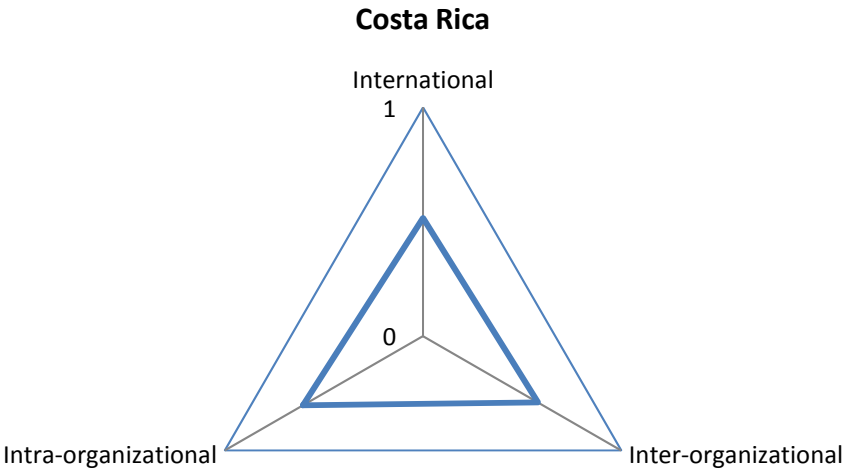
Colombia
Connectedness Index 2013: 0.483
Rank 2013: 57 of 138
Rank 2011: 60 of 132
Rank 2012: 50 of 132
Connectedness Profile 2013

International Networks: 0.455
Inter-organizational Networks: 0.486
Intra-organizational networks: 0.507



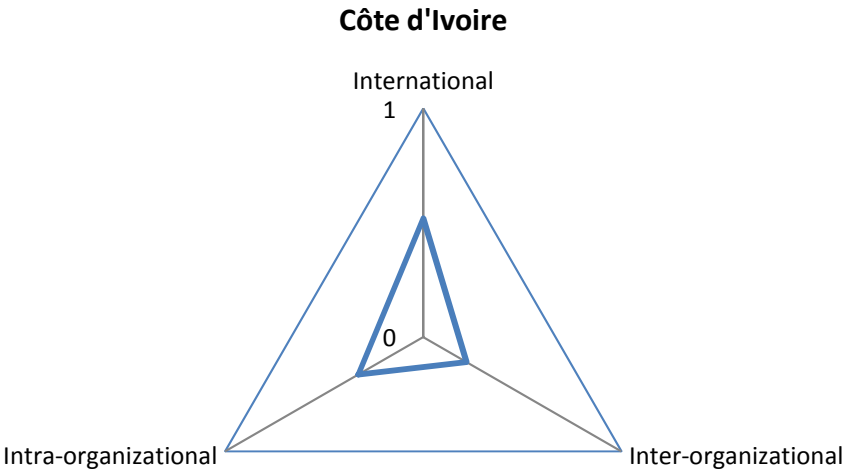
Costa Rica
Connectedness Index 2013: 0.567
Rank 2013: 41 of 138
Rank 2011: 44 of 132
Rank 2012: 41 of 132
Connectedness Profile 2013

International Networks: 0.517
Inter-organizational Networks: 0.580
Intra-organizational networks: 0.606



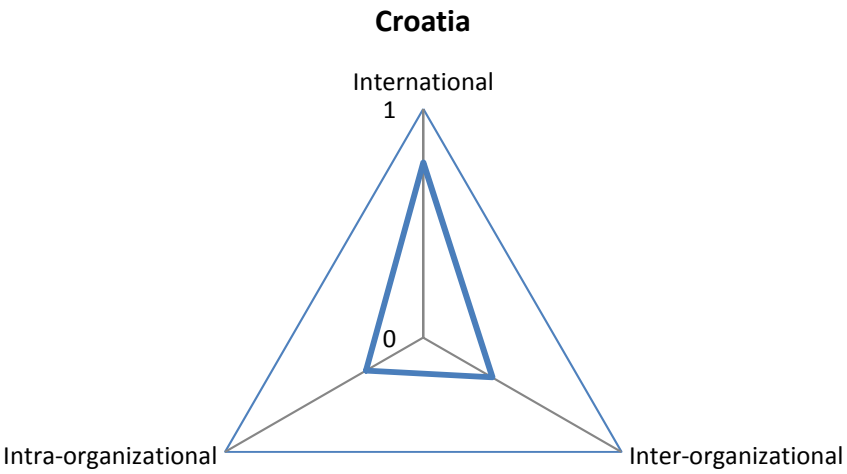
Côte d'Ivoire
Connectedness Index 2013: 0.355
Rank 2013: 105 of 138
Rank 2011: 94 of 132
Rank 2012: 106 of 132
Connectedness Profile 2013

International Networks: 0.519
Inter-organizational Networks: 0.218
Intra-organizational networks: 0.328



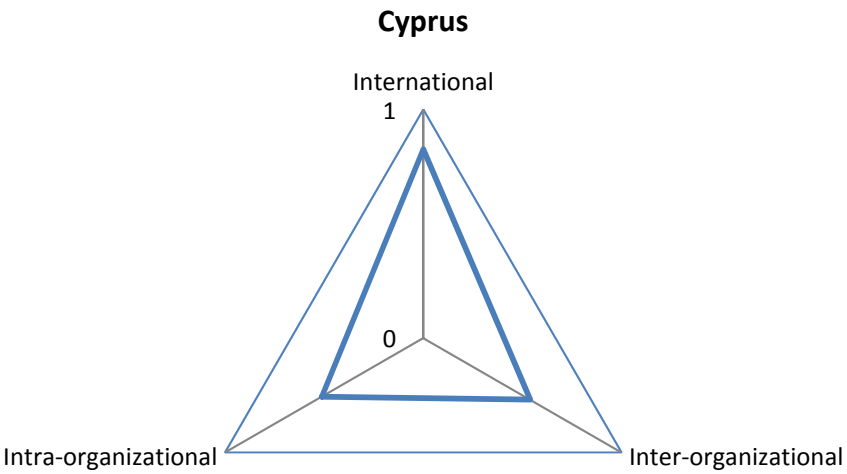
Croatia
Connectedness Index 2013: 0.468
Rank 2013: 62 of 138
Rank 2011: 49 of 132
Rank 2012: 58 of 132
Connectedness Profile 2013

International Networks: 0.766
Inter-organizational Networks: 0.349
Intra-organizational networks: 0.289



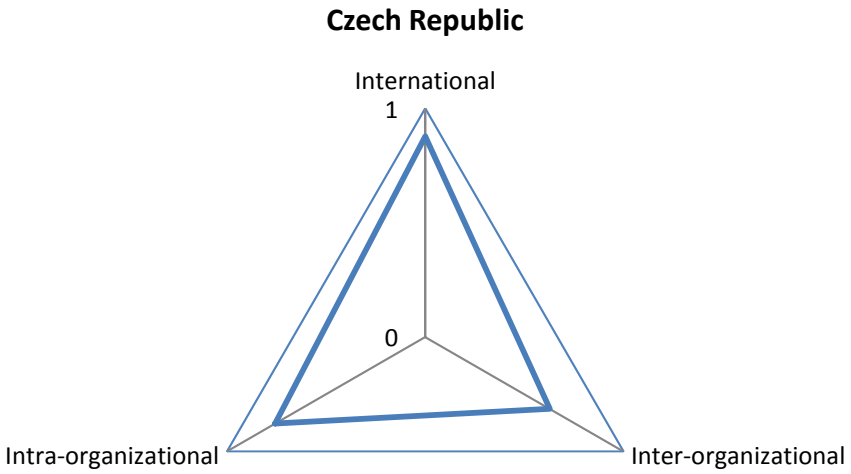
Cyprus
Connectedness Index 2013: 0.626
Rank 2013: 34 of 138
Rank 2011: 35 of 132
Rank 2012: 29 of 132
Connectedness Profile 2013

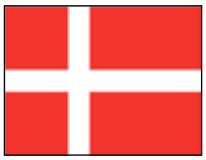
International Networks: 0.826
Inter-organizational Networks: 0.540
Intra-organizational networks: 0.513



Czech Republic
Connectedness Index 2013: 0.755
Rank 2013: 17 of 138
Rank 2011: 20 of 132
Rank 2012: 14 of 132
Connectedness Profile 2013

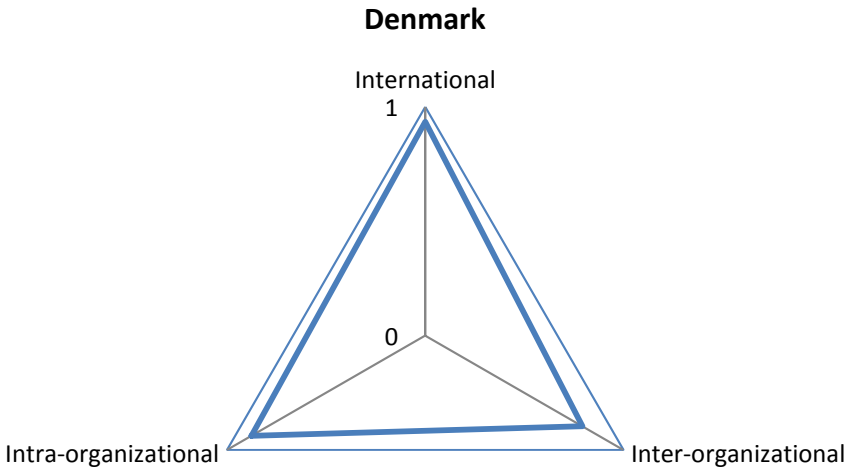
International Networks: 0.877
Inter-organizational Networks: 0.628
Intra-organizational networks: 0.758





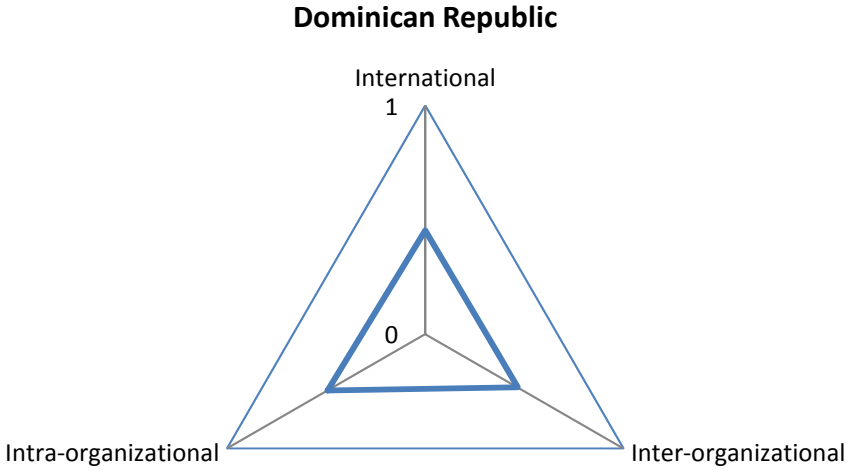
Denmark
Connectedness Index 2013: 0.869
Rank 2013: 4 of 138
Rank 2011: 3 of 132
Rank 2012: 3 of 132
Connectedness Profile 2013

International Networks: 0.936
Inter-organizational Networks: 0.794
Intra-organizational networks: 0.877



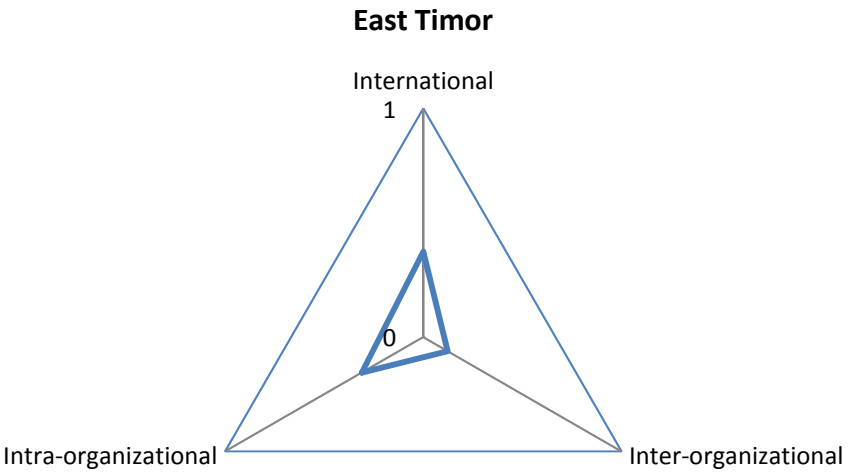
Dominican Republic
Connectedness Index 2013: 0.471
Rank 2013: 60 of 138
Rank 2011: 66 of 132
Rank 2012: 51 of 132
Connectedness Profile 2013

International Networks: 0.454
Inter-organizational Networks: 0.467
Intra-organizational networks: 0.492



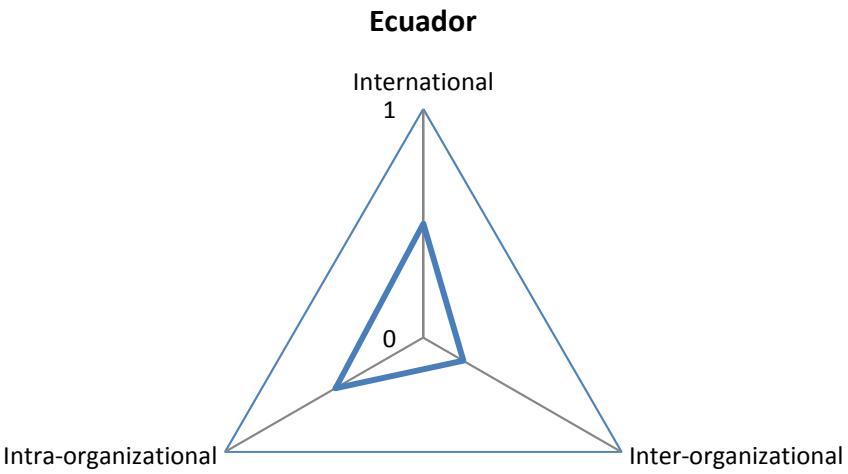
East Timor
Connectedness Index 2013: 0.269
Rank 2013: 126 of 138
Rank 2011: 130 of 132
Rank 2012: 126 of 132
Connectedness Profile 2013

International Networks: 0.373
Inter-organizational Networks: 0.123
Intra-organizational networks: 0.311



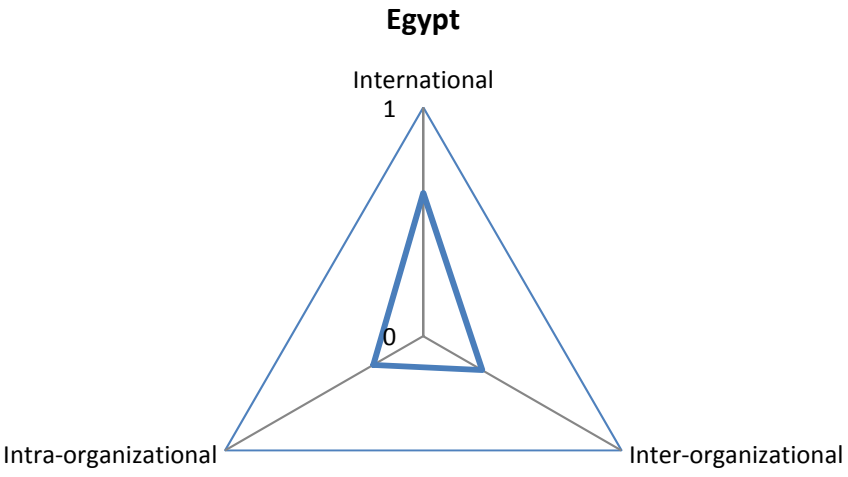
Ecuador
Connectedness Index 2013: 0.380
Rank 2013: 100 of 138
Rank 2011: 87 of 132
Rank 2012: 95 of 132
Connectedness Profile 2013

International Networks: 0.498
Inter-organizational Networks: 0.201
Intra-organizational networks: 0.442



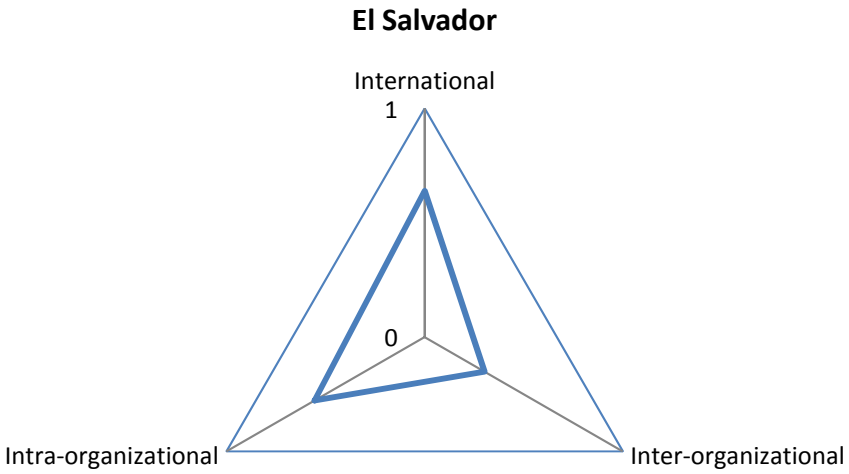
Egypt
Connectedness Index 2013: 0.392
Rank 2013: 94 of 138
Rank 2011: 90 of 132
Rank 2012: 91 of 132
Connectedness Profile 2013

International Networks: 0.625
Inter-organizational Networks: 0.298
Intra-organizational networks: 0.252



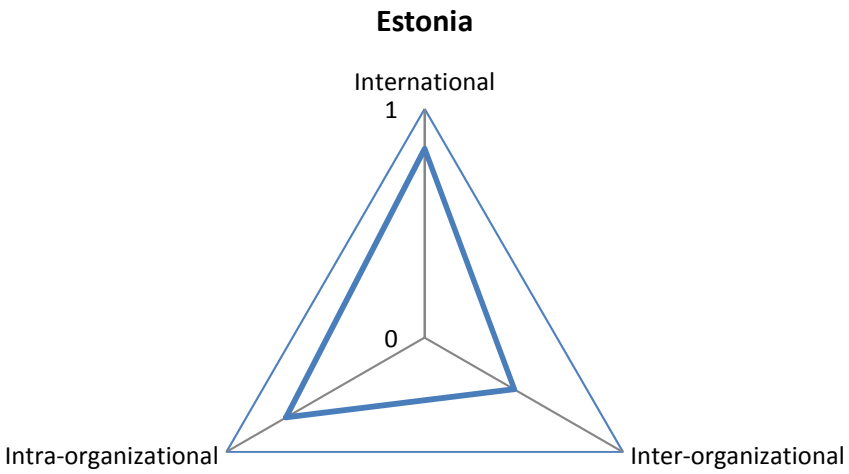
El Salvador
Connectedness Index 2013: 0.499
Rank 2013: 53 of 138
Rank 2011: 76 of 132
Rank 2012: 61 of 132
Connectedness Profile 2013

International Networks: 0.639
Inter-organizational Networks: 0.303
Intra-organizational networks: 0.556



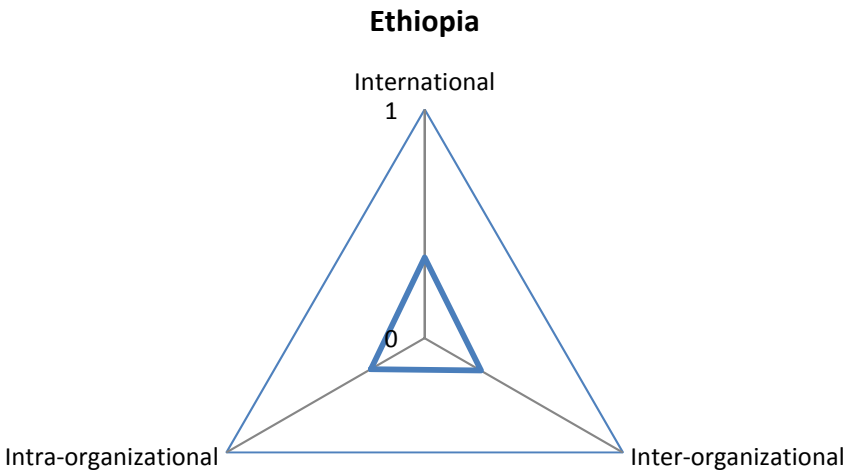
Estonia
Connectedness Index 2013: 0.659
Rank 2013: 27 of 138
Rank 2011: 28 of 132
Rank 2012: 24 of 132
Connectedness Profile 2013

International Networks: 0.826
Inter-organizational Networks: 0.453
Intra-organizational networks: 0.699



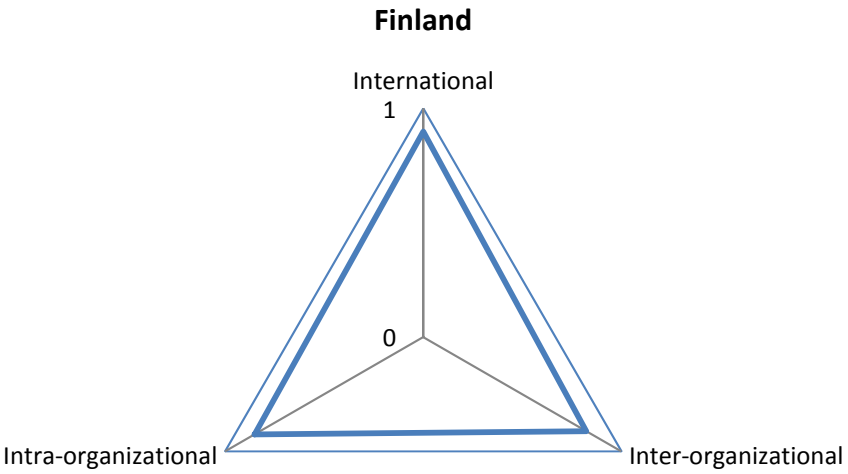
Ethiopia
Connectedness Index 2013: 0.303
Rank 2013: 120 of 138
Rank 2011: 101 of 132
Rank 2012: 118 of 132
Connectedness Profile 2013

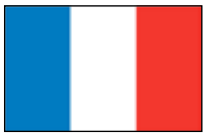
International Networks: 0.353
Inter-organizational Networks: 0.285
Intra-organizational networks: 0.272



Finland
Connectedness Index 2013: 0.858
Rank 2013: 6 of 138
Rank 2011: 7 of 132
Rank 2012: 6 of 132
Connectedness Profile 2013

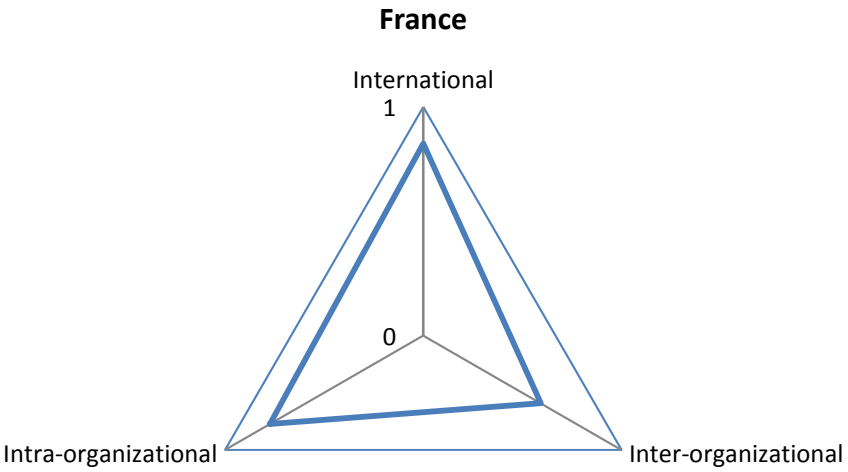
International Networks: 0.898
Inter-organizational Networks: 0.823
Intra-organizational networks: 0.852





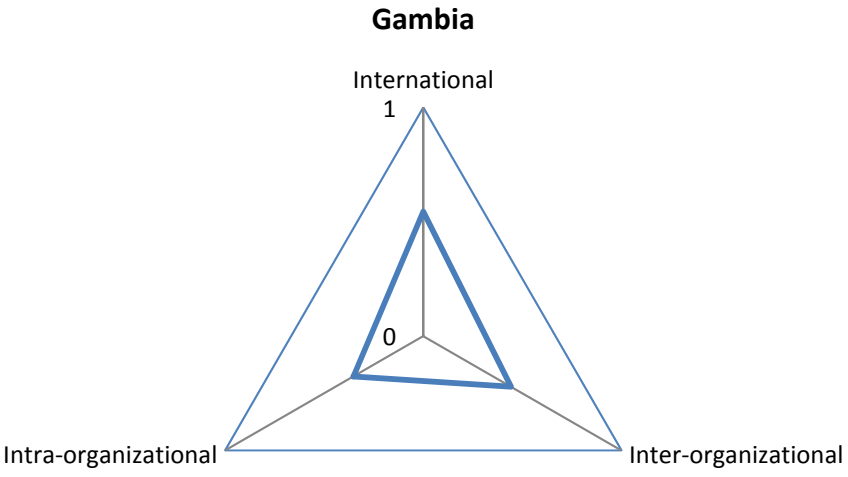
France
Connectedness Index 2013: 0.736
Rank 2013: 19 of 138
Rank 2011: 15 of 132
Rank 2012: 21 of 132
Connectedness Profile 2013

International Networks: 0.840
Inter-organizational Networks: 0.593
Intra-organizational networks: 0.774



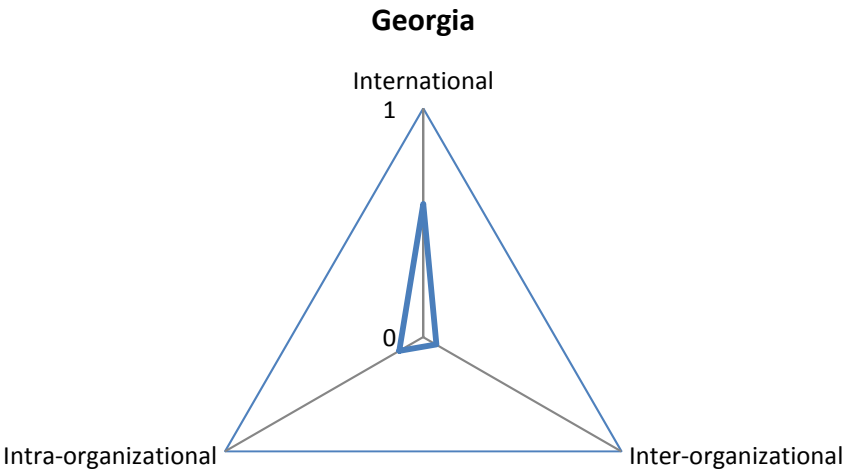
Gambia
Connectedness Index 2013: 0.447
Rank 2013: 69 of 138
Rank 2011: 92 of 132
Rank 2012: 75 of 132
Connectedness Profile 2013

International Networks: 0.544
Inter-organizational Networks: 0.443
Intra-organizational networks: 0.353



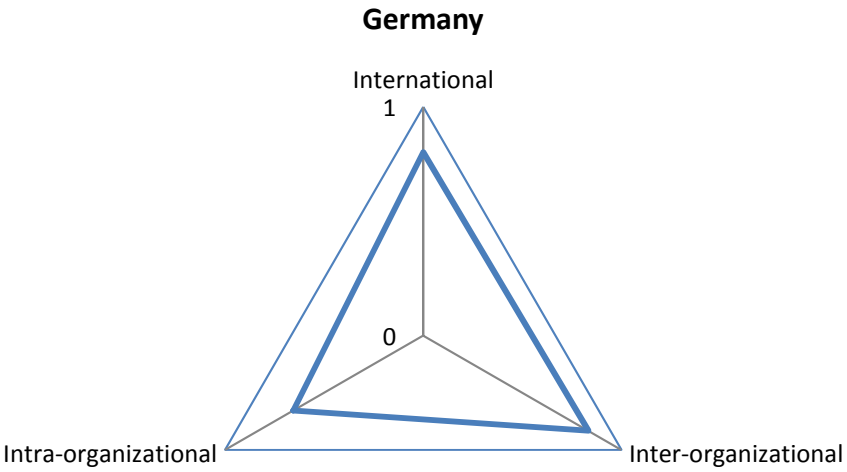
Georgia
Connectedness Index 2013: 0.256
Rank 2013: 129 of 138
Rank 2011: 127 of 132
Rank 2012: 127 of 132
Connectedness Profile 2013

International Networks: 0.583
Inter-organizational Networks: 0.066
Intra-organizational networks: 0.121



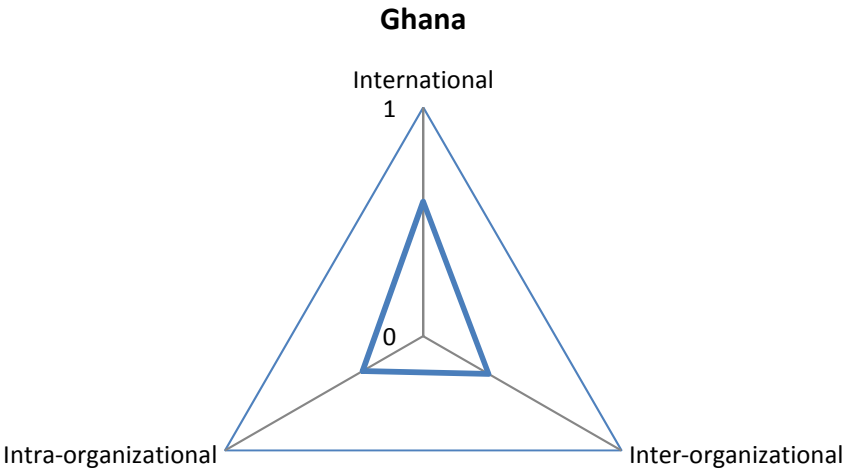
Germany
Connectedness Index 2013: 0.764
Rank 2013: 16 of 138
Rank 2011: 13 of 132
Rank 2012: 18 of 132
Connectedness Profile 2013

International Networks: 0.802
Inter-organizational Networks: 0.834
Intra-organizational networks: 0.656



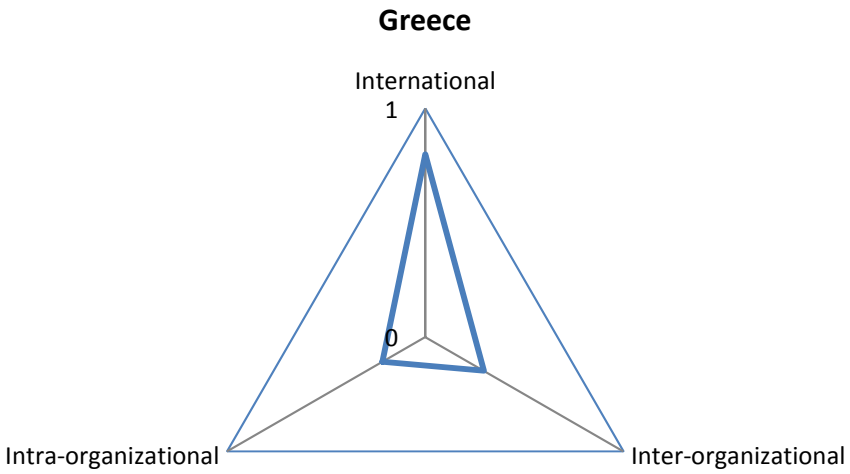
Ghana
Connectedness Index 2013: 0.408
Rank 2013: 90 of 138
Rank 2011: 95 of 132
Rank 2012: 96 of 132
Connectedness Profile 2013

International Networks: 0.588
Inter-organizational Networks: 0.330
Intra-organizational networks: 0.306



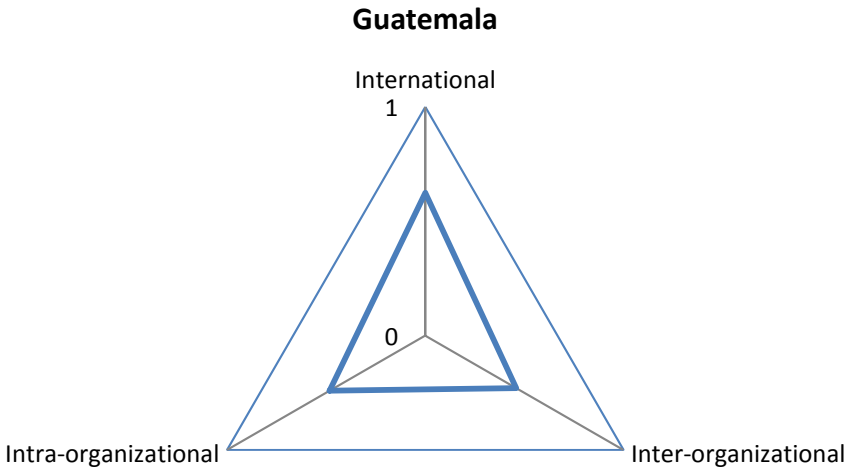
Greece
Connectedness Index 2013: 0.438
Rank 2013: 74 of 138
Rank 2011: 71 of 132
Rank 2012: 73 of 132
Connectedness Profile 2013

International Networks: 0.800
Inter-organizational Networks: 0.296
Intra-organizational networks: 0.217



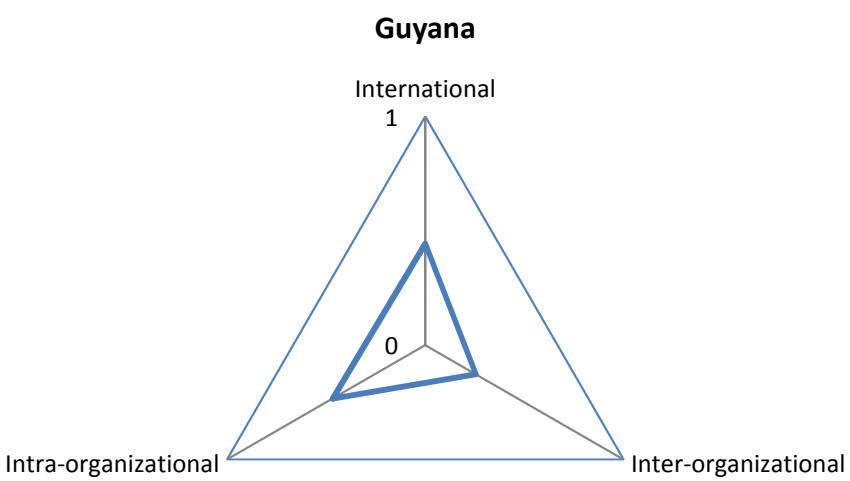
Guatemala
Connectedness Index 2013: 0.522
Rank 2013: 48 of 138
Rank 2011: 75 of 132
Rank 2012: 67 of 132
Connectedness Profile 2013

International Networks: 0.624
Inter-organizational Networks: 0.460
Intra-organizational networks: 0.483



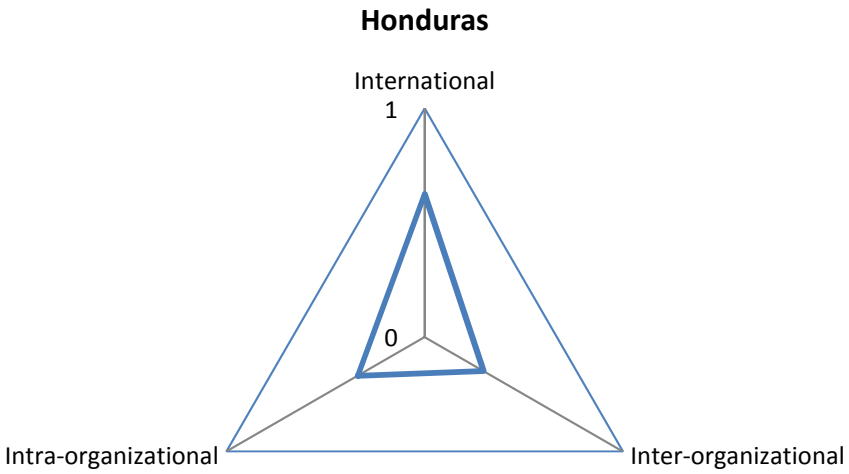
Guyana
Connectedness Index 2013: 0.389
Rank 2013: 97 of 138
Rank 2011: 107 of 132
Rank 2012: 84 of 132
Connectedness Profile 2013

International Networks: 0.444
Inter-organizational Networks: 0.255
Intra-organizational networks: 0.467



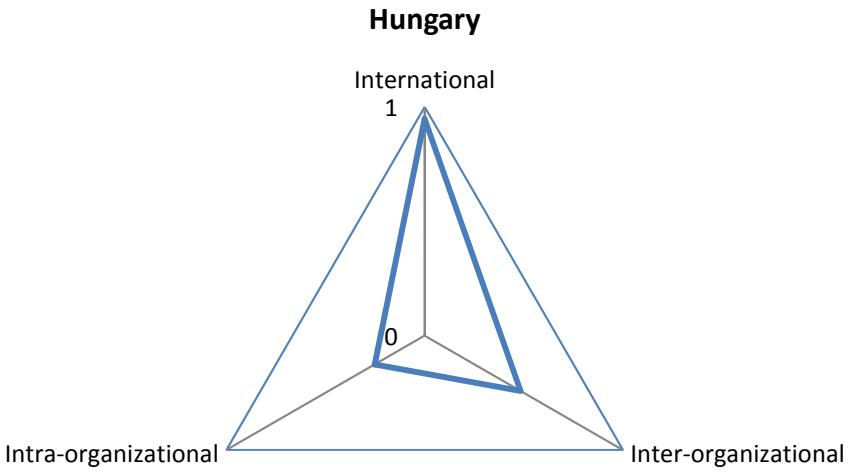
Honduras
Connectedness Index 2013: 0.420
Rank 2013: 82 of 138
Rank 2011: 86 of 132
Rank 2012: 87 of 132
Connectedness Profile 2013

International Networks: 0.625
Inter-organizational Networks: 0.298
Intra-organizational networks: 0.339



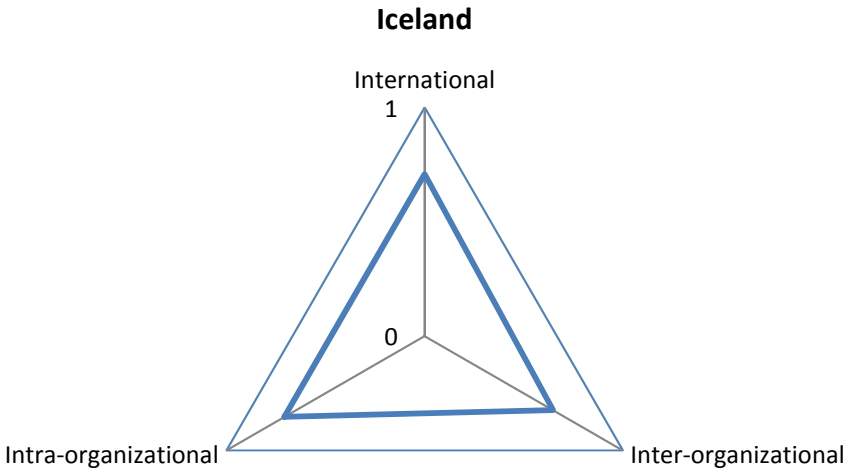
Hungary
Connectedness Index 2013: 0.562
Rank 2013: 43 of 138
Rank 2011: 34 of 132
Rank 2012: 39 of 132
Connectedness Profile 2013

International Networks: 0.950
Inter-organizational Networks: 0.485
Intra-organizational networks: 0.252



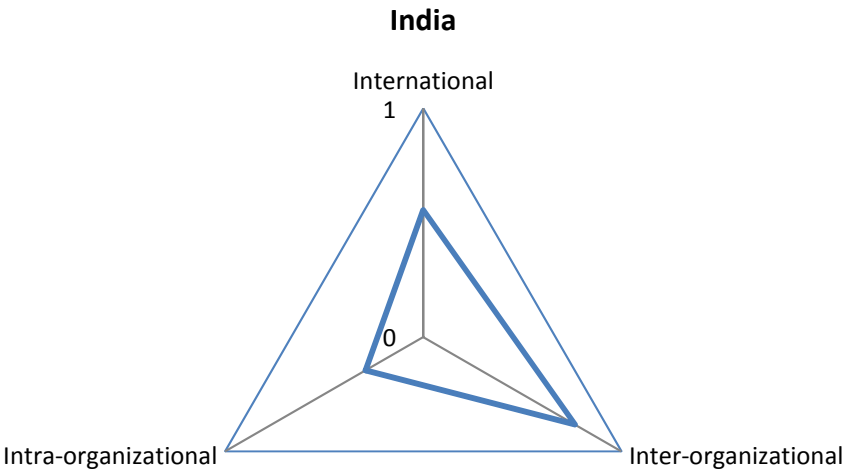
Iceland
Connectedness Index 2013: 0.688
Rank 2013: 22 of 138
Rank 2011: 17 of 132
Rank 2012: 17 of 132
Connectedness Profile 2013

International Networks: 0.708
Inter-organizational Networks: 0.648
Intra-organizational networks: 0.708



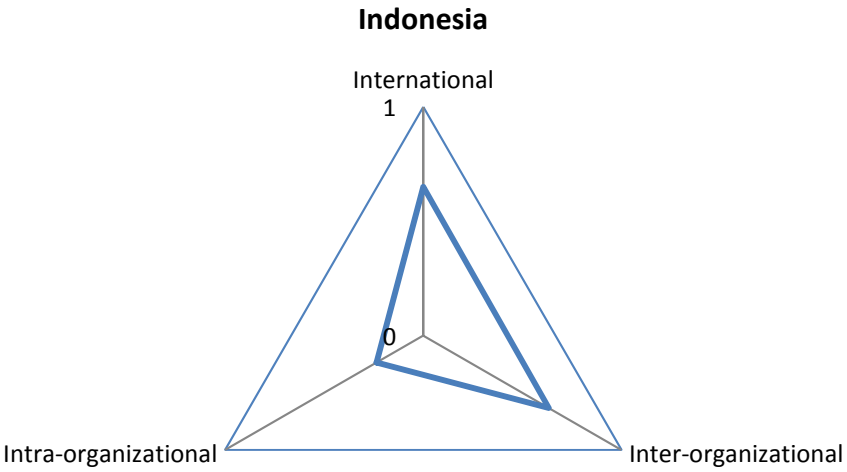
India
Connectedness Index 2013: 0.538
Rank 2013: 47 of 138
Rank 2011: 40 of 132
Rank 2012: 37 of 132
Connectedness Profile 2013

International Networks: 0.556
Inter-organizational Networks: 0.766
Intra-organizational networks: 0.291



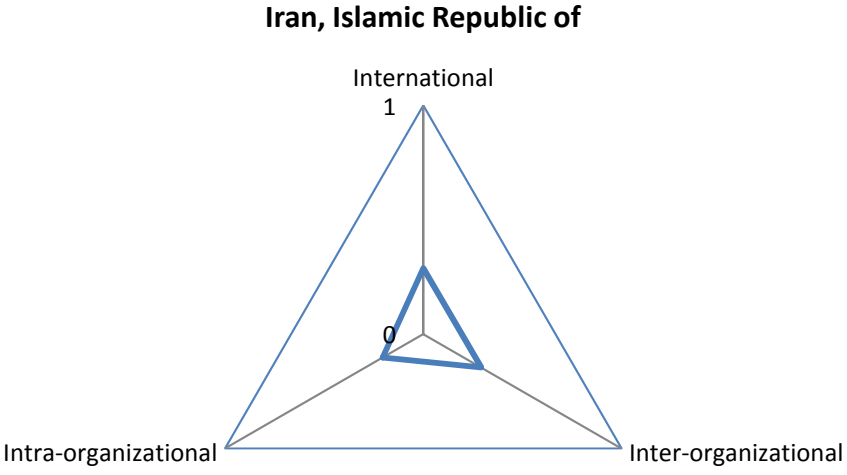
Indonesia
Connectedness Index 2013: 0.507
Rank 2013: 51 of 138
Rank 2011: 47 of 132
Rank 2012: 55 of 132
Connectedness Profile 2013

International Networks: 0.651
Inter-organizational Networks: 0.634
Intra-organizational networks: 0.236



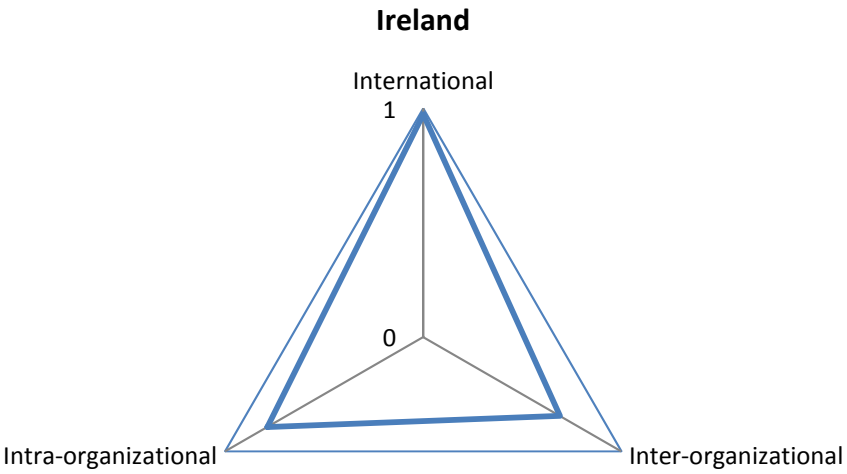
Iran, Islamic Republic of
Connectedness Index 2013: 0.262
Rank 2013: 127 of 138
Rank 2011: of 132
Rank 2012: of 132
Connectedness Profile 2013

International Networks: 0.288
Inter-organizational Networks: 0.293
Intra-organizational networks: 0.205



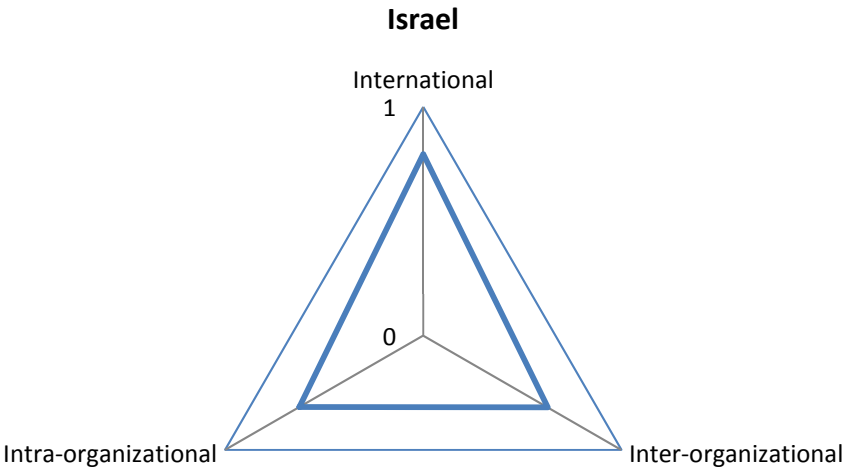
Ireland
Connectedness Index 2013: 0.817
Rank 2013: 11 of 138
Rank 2011: 12 of 132
Rank 2012: 8 of 132
Connectedness Profile 2013

International Networks: 0.975
Inter-organizational Networks: 0.690
Intra-organizational networks: 0.787



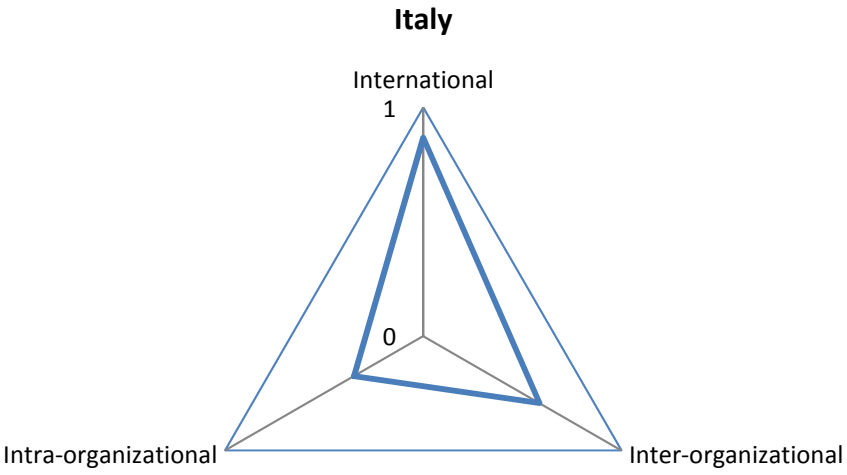
Israel
Connectedness Index 2013: 0.683
Rank 2013: 23 of 138
Rank 2011: 23 of 132
Rank 2012: 30 of 132
Connectedness Profile 2013

International Networks: 0.793
Inter-organizational Networks: 0.629
Intra-organizational networks: 0.626



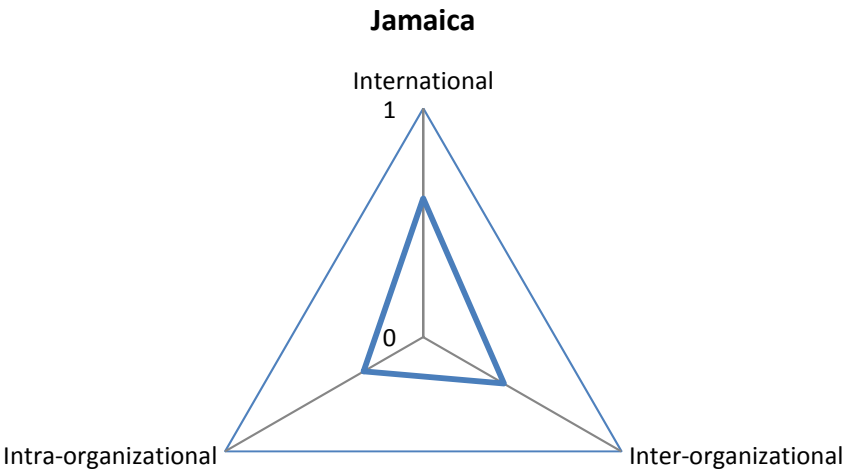
Italy
Connectedness Index 2013: 0.601
Rank 2013: 39 of 138
Rank 2011: 36 of 132
Rank 2012: 40 of 132
Connectedness Profile 2013

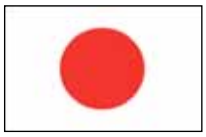
International Networks: 0.867
Inter-organizational Networks: 0.586
Intra-organizational networks: 0.350



Jamaica
Connectedness Index 2013: 0.438
Rank 2013: 73 of 138
Rank 2011: 43 of 132
Rank 2012: 60 of 132
Connectedness Profile 2013

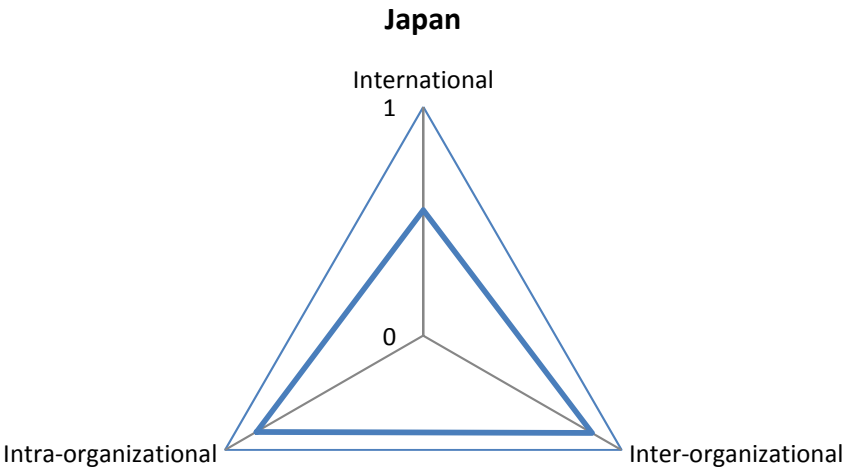
International Networks: 0.606
Inter-organizational Networks: 0.408
Intra-organizational networks: 0.301





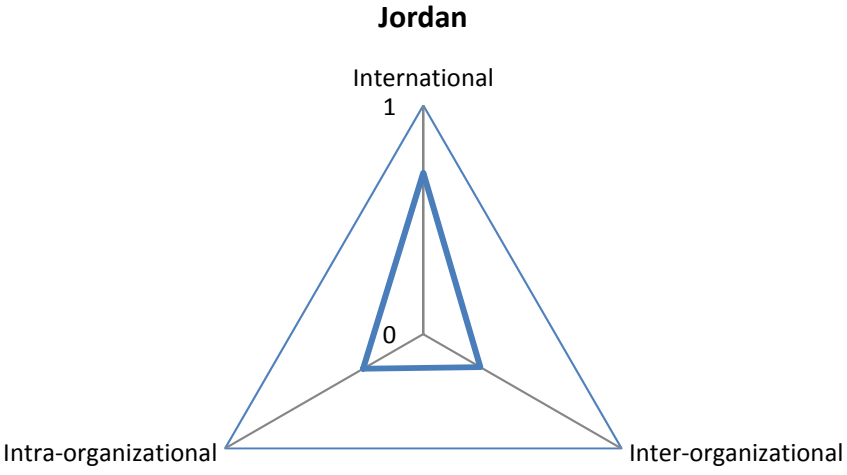
Japan
Connectedness Index 2013: 0.748
Rank 2013: 18 of 138
Rank 2011: 18 of 132
Rank 2012: 22 of 132
Connectedness Profile 2013

International Networks: 0.549
Inter-organizational Networks: 0.852
Intra-organizational networks: 0.843



Jordan
Connectedness Index 2013: 0.432
Rank 2013: 78 of 138
Rank 2011: 48 of 132
Rank 2012: 56 of 132
Connectedness Profile 2013

International Networks: 0.706
Inter-organizational Networks: 0.288
Intra-organizational networks: 0.303

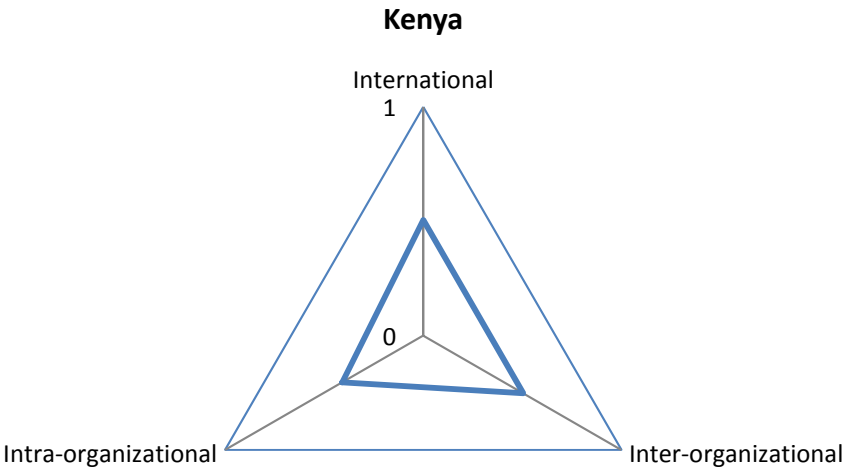


Kazakhstan
Connectedness Index 2013: 0.414
Rank 2013: 87 of 138
Rank 2011: 72 of 132
Rank 2012: 62 of 132
Connectedness Profile 2013

International Networks: 0.614
Inter-organizational Networks: 0.233
Intra-organizational networks: 0.395

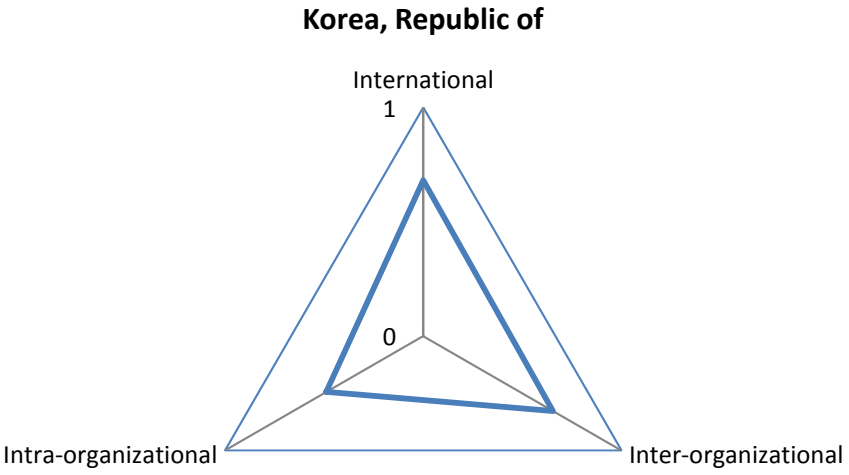
Kenya
Connectedness Index 2013: 0.473
Rank 2013: 58 of 138
Rank 2011: 55 of 132
Rank 2012: 57 of 132
Connectedness Profile 2013

International Networks: 0.505
Inter-organizational Networks: 0.504
Intra-organizational networks: 0.409



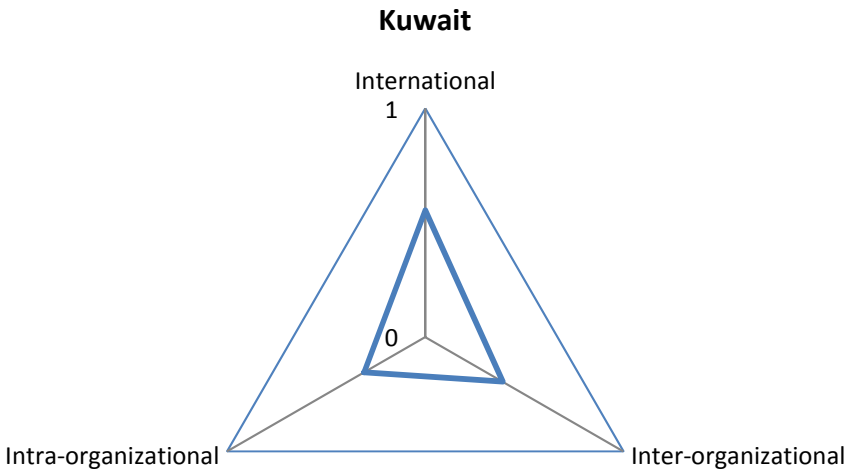
Korea, Republic of
Connectedness Index 2013: 0.609
Rank 2013: 38 of 138
Rank 2011: 25 of 132
Rank 2012: 31 of 132
Connectedness Profile 2013

International Networks: 0.681
Inter-organizational Networks: 0.655
Intra-organizational networks: 0.489



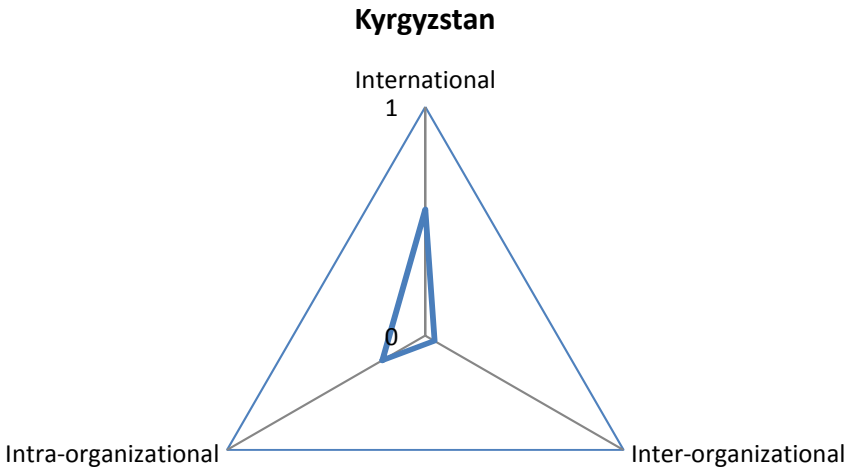
Kuwait
Connectedness Index 2013: 0.418
Rank 2013: 84 of 138
Rank 2011: 65 of 132
Rank 2012: 86 of 132
Connectedness Profile 2013

International Networks: 0.554
Inter-organizational Networks: 0.391
Intra-organizational networks: 0.309



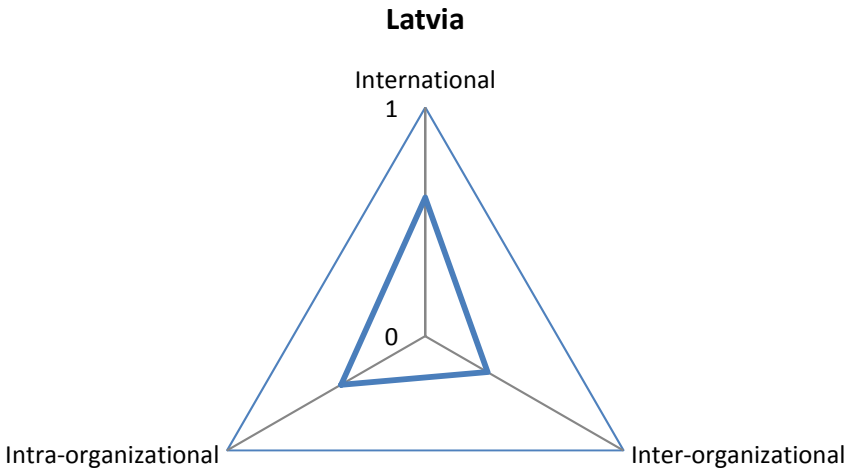
Kyrgyzstan
Connectedness Index 2013: 0.272
Rank 2013: 125 of 138
Rank 2011: 111 of 132
Rank 2012: 115 of 132
Connectedness Profile 2013

International Networks: 0.552
Inter-organizational Networks: 0.047
Intra-organizational networks: 0.216



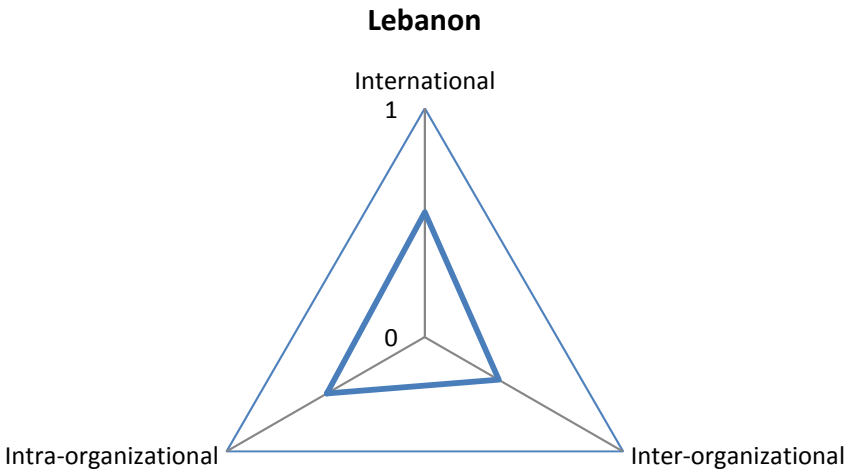
Latvia
Connectedness Index 2013: 0.449
Rank 2013: 68 of 138
Rank 2011: 68 of 132
Rank 2012: 93 of 132
Connectedness Profile 2013

International Networks: 0.606
Inter-organizational Networks: 0.315
Intra-organizational networks: 0.426



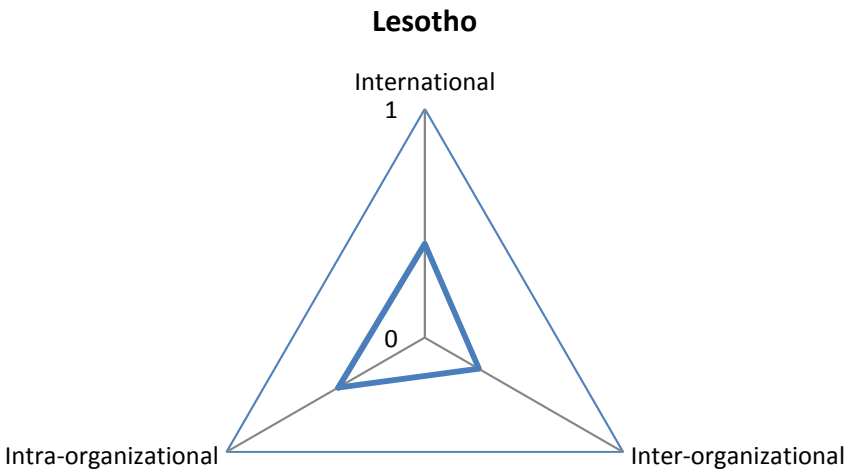
Lebanon
Connectedness Index 2013: 0.471
Rank 2013: 59 of 138
Rank 2011: of 132
Rank 2012: of 132
Connectedness Profile 2013

International Networks: 0.546
Inter-organizational Networks: 0.373
Intra-organizational networks: 0.495



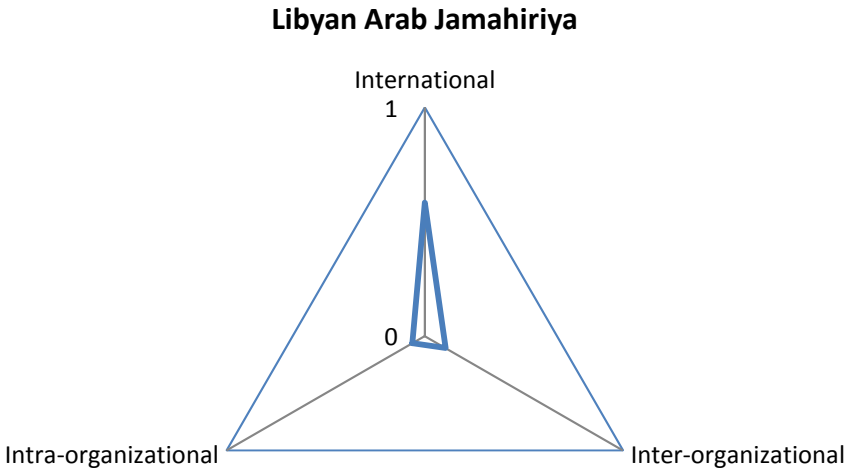
Lesotho
Connectedness Index 2013: 0.373
Rank 2013: 102 of 138
Rank 2011: 110 of 132
Rank 2012: 103 of 132
Connectedness Profile 2013

International Networks: 0.410
Inter-organizational Networks: 0.273
Intra-organizational networks: 0.436



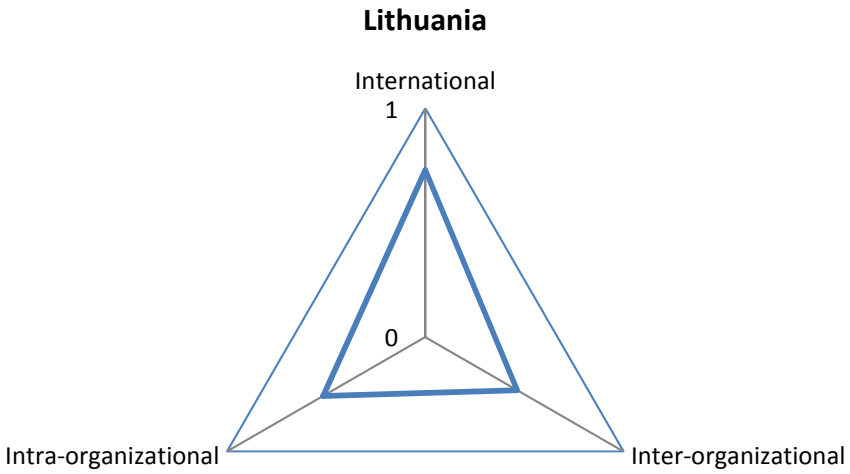
Libyan Arab Jamahiriya
Connectedness Index 2013: 0.251
Rank 2013: 130 of 138
Rank 2011: 114 of 132
Rank 2012: 108 of 132
Connectedness Profile 2013

International Networks: 0.584
Inter-organizational Networks: 0.106
Intra-organizational networks: 0.064



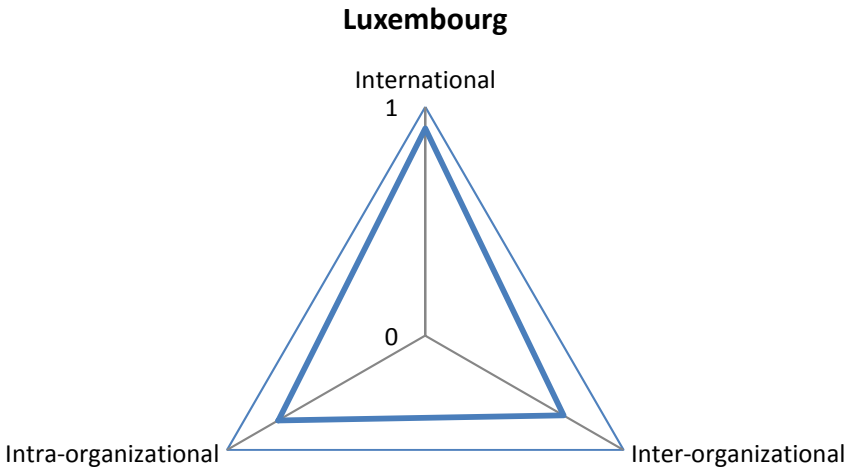
Lithuania
Connectedness Index 2013: 0.570
Rank 2013: 40 of 138
Rank 2011: 41 of 132
Rank 2012: 59 of 132
Connectedness Profile 2013

International Networks: 0.730
Inter-organizational Networks: 0.464
Intra-organizational networks: 0.516



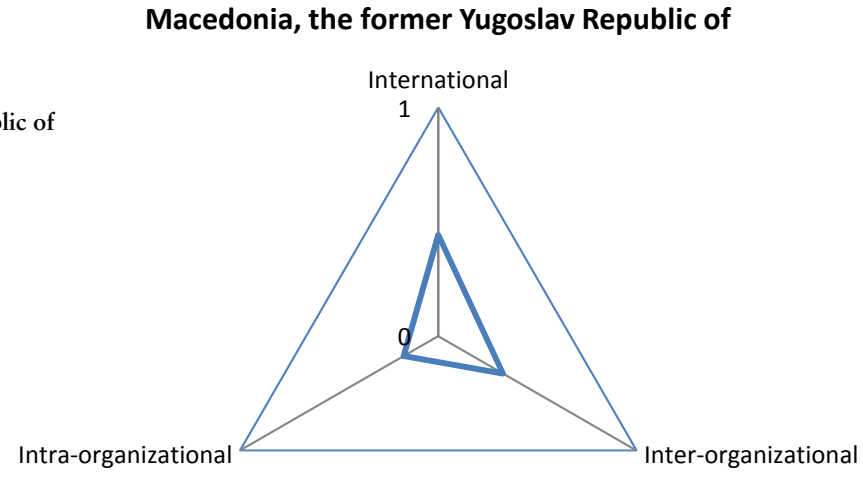
Luxembourg
Connectedness Index 2013: 0.782
Rank 2013: 14 of 138
Rank 2011: 21 of 132
Rank 2012: 16 of 132
Connectedness Profile 2013

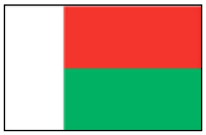
International Networks: 0.906
Inter-organizational Networks: 0.698
Intra-organizational networks: 0.742



Macedonia, the former Yugoslav Republic of
Connectedness Index 2013: 0.315
Rank 2013: 115 of 138
Rank 2011: 97 of 132
Rank 2012: 114 of 132
Connectedness Profile 2013

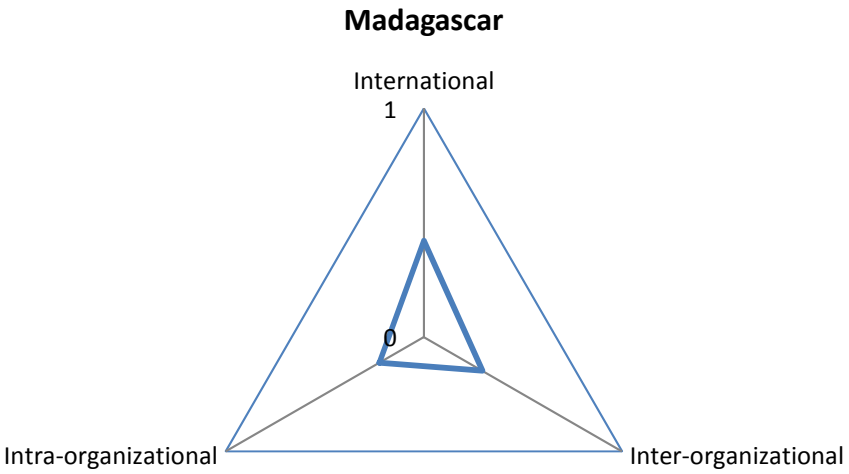
International Networks: 0.442
Inter-organizational Networks: 0.327
Intra-organizational networks: 0.174





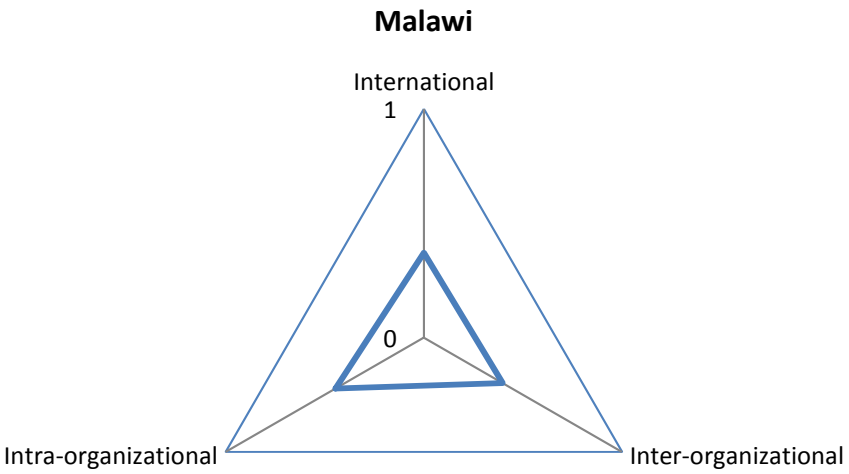
Madagascar
Connectedness Index 2013: 0.314
Rank 2013: 116 of 138
Rank 2011: 106 of 132
Rank 2012: 100 of 132
Connectedness Profile 2013

International Networks: 0.421
Inter-organizational Networks: 0.296
Intra-organizational networks: 0.225



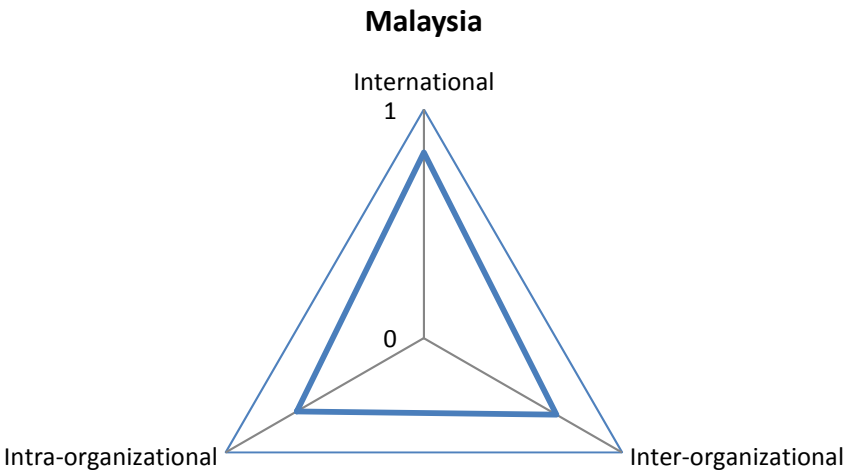
Malawi
Connectedness Index 2013: 0.405
Rank 2013: 92 of 138
Rank 2011: 99 of 132
Rank 2012: 97 of 132
Connectedness Profile 2013

International Networks: 0.371
Inter-organizational Networks: 0.398
Intra-organizational networks: 0.446



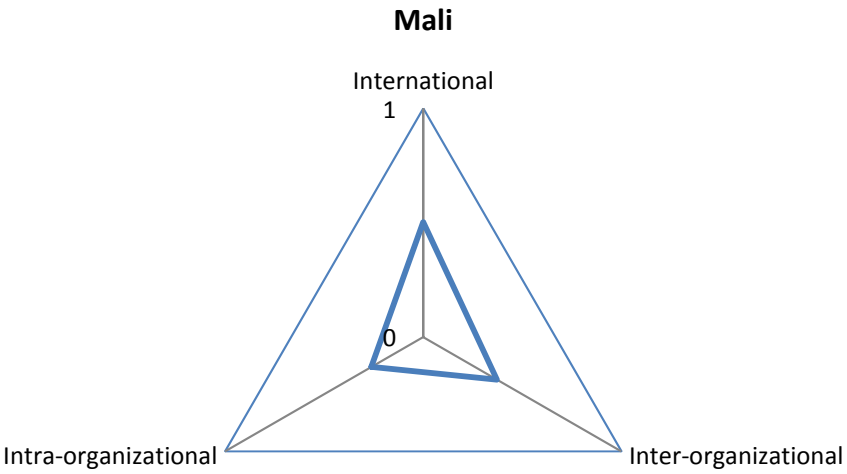
Malaysia
Connectedness Index 2013: 0.708
Rank 2013: 21 of 138
Rank 2011: 19 of 132
Rank 2012: 19 of 132
Connectedness Profile 2013

International Networks: 0.811
Inter-organizational Networks: 0.670
Intra-organizational networks: 0.643



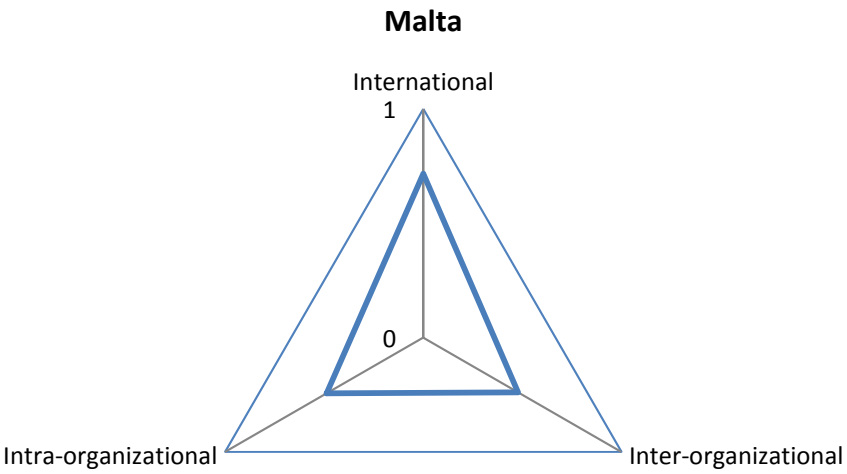
Mali
Connectedness Index 2013: 0.379
Rank 2013: 101 of 138
Rank 2011: 105 of 132
Rank 2012: 102 of 132
Connectedness Profile 2013

International Networks: 0.503
Inter-organizational Networks: 0.372
Intra-organizational networks: 0.261



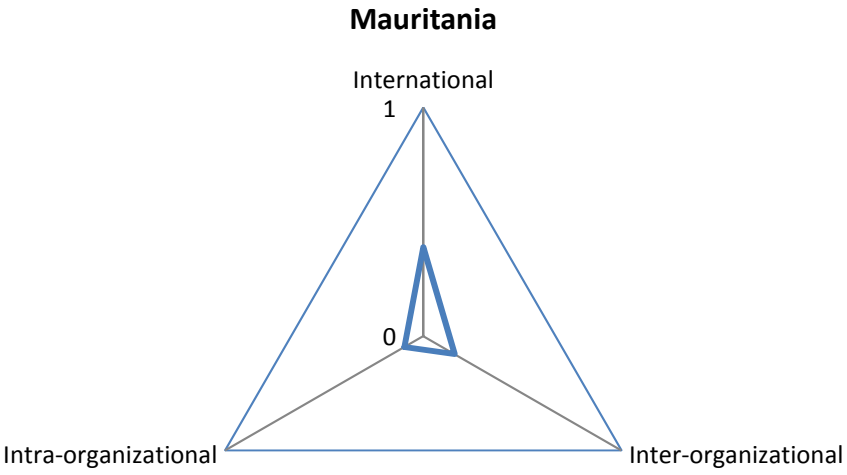
Malta
Connectedness Index 2013: 0.561
Rank 2013: 44 of 138
Rank 2011: 56 of 132
Rank 2012: 44 of 132
Connectedness Profile 2013

International Networks: 0.716
Inter-organizational Networks: 0.478
Intra-organizational networks: 0.488



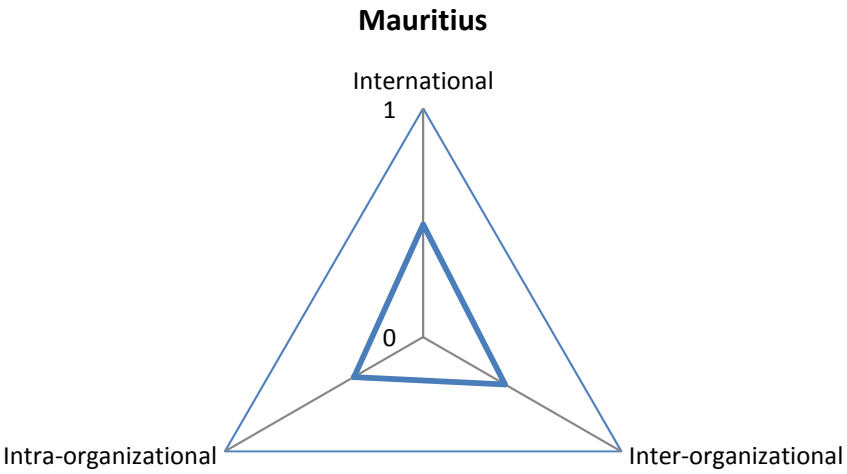
Mauritania
Connectedness Index 2013: 0.214
Rank 2013: 135 of 138
Rank 2011: 109 of 132
Rank 2012: 113 of 132
Connectedness Profile 2013

International Networks: 0.389
Inter-organizational Networks: 0.158
Intra-organizational networks: 0.096



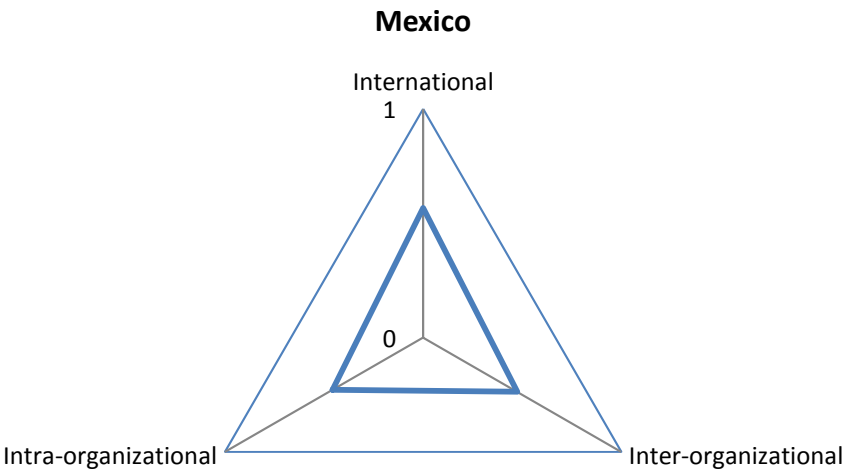
Mauritius
Connectedness Index 2013: 0.419
Rank 2013: 83 of 138
Rank 2011: 64 of 132
Rank 2012: 89 of 132
Connectedness Profile 2013

International Networks: 0.493
Inter-organizational Networks: 0.414
Intra-organizational networks: 0.350



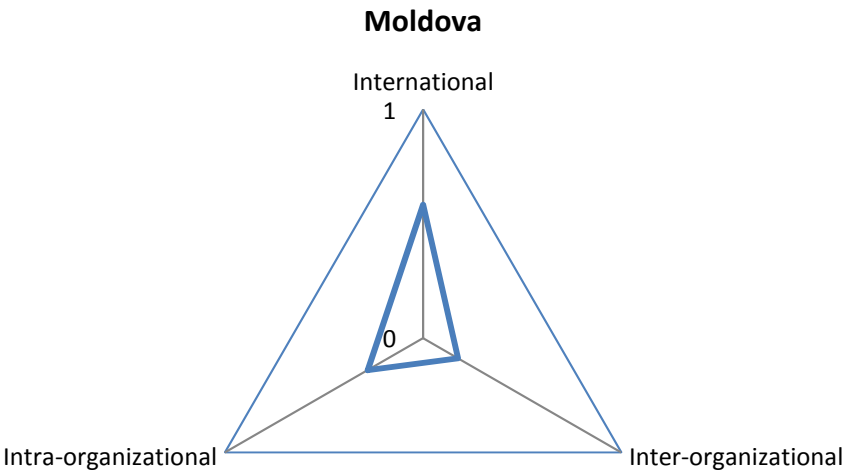
Mexico
Connectedness Index 2013: 0.499
Rank 2013: 52 of 138
Rank 2011: 79 of 132
Rank 2012: 70 of 132
Connectedness Profile 2013

International Networks: 0.566
Inter-organizational Networks: 0.475
Intra-organizational networks: 0.457



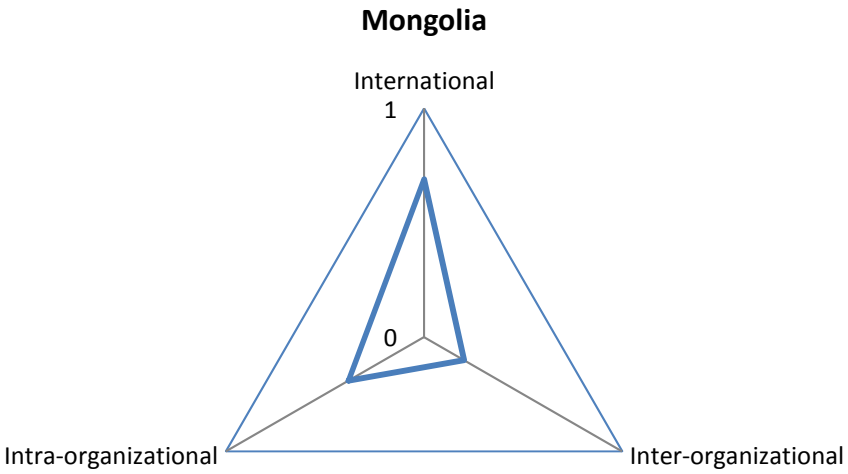
Moldova
Connectedness Index 2013: 0.347
Rank 2013: 106 of 138
Rank 2011: 124 of 132
Rank 2012: 125 of 132
Connectedness Profile 2013

International Networks: 0.584
Inter-organizational Networks: 0.176
Intra-organizational networks: 0.280



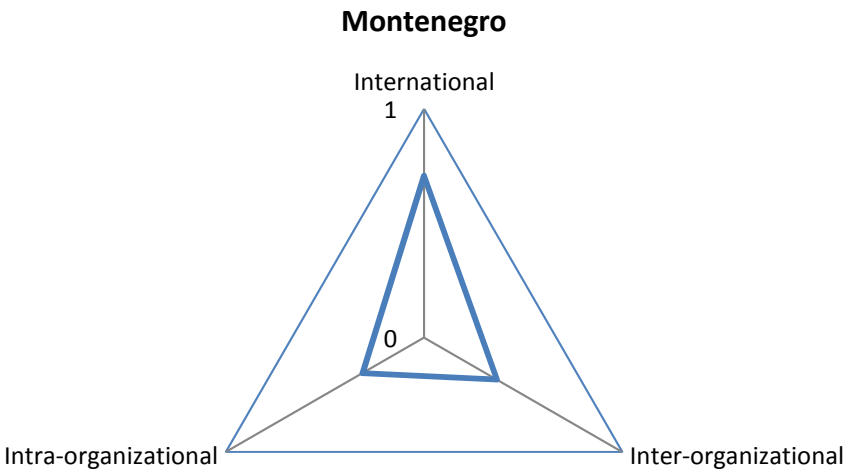
Mongolia
Connectedness Index 2013: 0.425
Rank 2013: 81 of 138
Rank 2011: 104 of 132
Rank 2012: 82 of 132
Connectedness Profile 2013

International Networks: 0.690
Inter-organizational Networks: 0.202
Intra-organizational networks: 0.381



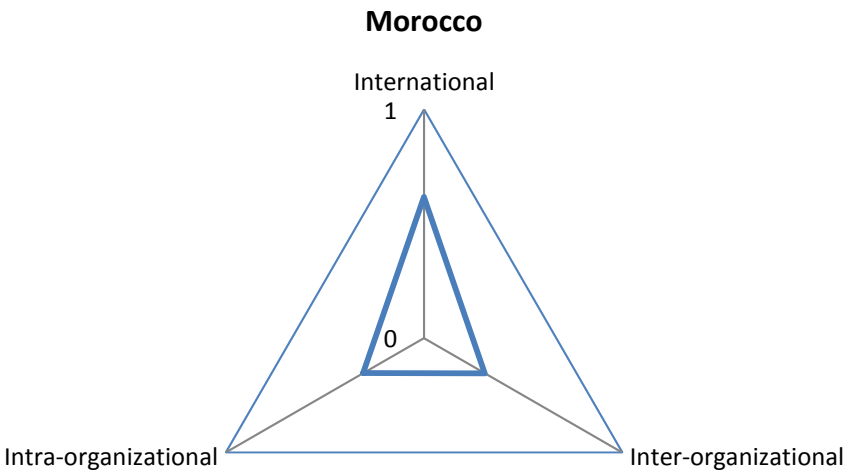
Montenegro
Connectedness Index 2013: 0.462
Rank 2013: 65 of 138
Rank 2011: 85 of 132
Rank 2012: 83 of 132
Connectedness Profile 2013

International Networks: 0.709
Inter-organizational Networks: 0.368
Intra-organizational networks: 0.311



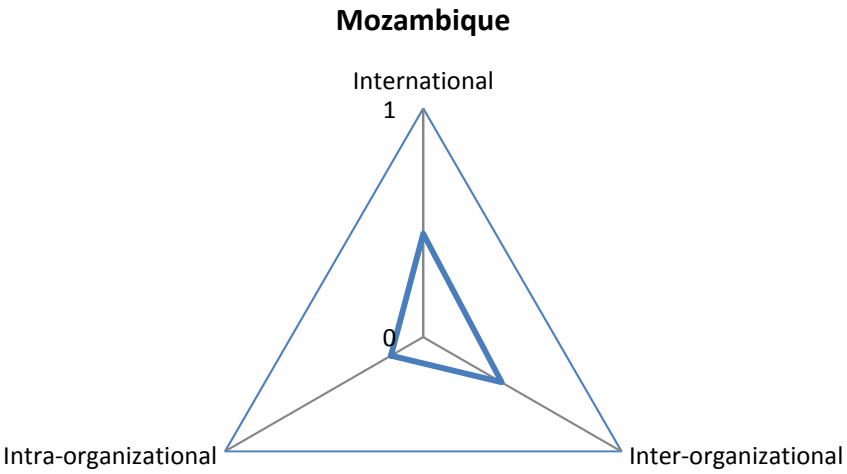
Morocco
Connectedness Index 2013: 0.410
Rank 2013: 88 of 138
Rank 2011: 81 of 132
Rank 2012: 94 of 132
Connectedness Profile 2013

International Networks: 0.616
Inter-organizational Networks: 0.308
Intra-organizational networks: 0.307



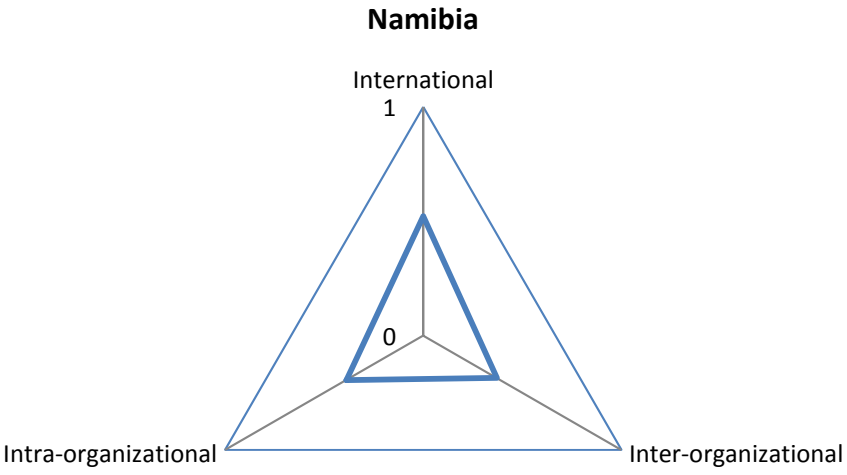
Mozambique
Connectedness Index 2013: 0.337
Rank 2013: 109 of 138
Rank 2011: 108 of 132
Rank 2012: 107 of 132
Connectedness Profile 2013

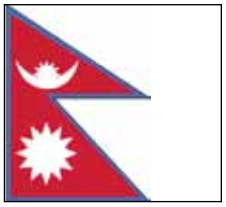
International Networks: 0.451
Inter-organizational Networks: 0.396
Intra-organizational networks: 0.163



Namibia
Connectedness Index 2013: 0.427
Rank 2013: 79 of 138
Rank 2011: 78 of 132
Rank 2012: 69 of 132
Connectedness Profile 2013

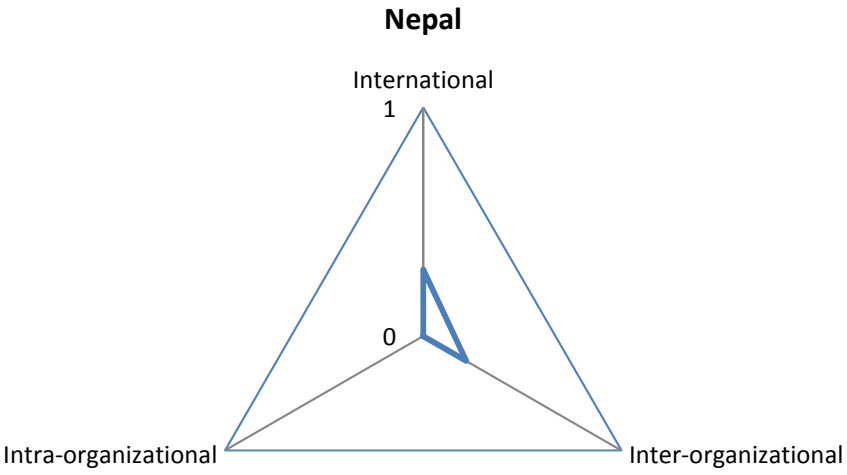
International Networks: 0.522
Inter-organizational Networks: 0.371
Intra-organizational networks: 0.389





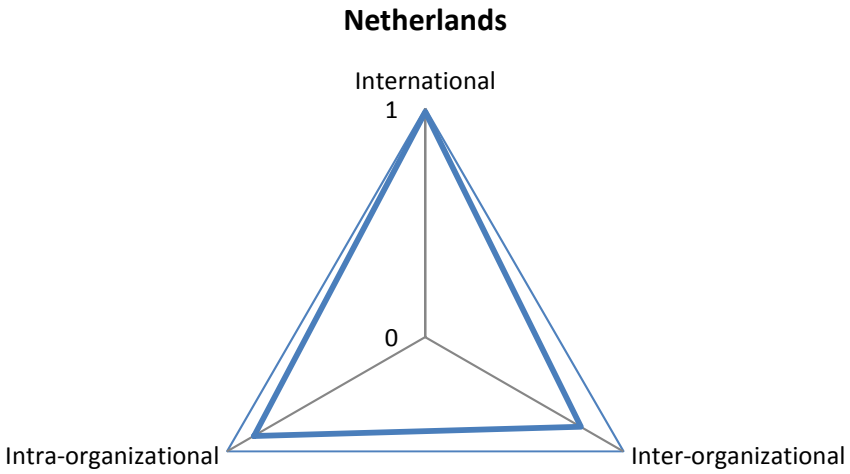
Nepal
Connectedness Index 2013: 0.169
Rank 2013: 136 of 138
Rank 2011: 131 of 132
Rank 2012: 131 of 132
Connectedness Profile 2013

International Networks: 0.291
Inter-organizational Networks: 0.216
Intra-organizational networks: 0.000



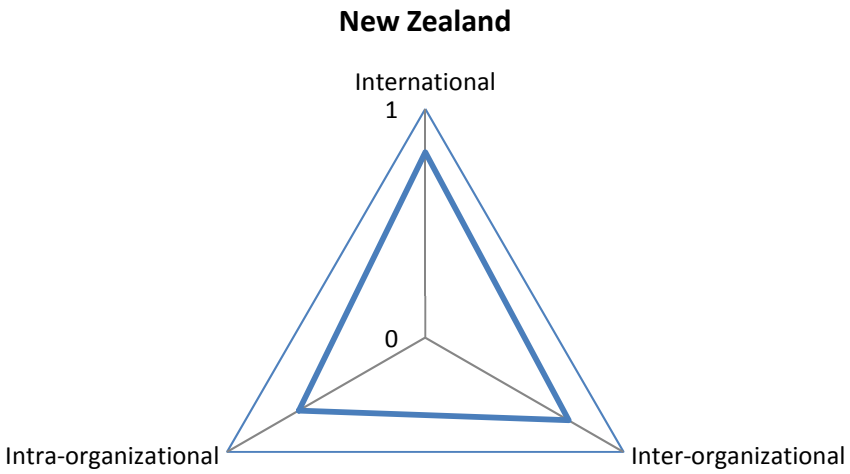
Netherlands
Connectedness Index 2013: 0.878
Rank 2013: 3 of 138
Rank 2011: 5 of 132
Rank 2012: 4 of 132
Connectedness Profile 2013

International Networks: 0.984
Inter-organizational Networks: 0.786
Intra-organizational networks: 0.865



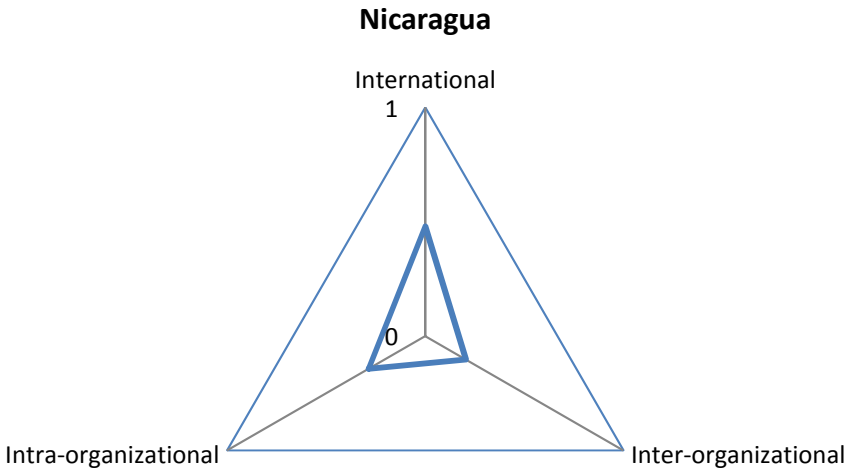
New Zealand
Connectedness Index 2013: 0.724
Rank 2013: 20 of 138
Rank 2011: 22 of 132
Rank 2012: 20 of 132
Connectedness Profile 2013

International Networks: 0.810
Inter-organizational Networks: 0.724
Intra-organizational networks: 0.639



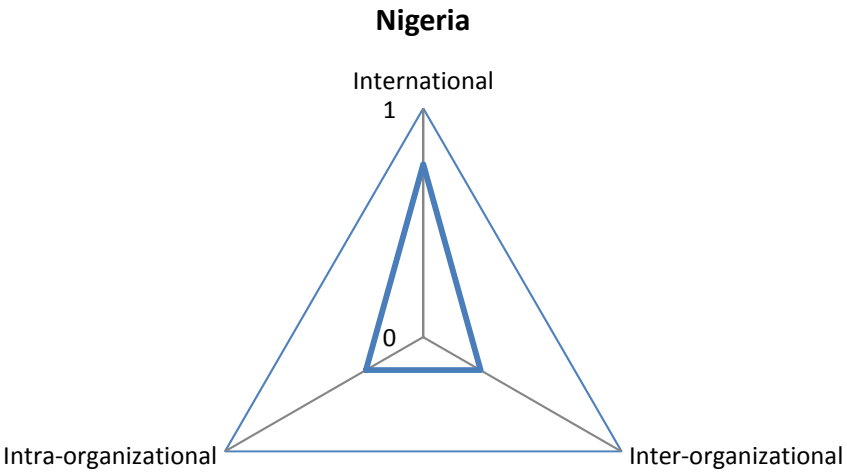
Nicaragua
Connectedness Index 2013: 0.324
Rank 2013: 113 of 138
Rank 2011: 122 of 132
Rank 2012: 120 of 132
Connectedness Profile 2013

International Networks: 0.480
Inter-organizational Networks: 0.205
Intra-organizational networks: 0.285



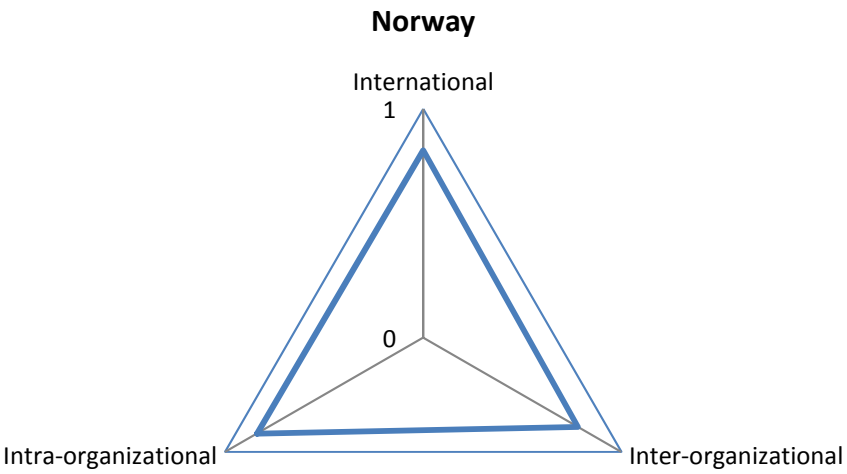
Nigeria
Connectedness Index 2013: 0.444
Rank 2013: 71 of 138
Rank 2011: 62 of 132
Rank 2012: 65 of 132
Connectedness Profile 2013

International Networks: 0.755
Inter-organizational Networks: 0.289
Intra-organizational networks: 0.289



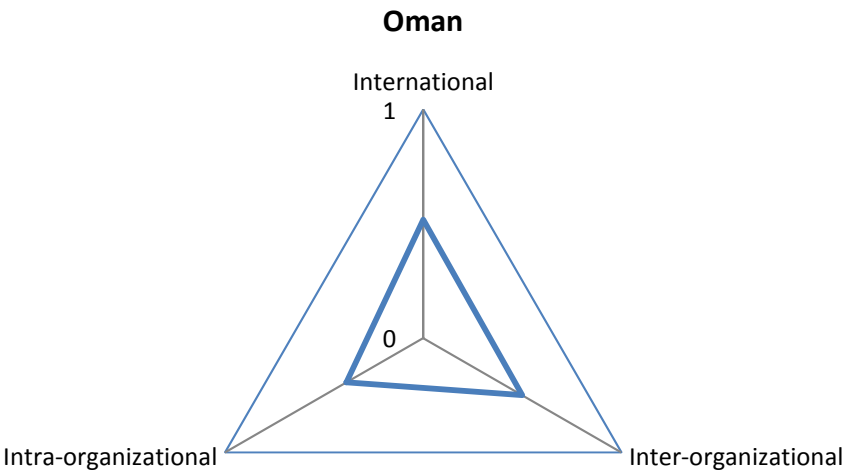
Norway
Connectedness Index 2013: 0.813
Rank 2013: 12 of 138
Rank 2011: 10 of 132
Rank 2012: 11 of 132
Connectedness Profile 2013

International Networks: 0.819
Inter-organizational Networks: 0.781
Intra-organizational networks: 0.840



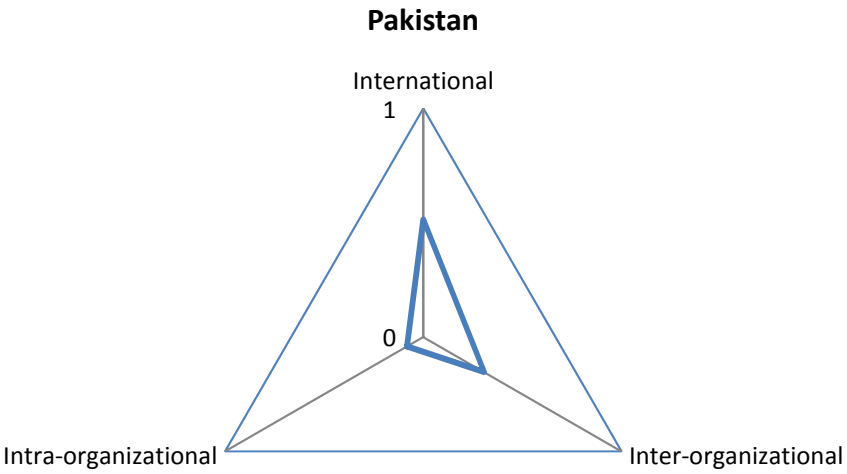
Oman
Connectedness Index 2013: 0.468
Rank 2013: 61 of 138
Rank 2011: 82 of 132
Rank 2012: 79 of 132
Connectedness Profile 2013

International Networks: 0.517
Inter-organizational Networks: 0.500
Intra-organizational networks: 0.387



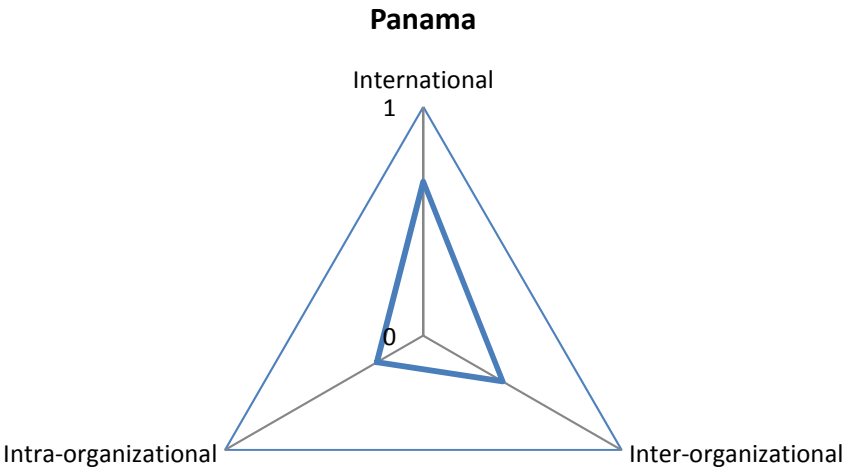
Pakistan
Connectedness Index 2013: 0.301
Rank 2013: 121 of 138
Rank 2011: 118 of 132
Rank 2012: 122 of 132
Connectedness Profile 2013

International Networks: 0.515
Inter-organizational Networks: 0.307
Intra-organizational networks: 0.082



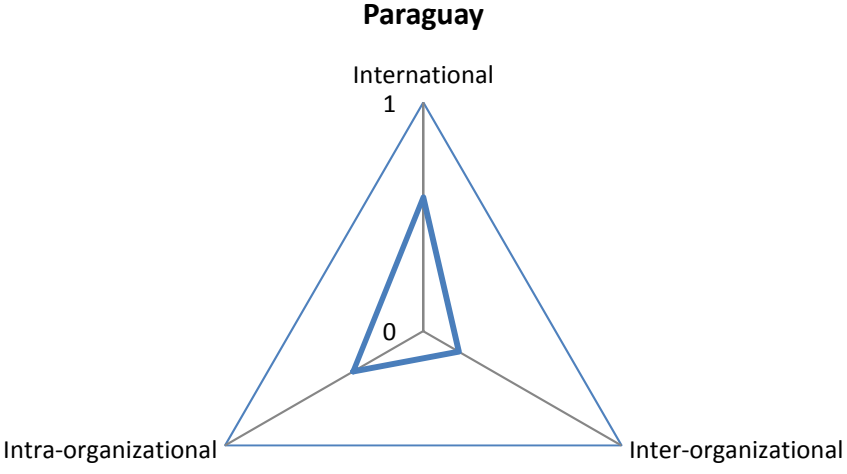
Panama
Connectedness Index 2013: 0.436
Rank 2013: 76 of 138
Rank 2011: 45 of 132
Rank 2012: 45 of 132
Connectedness Profile 2013

International Networks: 0.674
Inter-organizational Networks: 0.400
Intra-organizational networks: 0.234



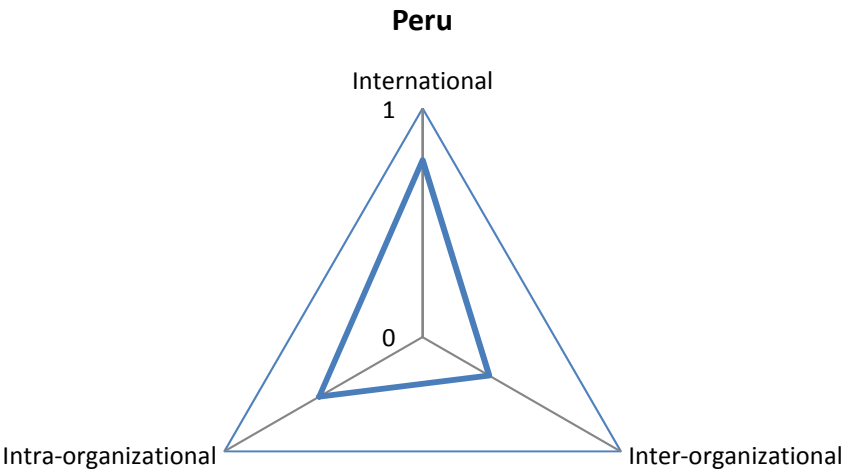
Paraguay
Connectedness Index 2013: 0.373
Rank 2013: 103 of 138
Rank 2011: 117 of 132
Rank 2012: 112 of 132
Connectedness Profile 2013

International Networks: 0.584
Inter-organizational Networks: 0.180
Intra-organizational networks: 0.353



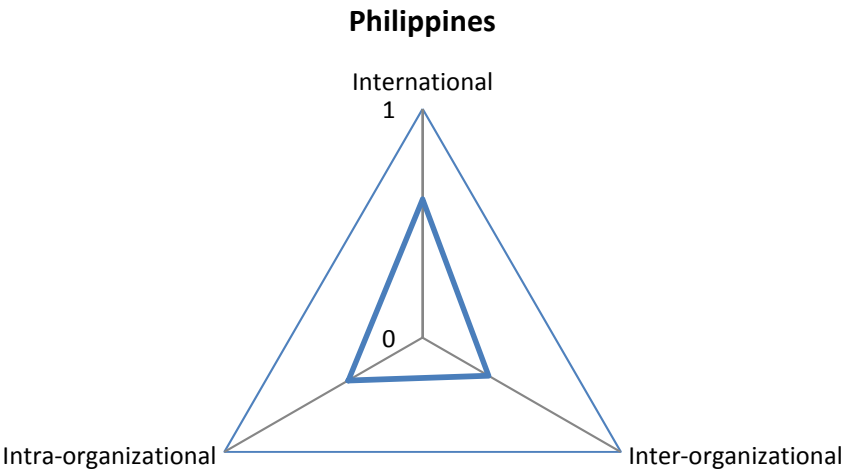
Peru
Connectedness Index 2013: 0.544
Rank 2013: 46 of 138
Rank 2011: 51 of 132
Rank 2012: 48 of 132
Connectedness Profile 2013

International Networks: 0.774
Inter-organizational Networks: 0.336
Intra-organizational networks: 0.522



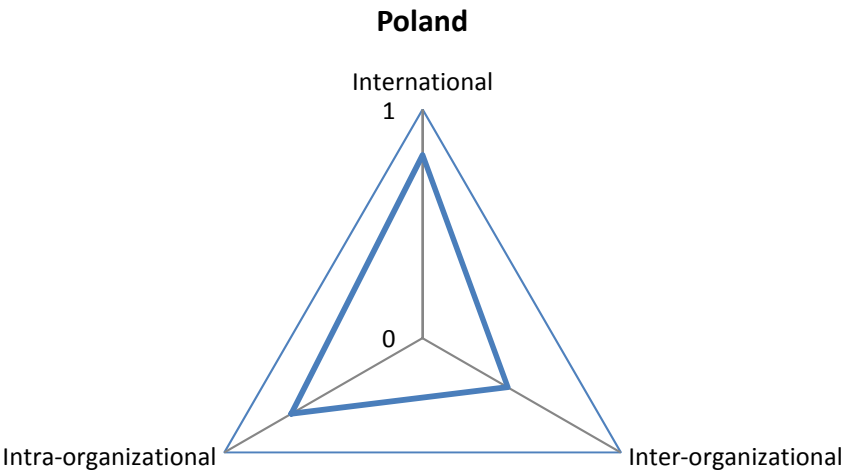
Philippines
Connectedness Index 2013: 0.437
Rank 2013: 75 of 138
Rank 2011: 61 of 132
Rank 2012: 72 of 132
Connectedness Profile 2013

International Networks: 0.604
Inter-organizational Networks: 0.333
Intra-organizational networks: 0.375



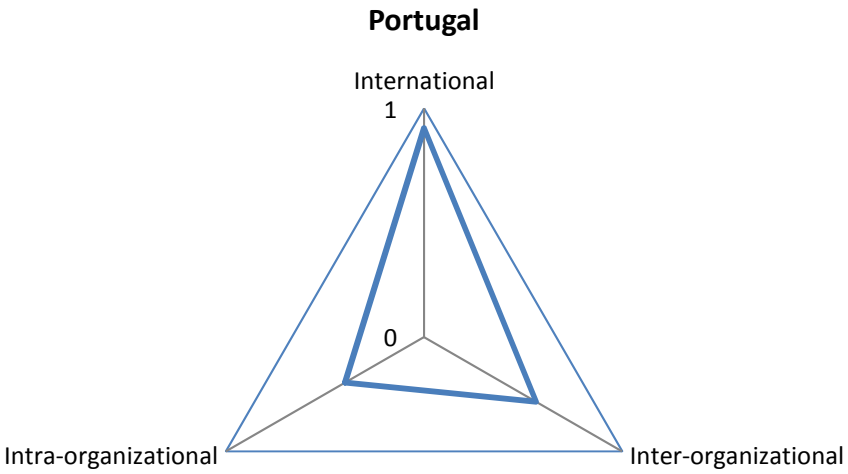
Poland
Connectedness Index 2013: 0.631
Rank 2013: 31 of 138
Rank 2011: 42 of 132
Rank 2012: 33 of 132
Connectedness Profile 2013

International Networks: 0.800
Inter-organizational Networks: 0.430
Intra-organizational networks: 0.662



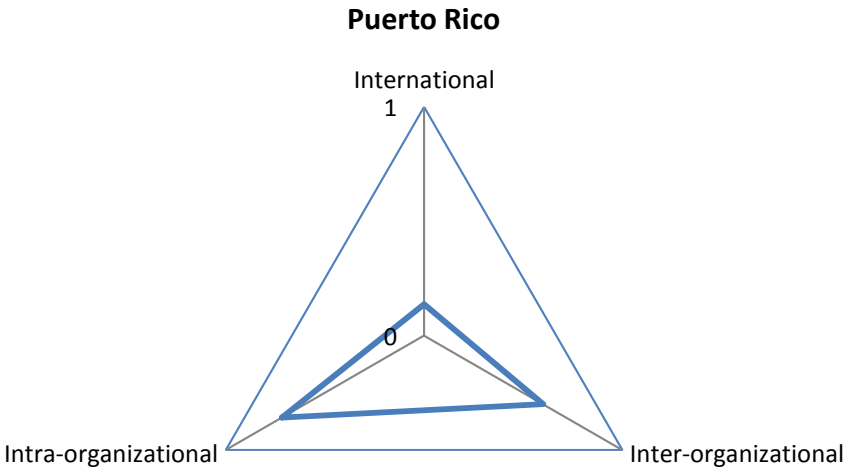
Portugal
Connectedness Index 2013: 0.627
Rank 2013: 33 of 138
Rank 2011: 38 of 132
Rank 2012: 34 of 132
Connectedness Profile 2013

International Networks: 0.915
Inter-organizational Networks: 0.566
Intra-organizational networks: 0.399



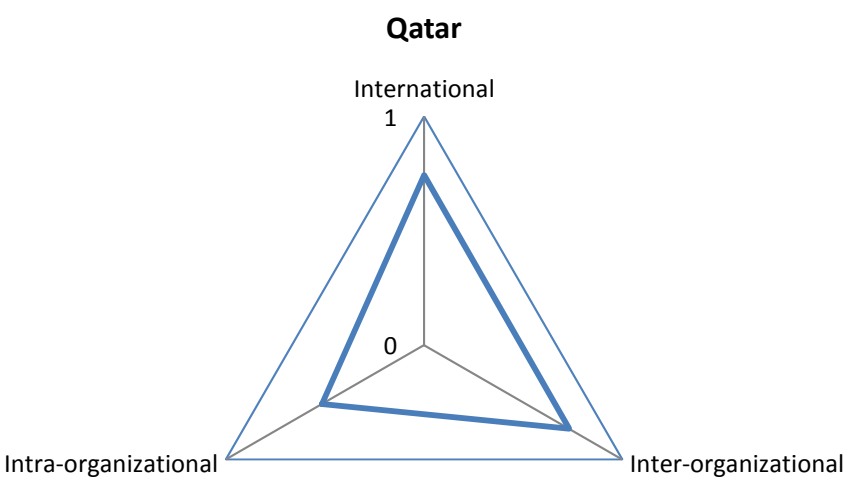
Puerto Rico
Connectedness Index 2013: 0.485
Rank 2013: 55 of 138
Rank 2011: 58 of 132
Rank 2012: 53 of 132
Connectedness Profile 2013

International Networks: 0.137
Inter-organizational Networks: 0.601
Intra-organizational networks: 0.717



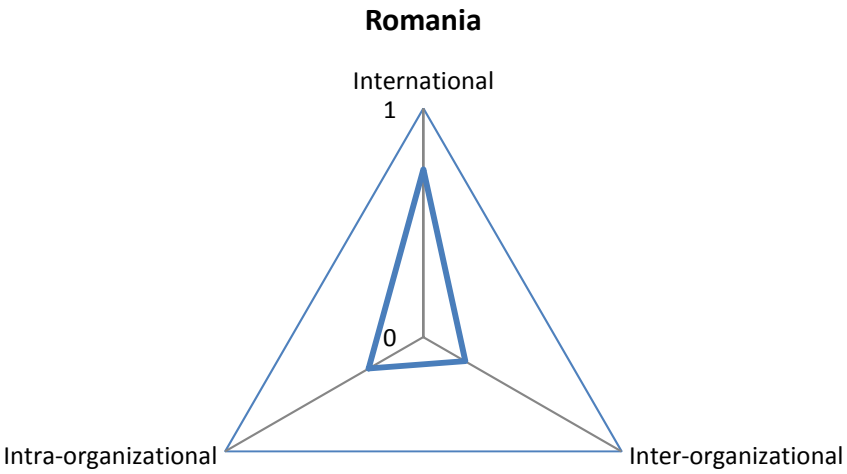
Qatar
Connectedness Index 2013: 0.664
Rank 2013: 25 of 138
Rank 2011: 37 of 132
Rank 2012: 35 of 132
Connectedness Profile 2013

International Networks: 0.743
Inter-organizational Networks: 0.733
Intra-organizational networks: 0.516



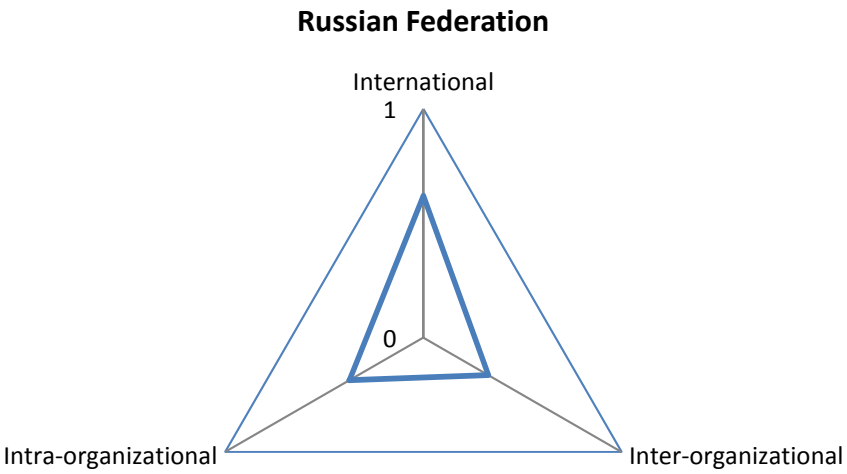
Romania
Connectedness Index 2013: 0.407
Rank 2013: 91 of 138
Rank 2011: 63 of 132
Rank 2012: 80 of 132
Connectedness Profile 2013

International Networks: 0.733
Inter-organizational Networks: 0.212
Intra-organizational networks: 0.276



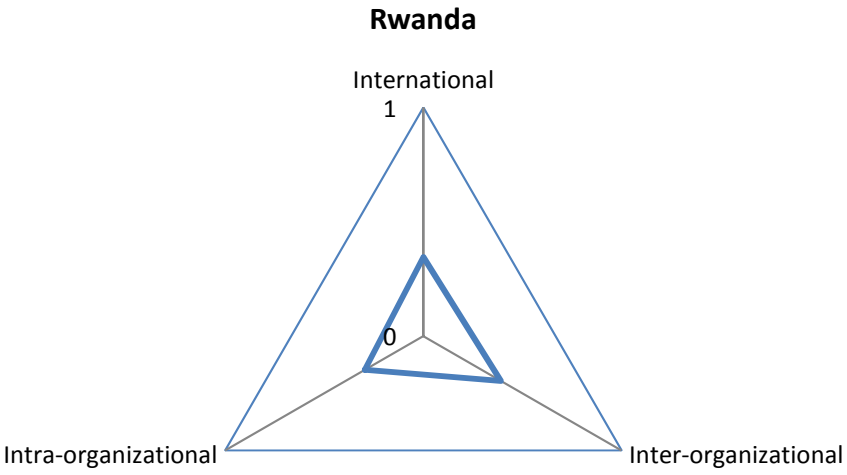
Russian Federation
Connectedness Index 2013: 0.440
Rank 2013: 72 of 138
Rank 2011: 70 of 132
Rank 2012: 49 of 132
Connectedness Profile 2013

International Networks: 0.619
Inter-organizational Networks: 0.328
Intra-organizational networks: 0.374



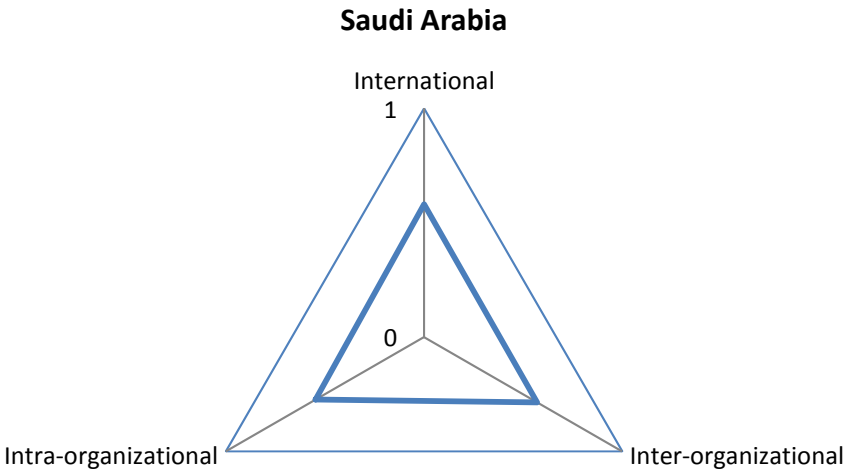
Rwanda
Connectedness Index 2013: 0.344
Rank 2013: 107 of 138
Rank 2011: of 132
Rank 2012: of 132
Connectedness Profile 2013

International Networks: 0.346
Inter-organizational Networks: 0.392
Intra-organizational networks: 0.296



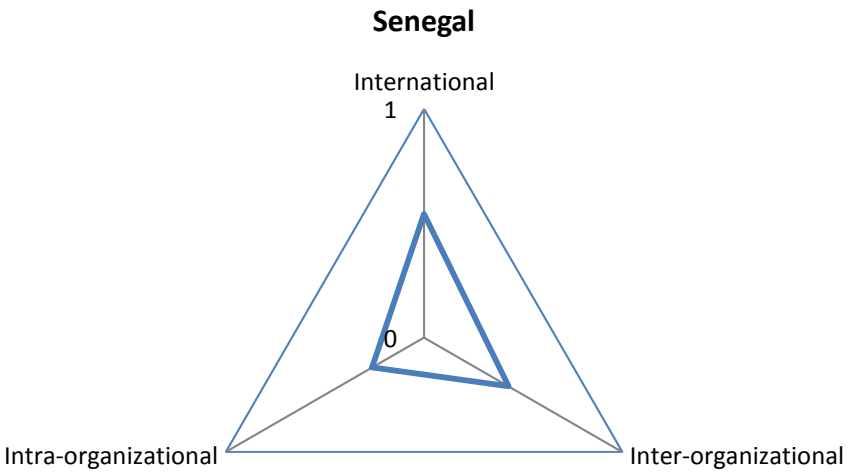
Saudi Arabia
Connectedness Index 2013: 0.566
Rank 2013: 42 of 138
Rank 2011: 54 of 132
Rank 2012: 52 of 132
Connectedness Profile 2013

International Networks: 0.581
Inter-organizational Networks: 0.571
Intra-organizational networks: 0.547



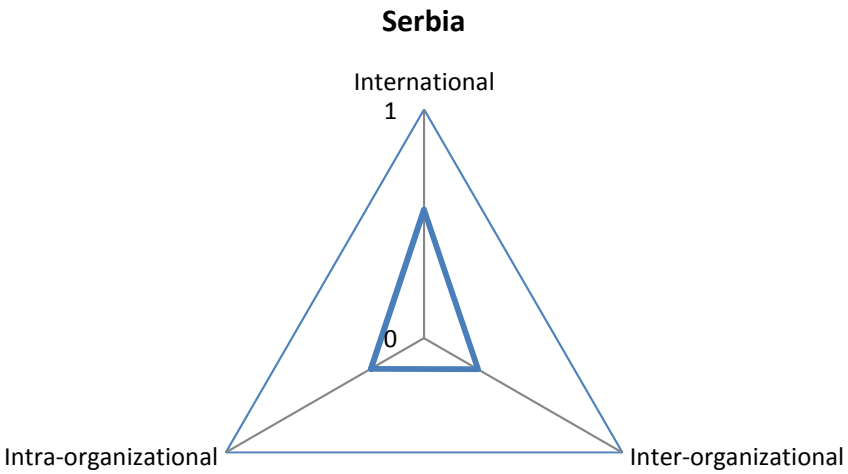
Senegal
Connectedness Index 2013: 0.410
Rank 2013: 89 of 138
Rank 2011: 80 of 132
Rank 2012: 77 of 132
Connectedness Profile 2013

International Networks: 0.540
Inter-organizational Networks: 0.427
Intra-organizational networks: 0.262



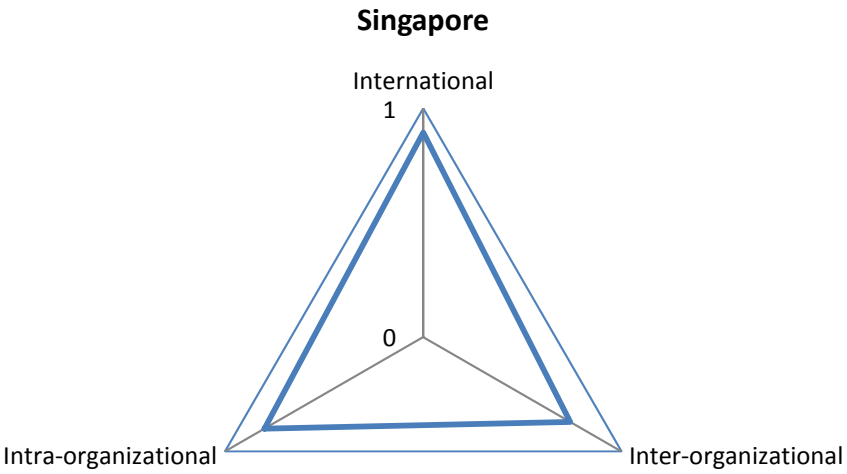
Serbia
Connectedness Index 2013: 0.369
Rank 2013: 104 of 138
Rank 2011: 83 of 132
Rank 2012: 88 of 132
Connectedness Profile 2013

International Networks: 0.563
Inter-organizational Networks: 0.273
Intra-organizational networks: 0.269



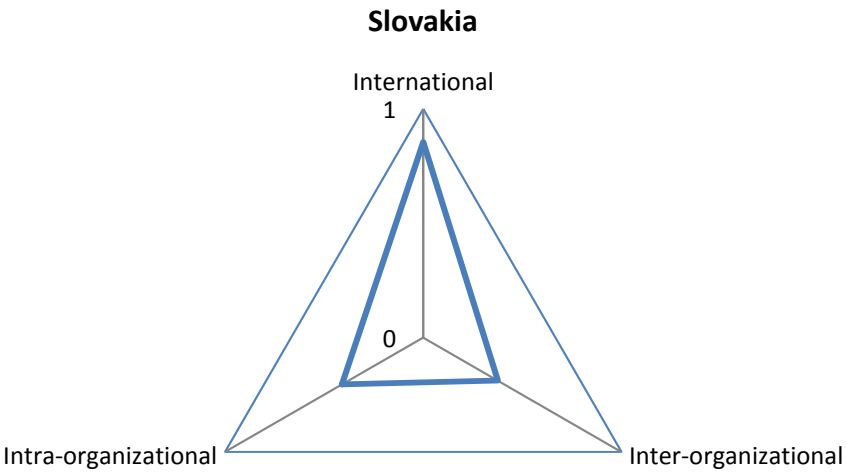
Singapore
Connectedness Index 2013: 0.813
Rank 2013: 13 of 138
Rank 2011: 9 of 132
Rank 2012: 7 of 132
Connectedness Profile 2013

International Networks: 0.894
Inter-organizational Networks: 0.742
Intra-organizational networks: 0.802



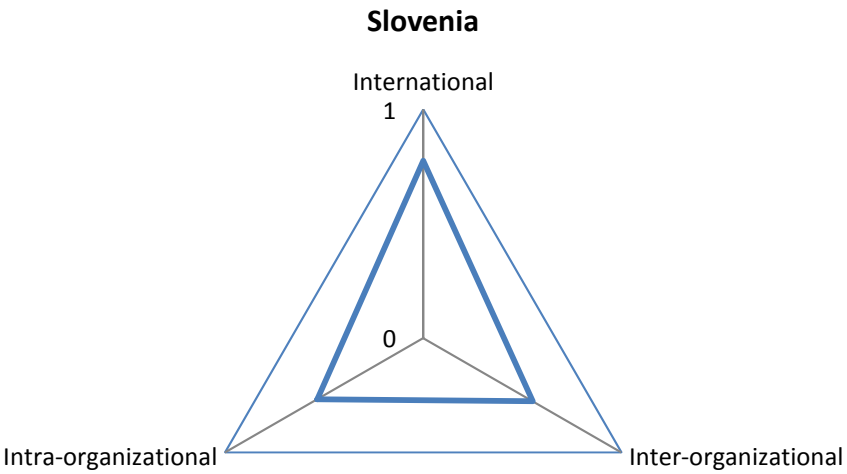
Slovakia
Connectedness Index 2013: 0.547
Rank 2013: 45 of 138
Rank 2011: 27 of 132
Rank 2012: 43 of 132
Connectedness Profile 2013

International Networks: 0.855
Inter-organizational Networks: 0.377
Intra-organizational networks: 0.411



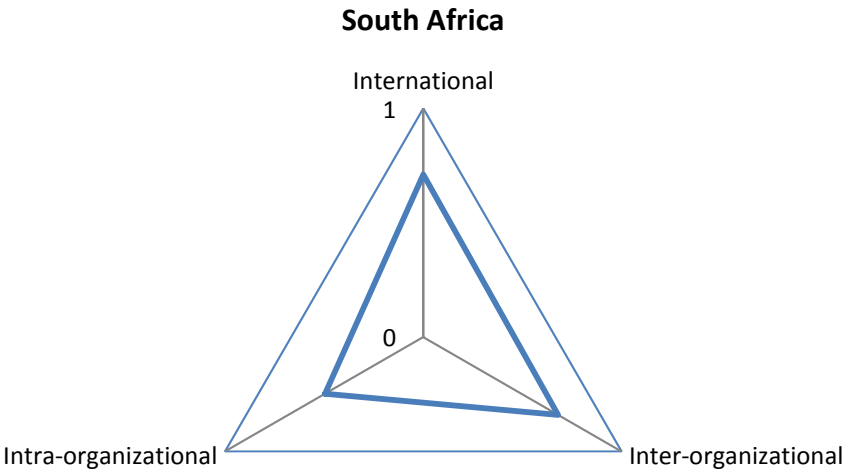
Slovenia
Connectedness Index 2013: 0.621
Rank 2013: 36 of 138
Rank 2011: 24 of 132
Rank 2012: 28 of 132
Connectedness Profile 2013

International Networks: 0.775
Inter-organizational Networks: 0.553
Intra-organizational networks: 0.535



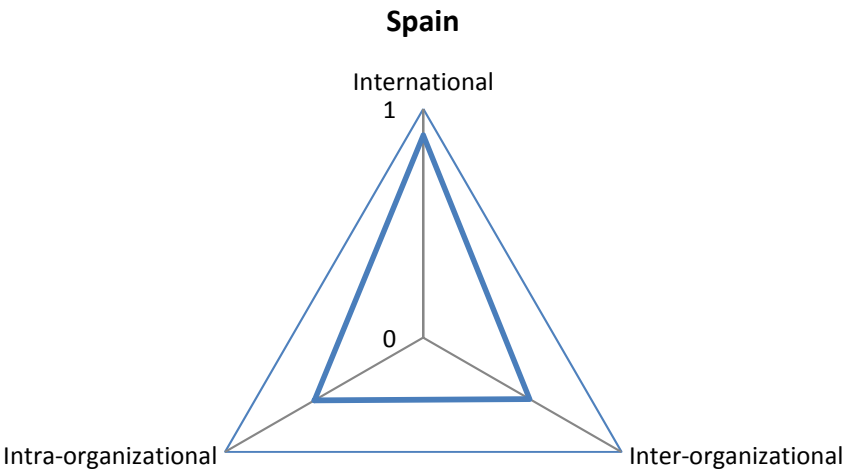
South Africa
Connectedness Index 2013: 0.629
Rank 2013: 32 of 138
Rank 2011: 30 of 132
Rank 2012: 26 of 132
Connectedness Profile 2013

International Networks: 0.711
Inter-organizational Networks: 0.681
Intra-organizational networks: 0.497



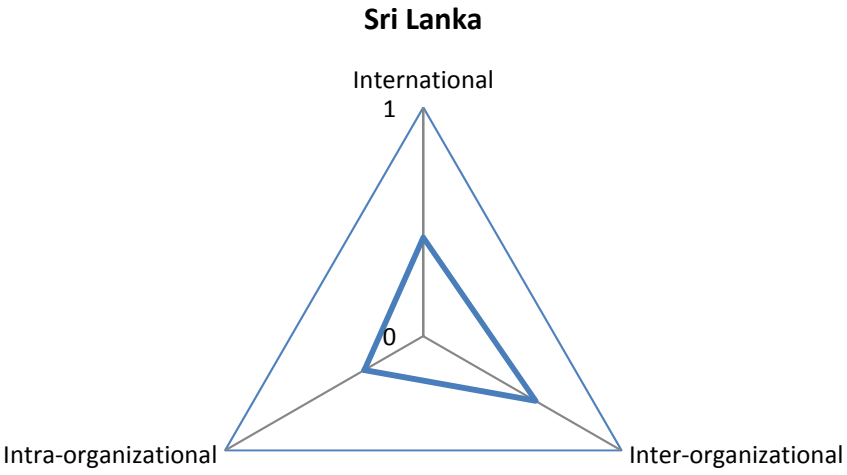
Spain
Connectedness Index 2013: 0.658
Rank 2013: 28 of 138
Rank 2011: 32 of 132
Rank 2012: 27 of 132
Connectedness Profile 2013

International Networks: 0.885
Inter-organizational Networks: 0.537
Intra-organizational networks: 0.550



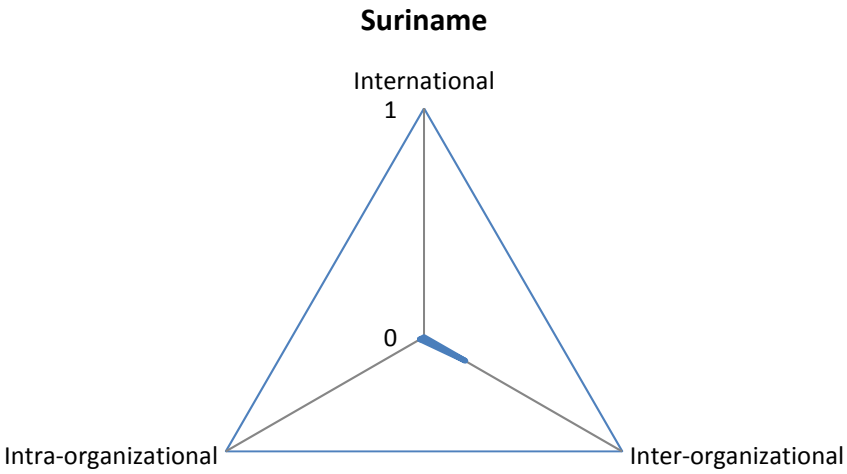
Sri Lanka
Connectedness Index 2013: 0.432
Rank 2013: 77 of 138
Rank 2011: 57 of 132
Rank 2012: 66 of 132
Connectedness Profile 2013

International Networks: 0.431
Inter-organizational Networks: 0.567
Intra-organizational networks: 0.298



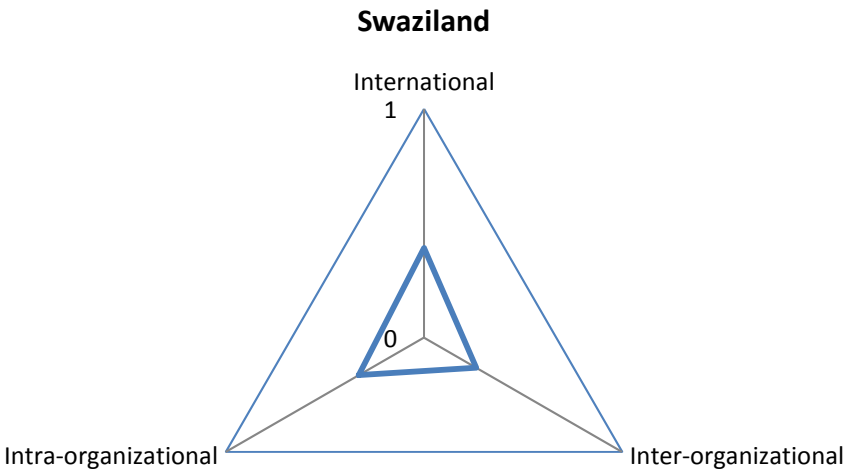
Suriname
Connectedness Index 2013: 0.076
Rank 2013: 138 of 138
Rank 2011: 129 of 132
Rank 2012: 132 of 132
Connectedness Profile 2013

International Networks: 0.000
Inter-organizational Networks: 0.208
Intra-organizational networks: 0.021



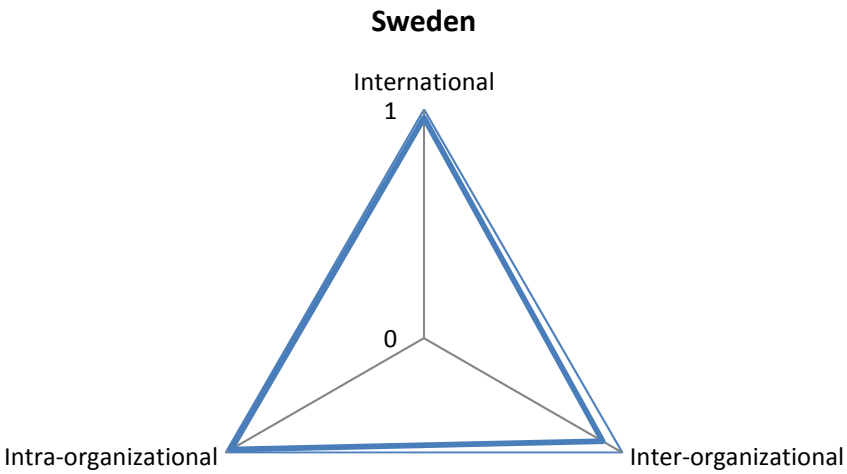
Swaziland
Connectedness Index 2013: 0.328
Rank 2013: 111 of 138
Rank 2011: of 132
Rank 2012: of 132
Connectedness Profile 2013

International Networks: 0.391
Inter-organizational Networks: 0.264
Intra-organizational networks: 0.330



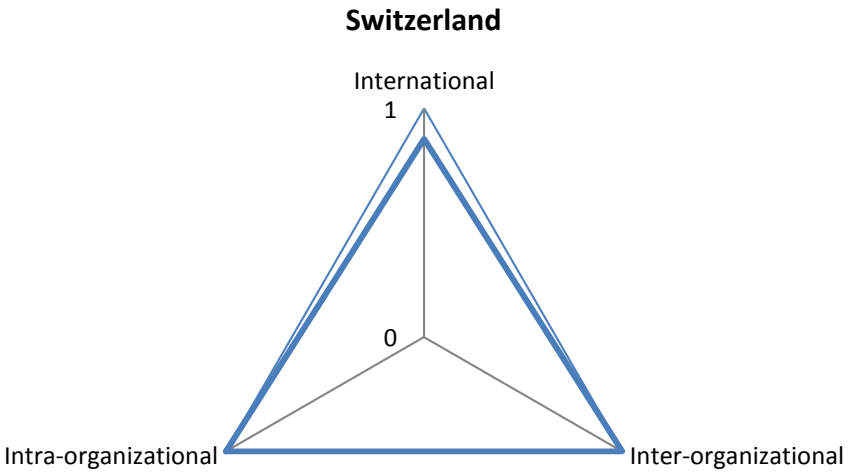
Sweden
Connectedness Index 2013: 0.946
Rank 2013: 2 of 138
Rank 2011: 2 of 132
Rank 2012: 2 of 132
Connectedness Profile 2013

International Networks: 0.962
Inter-organizational Networks: 0.902
Intra-organizational networks: 0.975



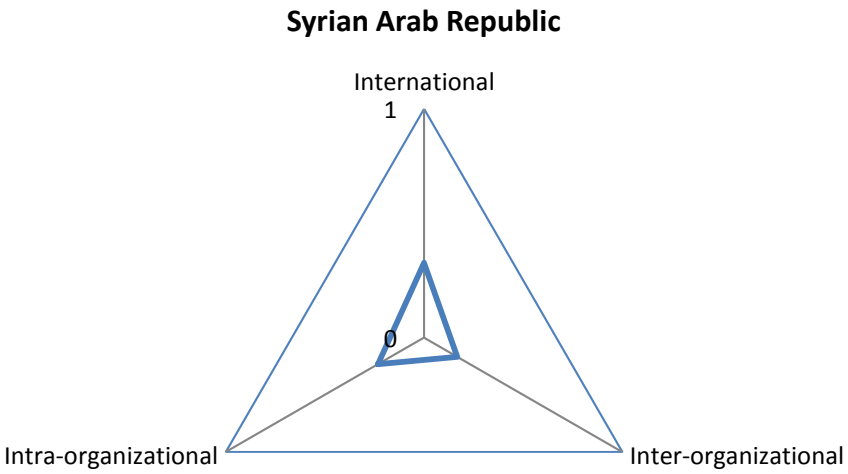
Switzerland
Connectedness Index 2013: 0.956
Rank 2013: 1 of 138
Rank 2011: 1 of 132
Rank 2012: 1 of 132
Connectedness Profile 2013

International Networks: 0.867
Inter-organizational Networks: 1.000
Intra-organizational networks: 1.000



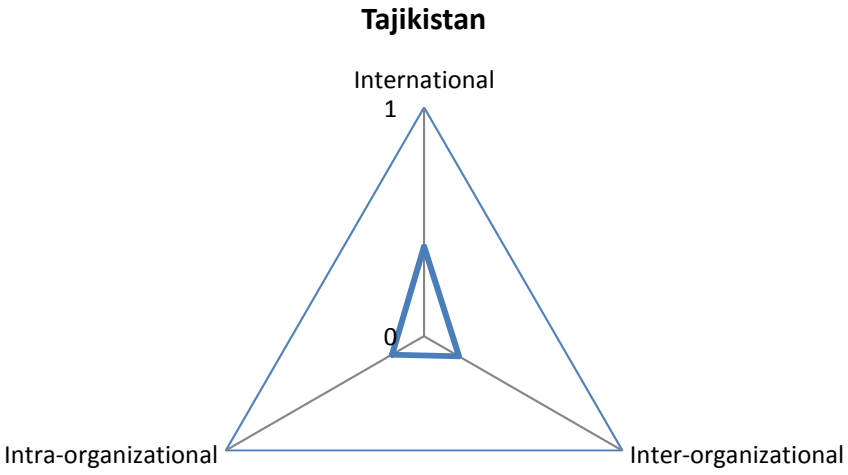
Syrian Arab Republic
Connectedness Index 2013: 0.243
Rank 2013: 133 of 138
Rank 2011: 119 of 132
Rank 2012: 124 of 132
Connectedness Profile 2013

International Networks: 0.327
Inter-organizational Networks: 0.169
Intra-organizational networks: 0.233



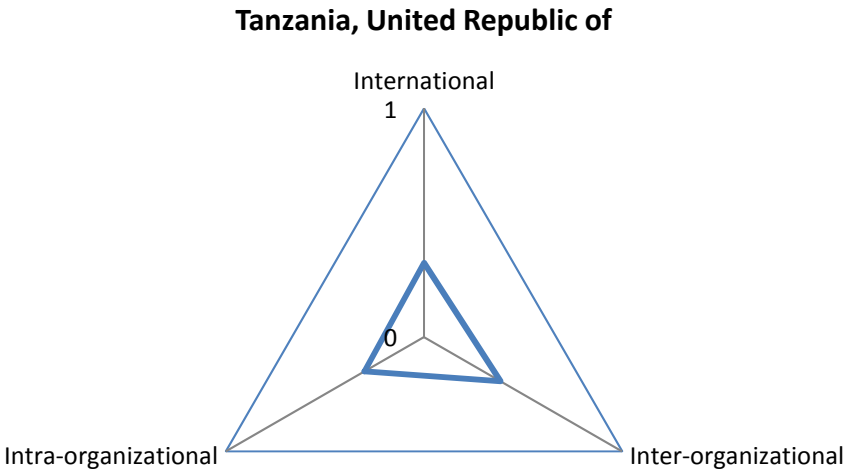
Tajikistan
Connectedness Index 2013: 0.244
Rank 2013: 131 of 138
Rank 2011: 116 of 132
Rank 2012: 128 of 132
Connectedness Profile 2013

International Networks: 0.392
Inter-organizational Networks: 0.176
Intra-organizational networks: 0.162



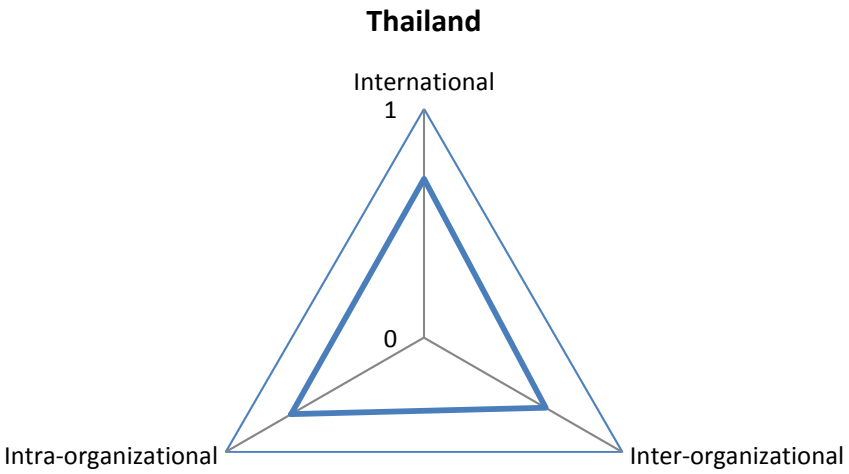
Tanzania, United Republic of
Connectedness Index 2013: 0.337
Rank 2013: 108 of 138
Rank 2011: 125 of 132
Rank 2012: 109 of 132
Connectedness Profile 2013

International Networks: 0.324
Inter-organizational Networks: 0.386
Intra-organizational networks: 0.301



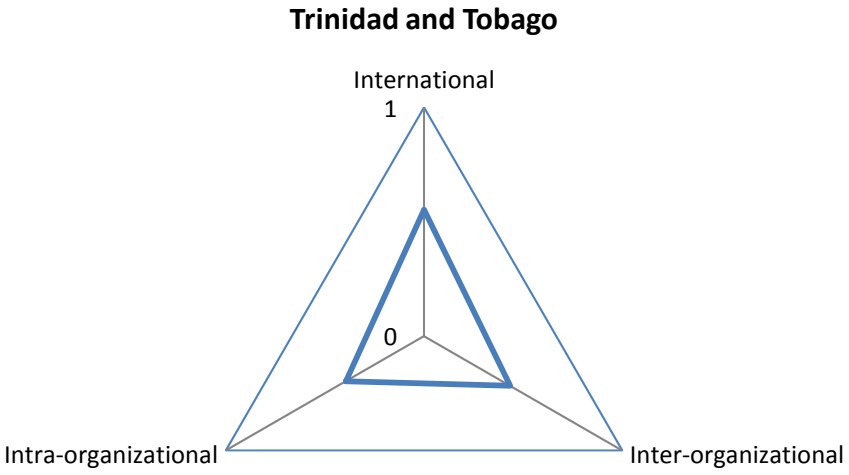
Thailand
Connectedness Index 2013: 0.660
Rank 2013: 26 of 138
Rank 2011: 26 of 132
Rank 2012: 23 of 132
Connectedness Profile 2013

International Networks: 0.695
Inter-organizational Networks: 0.615
Intra-organizational networks: 0.671



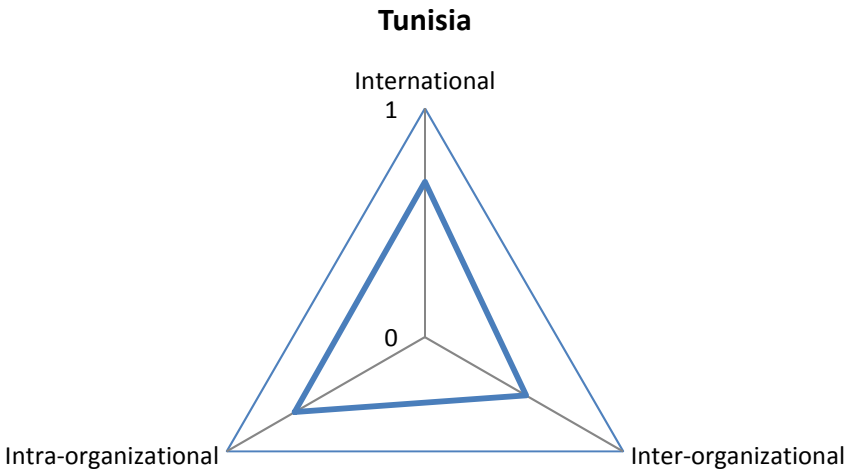
Trinidad and Tobago
Connectedness Index 2013: 0.461
Rank 2013: 66 of 138
Rank 2011: 74 of 132
Rank 2012: 64 of 132
Connectedness Profile 2013

International Networks: 0.552
Inter-organizational Networks: 0.435
Intra-organizational networks: 0.395



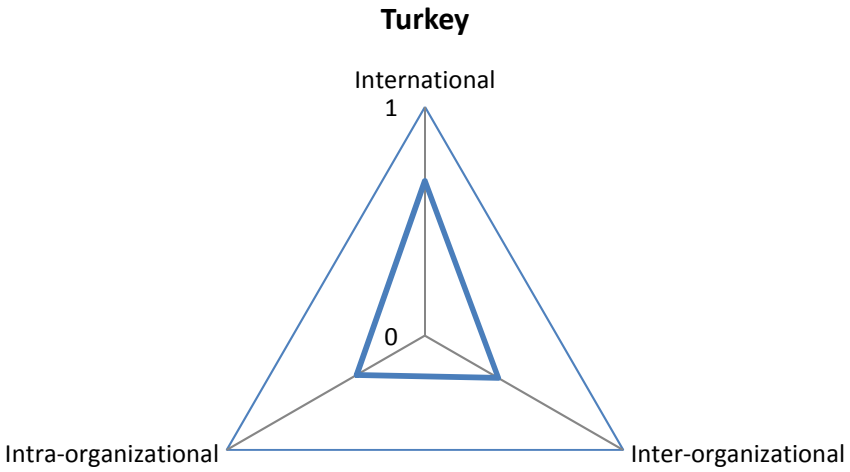
Tunisia
Connectedness Index 2013: 0.616
Rank 2013: 37 of 138
Rank 2011: 29 of 132
Rank 2012: 36 of 132
Connectedness Profile 2013

International Networks: 0.678
Inter-organizational Networks: 0.511
Intra-organizational networks: 0.657



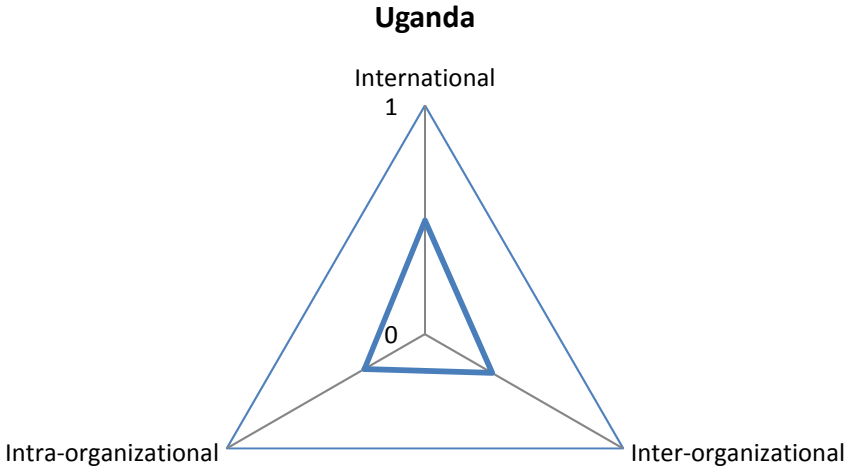
Turkey
Connectedness Index 2013: 0.464
Rank 2013: 64 of 138
Rank 2011: 77 of 132
Rank 2012: 71 of 132
Connectedness Profile 2013

International Networks: 0.676
Inter-organizational Networks: 0.370
Intra-organizational networks: 0.345



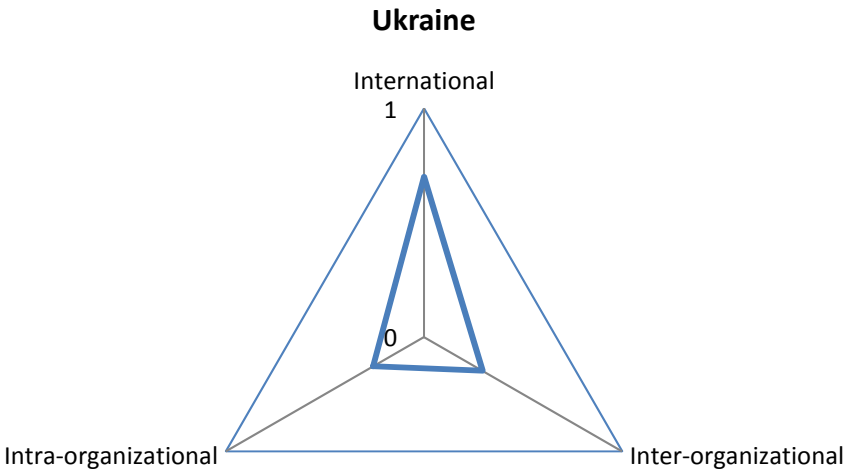
Uganda
Connectedness Index 2013: 0.381
Rank 2013: 99 of 138
Rank 2011: 98 of 132
Rank 2012: 98 of 132
Connectedness Profile 2013

International Networks: 0.496
Inter-organizational Networks: 0.340
Intra-organizational networks: 0.306



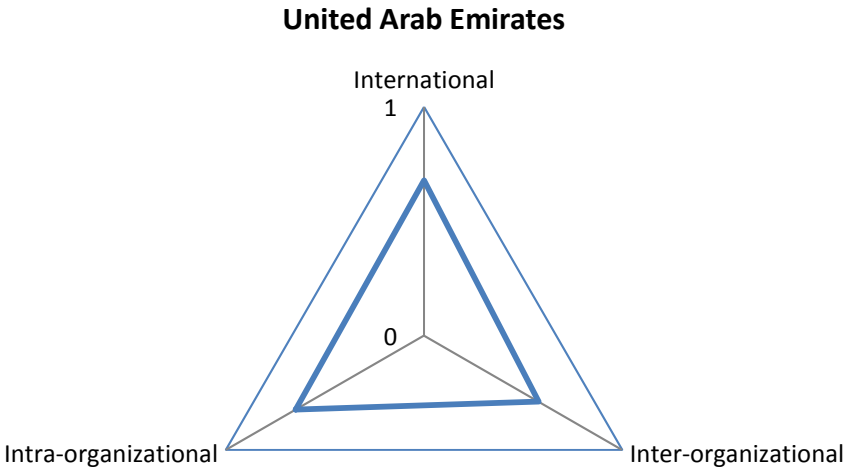
Ukraine
Connectedness Index 2013: 0.418
Rank 2013: 85 of 138
Rank 2011: 73 of 132
Rank 2012: 68 of 132
Connectedness Profile 2013

International Networks: 0.701
Inter-organizational Networks: 0.296
Intra-organizational networks: 0.256



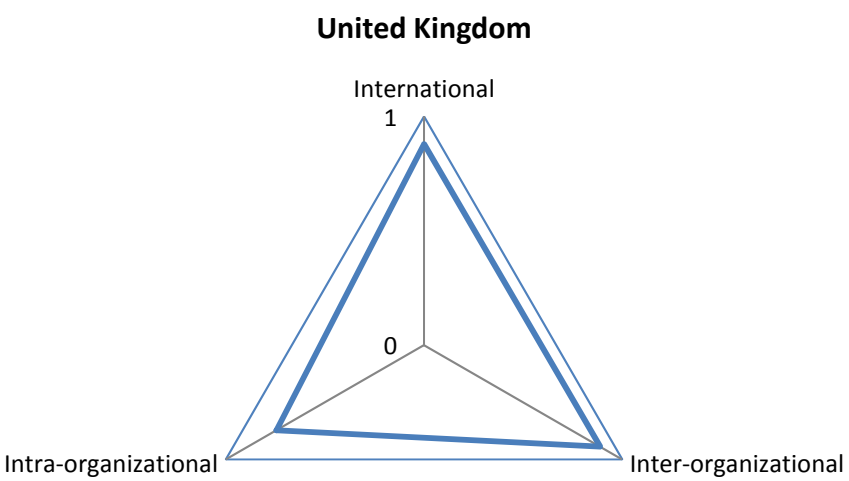
United Arab Emirates
Connectedness Index 2013: 0.635
Rank 2013: 30 of 138
Rank 2011: 46 of 132
Rank 2012: 38 of 132
Connectedness Profile 2013

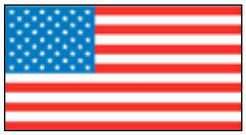
International Networks: 0.679
Inter-organizational Networks: 0.579
Intra-organizational networks: 0.648



United Kingdom
Connectedness Index 2013: 0.838
Rank 2013: 9 of 138
Rank 2011: 14 of 132
Rank 2012: 13 of 132
Connectedness Profile 2013

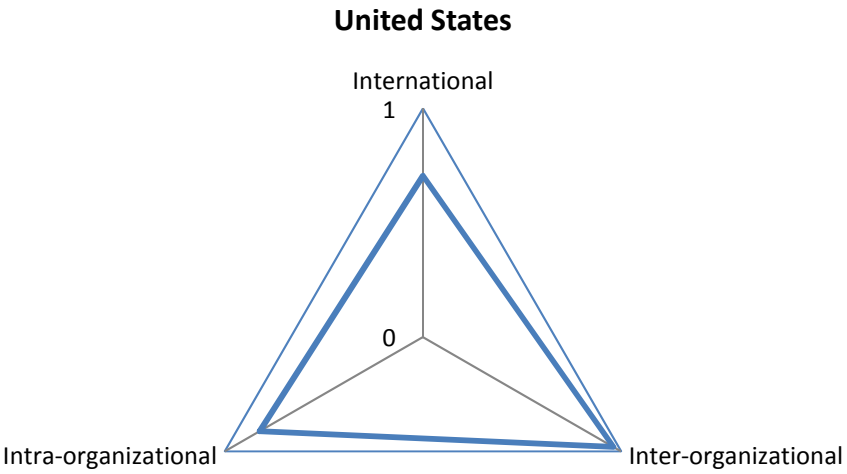
International Networks: 0.879
Inter-organizational Networks: 0.889
Intra-organizational networks: 0.745





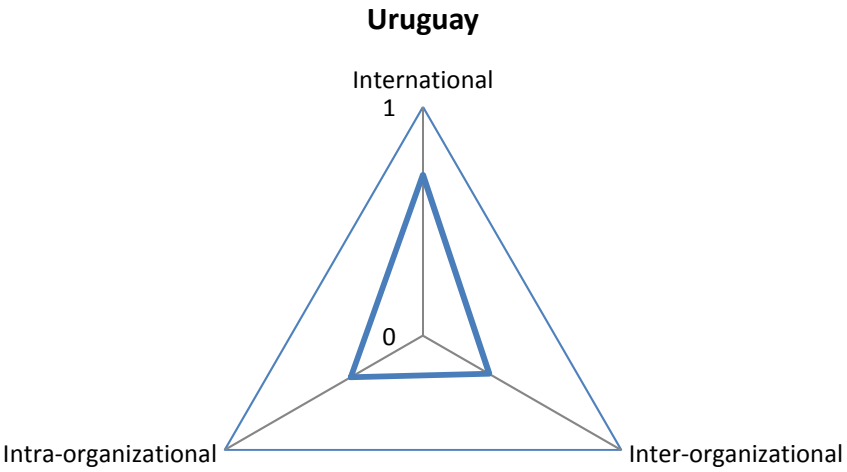
United States
Connectedness Index 2013: 0.830
Rank 2013: 10 of 138
Rank 2011: 4 of 132
Rank 2012: 10 of 132
Connectedness Profile 2013

International Networks: 0.705
Inter-organizational Networks: 0.961
Intra-organizational networks: 0.824



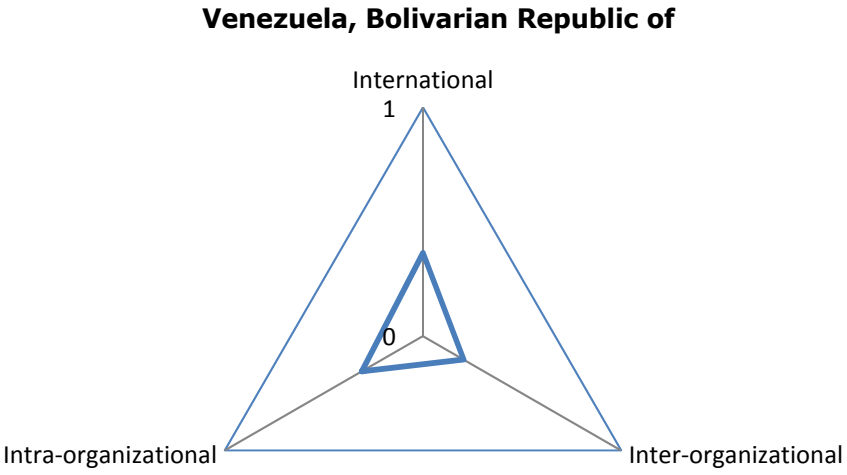
Uruguay
Connectedness Index 2013: 0.467
Rank 2013: 63 of 138
Rank 2011: 84 of 132
Rank 2012: 81 of 132
Connectedness Profile 2013

International Networks: 0.702
Inter-organizational Networks: 0.335
Intra-organizational networks: 0.364



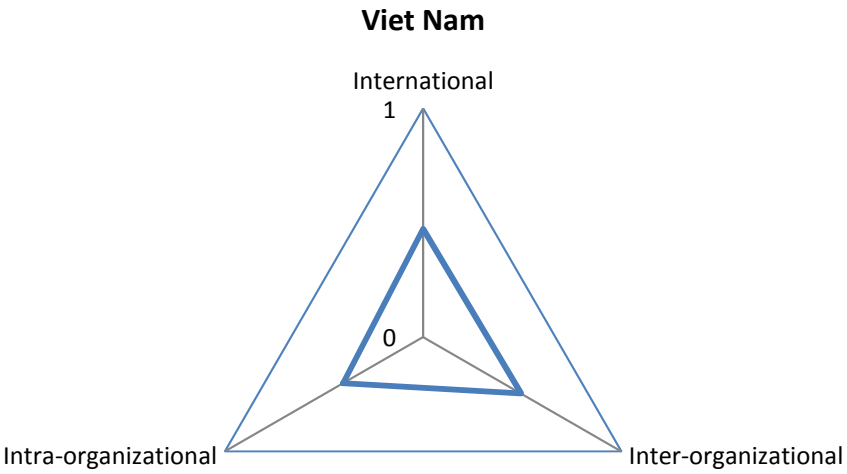
Venezuela, Bolivarian Republic of
Connectedness Index 2013: 0.292
Rank 2013: 123 of 138
Rank 2011: 113 of 132
Rank 2012: 116 of 132
Connectedness Profile 2013

International Networks: 0.363
Inter-organizational Networks: 0.205
Intra-organizational networks: 0.308



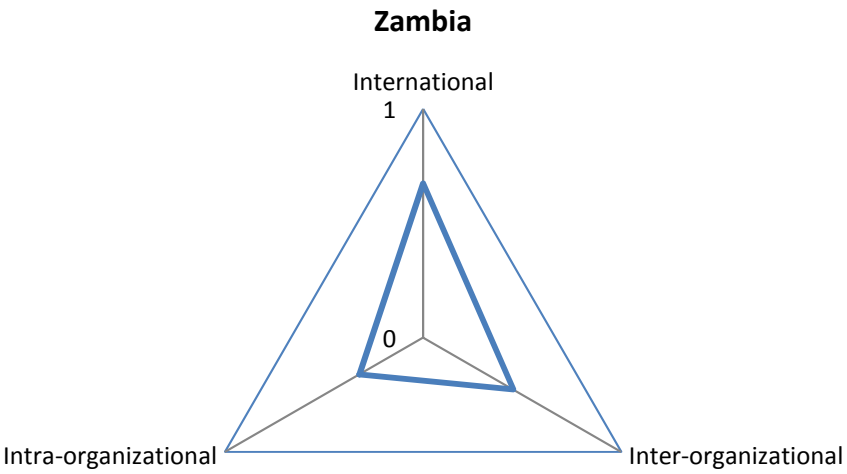
Viet Nam
Connectedness Index 2013: 0.457
Rank 2013: 67 of 138
Rank 2011: 67 of 132
Rank 2012: 54 of 132
Connectedness Profile 2013

International Networks: 0.472
Inter-organizational Networks: 0.494
Intra-organizational networks: 0.405



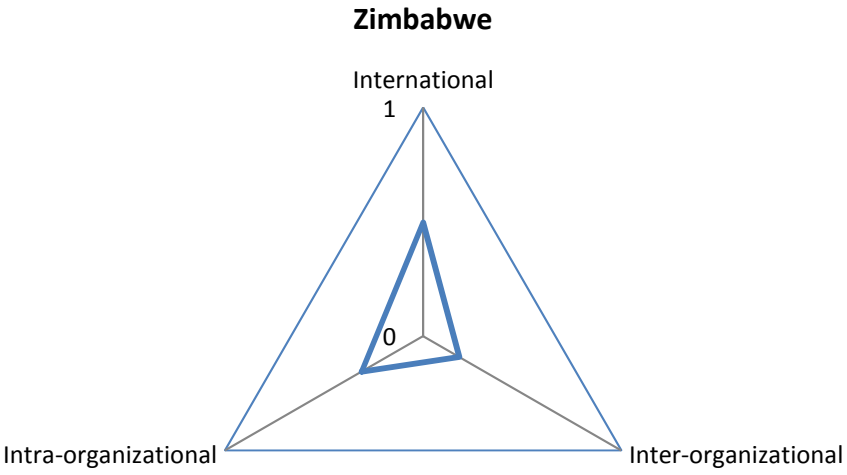
Zambia
Connectedness Index 2013: 0.484
Rank 2013: 56 of 138
Rank 2011: 69 of 132
Rank 2012: 78 of 132
Connectedness Profile 2013

International Networks: 0.674
Inter-organizational Networks: 0.456
Intra-organizational networks: 0.322



Zimbabwe
Connectedness Index 2013: 0.330
Rank 2013: 110 of 138
Rank 2011: 100 of 132
Rank 2012: 104 of 132
Connectedness Profile 2013

International Networks: 0.496
Inter-organizational Networks: 0.182
Intra-organizational networks: 0.311



Annex 3
The San José Declaration

As included in the United Nations General Assembly document A/C.2/68/5, and in the decision of the UNIDO Industrial Development Board IDB.41/Dec/4.

HIGH-LEVEL CONFERENCE OF MIDDLE-INCOME COUNTRIES

Challenges for Sustainable Development and International Cooperation in Middle-Income Countries: The Role of Networks for Prosperity

San José, Costa Rica, 12-14 June 2013

DECLARATION

We, the Ministers and Heads of Delegation of countries participating in the High-Level Conference of Middle-Income Countries on *Challenges for Sustainable Development and International Cooperation in Middle-Income Countries: The Role of Networks for Prosperity* in San José, Costa Rica, on 12-14 June 2013,

Recalling the outcomes of the United Nations major international conferences and summits on development cooperation with middle-income countries held in Madrid on 1-2 March 2007, San Salvador on 3-4 October 2007 and Windhoek on 4-6 August 2008,

Further recalling the relevant provisions of General Assembly resolutions, including resolutions 63/223, 64/208 and 66/212 on the cooperation with middle-income countries and resolution 67/225 on industrial development cooperation,

Recalling also the United Nations Conference on Sustainable Development, held in Rio de Janeiro, Brazil, from 20 to 22 June 2012, and General Assembly resolution 66/288 entitled "The future we want",

Further recalling resolution GC.14/Res.2 of the General Conference of the United Nations Industrial Development Organization on knowledge networking and knowledge sharing and decision IDB.40/Dec.2 of the Industrial Development Board of the United Nations Industrial Development Organization on knowledge networking and knowledge-sharing,

Having also considered the regional conferences on "Increasing the competitiveness of African middle-income countries", held in Cairo on 11-12 March 2008, and on "Middle-Income Countries Perspective on Sustainable Development in CIS, Eastern and Southern Europe", held in Minsk on 16-17 May 2013,

Taking note of the United Nations Industrial Development Organization report "Networks for Prosperity: Connecting Development Knowledge beyond 2015", launched in November 2012, and taking further note of the report's focus on the importance of South-South Cooperation and network governance among middle-income countries in economic development processes,

Reiterating the importance of international knowledge networking and the exchange of experiences and best practices for the achievement of local, regional

and international development goals and prosperity, particularly for middle-income countries,

Taking note of the outcomes of the Ministerial Conferences on Green Industry in Asia in Manila and Tokyo, and recalling resolution GC.13/Res.8 of the General Conference of the United Nations Industrial Development Organization and decision IDB.38/Dec.10 of the Industrial Development Board of the United Nations Industrial Development Organization on strengthening activities of the United Nations Industrial Development Organization in the fields of energy and environment,

Also taking note of the Green Industry Platform of the United Nations Industrial Development Organization, which has the potential to advance sustainable development through multi-stakeholder processes and to offer an effective instrument for strengthening sustainable industrial development, particularly in middle-income countries,

Recognizing the importance of industrial development that contributes to sustainable development and the attainment of internationally agreed development goals to achieve sustained prosperity for all,

Emphasizing the importance of better addressing issues related to industrial development in the framework of the global development agenda,

Being cognizant of the efforts in the United Nations in developing the post-2015 United Nations development agenda and of the need for continued follow-up on matters pertaining to the development of the middle-income countries,

Recognizing that, in the context of the three dimensions of sustainable development, energy, including access to, efficiency of, and new and renewable sources of energy, plays an important role,

Taking note of the reports A/64/253 and A/66/220 of the Secretary-General to the United Nations General Assembly on "Development cooperation with middle-income countries",

Recognizing that the group of middle-income countries consist of a wide range of diverse countries, which have made a contribution to international economic stability, while still facing specific challenges and needs in the context of sustainable development, respectively, in the economic, social and environmental areas,

Emphasizing that middle-income countries should have a greater voice and a more effective participation in the global decision-making processes, ncluding through intensified international cooperation with and among middle-income countries,

Reaffirming that middle-income countries have primary responsibility for their own development, and that their national efforts should be adequately supported by the international community with cooperation programmes, measures and policies aimed at expanding the development opportunities of middle-income countries, including the continuity of their eligibility to have access to financing for development, while taking into account their specific national needs and priorities,

Acknowledging that statistical averages based only on criteria such as per capita income do not reflect the actual particularities and development needs of middle-income countries, and recognizing that this type of classification fails to recognize the diversity among and within middle-income countries and disregards the multidimensional nature of development, and that these criteria fail to measure factors such as, unequal distribution of income, quality of life and the servicing of basic needs,

Highlighting that development cooperation strategies for middle-income countries, should be adapted to each particular context and help to preserve and sustain their economic, environmental and social achievements, and that such cooperation should not come at the expense of aid to least developed countries,

Recalling the need for a comprehensive, resource-oriented action plan on cooperation with middle-income countries, as called for in the Windhoek Ministerial Declaration on Development Cooperation with Middle-Income Countries, adopted on 6 August 2008,

Taking note of the important contribution of the Human Development Report as a relevant effort to address development needs beyond macro-economic indicators,

Further recognizing that international aid plays a major role in financing the development of developing countries, including middle-income countries, and that the effectiveness of any development cooperation activity should therefore be measured in terms of complementarity and supportiveness to national development strategies, priorities and interests, the additionality of knowledge and networks provided, and the increase in local capacity to mobilize additional and non-traditional resources or to attract other sources of investment,

Recalling the Nairobi outcome document of the High-level United Nations Conference on South-South Cooperation, held in 2009, and thus reaffirming our view of South-South cooperation as a manifestation of solidarity among peoples and countries of the South that contributes to their national well-being, national and collective self-reliance and the attainment of internationally agreed development goals, including the Millennium Development Goals,

Further recalling that South-South cooperation and its agenda have to be set by countries of the South and should continue to be guided by the principles of respect for national sovereignty, national ownership and independence, equality, non-conditionality, non-interference in domestic affairs, mutual benefit, complementarity, and solidarity,

Highlighting the positive role played by middle-income countries in advancing South-South cooperation, and underlining the importance of the United Nations system in promoting and supporting South-South and triangular cooperation,

Recognizing the efforts undertaken by the United Nations system in South-South and triangular cooperation, and the need to increase and enhance these efforts, including existing platforms and networks within the framework of the United Nations Industrial Development Organization, such as the Industrial Knowledge Bank,

Recognizing further that the significant diversity of middle-income countries requires individualized responses of the United Nations system to specific country needs and national priorities,

Taking into consideration that economic and industrial development cooperation is at the core of any middle-income country development strategy and is crucial to achieve inclusive and sustainable development,

Highlighting the key role of the United Nations Industrial Development Organization in advancing industrial development cooperation and sustainable development through services linked to industrial policy and strategy, institutional capacity development and enterprise level piloting,

Welcoming the initiative of the Government of Costa Rica to host the High-level Conference of Middle-income Countries in 2013, and recognizing the efforts and support provided by the United Nations Industrial Development Organization in facilitating the Conference,

1. *Agree* to promote international and national measures and cooperation that advance the following fields of mutual interest (a) Inclusive and equitable economic growth and prosperity at national and international levels, (b) Industrial advancement in the framework of sustainable development, (c) Finance and investment in middle-income countries;

2. *Highlight* that eradicating poverty is the greatest challenge facing the world today and an indispensable requirement for sustainable development, and in this regard are committed to free humanity from poverty and hunger as a matter of urgency;

3. *Request* the United Nations to develop a more robust and comprehensive conceptual framework regarding the current diversity among developing countries, that shall preserve the continuity of the current modalities of multilateral development cooperation to those countries and which should include, inter alia, equity, human development, industrialization, economic development, and environmental sustainability;

4. *Emphasize* that middle-income countries have made progress in education, health and social programmes, and such efforts require a higher commitment and need to be supported by the international community in order to sustain those achievements through the promotion of new and specialized international cooperation mechanisms for middle-income countries;

5. *Reaffirm* that international trade is an engine for development and sustained economic growth, and also reaffirm the critical role that a universal, rules-based, open, non-discriminatory and equitable multilateral trading system, as well as meaningful trade liberalization, can play in stimulating economic growth and development worldwide, thereby benefiting all countries at all stages of development;

6. *Call for* a successful, balanced, ambitious, comprehensive, inclusive, transparent and development-oriented outcome of the World Trade Organization Doha Development Round, in accordance with its mandate, aiming, inter alia, at resisting protectionism in all of its forms, enhancing market access for middle-income countries, and ensuring that special and differential treatment of

developing countries is operational and effective, and in this context, call for a facilitated accession of middle-income countries that have not yet done so to the World Trade Organization, taking into account their development, trade and financial needs;

7. *Recognize* the need to achieve sustainable development by promoting lasting, inclusive and equitable economic growth that contributes to the eradication of poverty, fosters social development, and creates greater opportunities for all;

8. *Call on* all countries to prevent, mitigate and adapt to the adverse effects of climate change under the principles of equity and common but differentiated responsibilities, while stressing that developed countries have played a large role in climate change;

9. *Emphasize* the key role of public-private partnerships and knowledge networking as an effective instrument for middle-income and other countries in meeting the sustainability challenges of public and private sector development, which should be taken into account in the elaboration of the post-2015 development framework;

10. *Recognize* the important role the United Nations development system can play in the context of South-South cooperation, and further recognize the important contribution of the United Nations Industrial Development Organization in the above-mentioned fields;

11. *Recognize* that knowledge networks on sustainability may be necessary but not sufficient, and stress that such networks need to be action-oriented, responsive to new and emerging challenges to development, and should find creative solutions for financing such action;

12. *Recognize further* the importance of the discussions and efforts generated within the various regional integration initiatives that constitute a complementary space where new proposals emerge to promote sustainable development from the South;

13. *Recognize* that a robust industrial transformation of economies of middle-income countries that contributes to sustainable development is one of the important tools in the achievement of internationally-agreed development goals, particularly poverty eradication, and in that context request the United Nations Industrial Development Organization to increase its efforts in supporting middle-income countries in adopting sustainable industrial development practices, including the provision of data and analytical inputs in these areas and the establishment of a special financial facility for middle-income countries in the framework of platforms, including the Green Industry Platform, to facilitate respective knowledge and governance networks, in order to mitigate the environmental impact and promote a quantitative leap with regard to the value added to products and companies;

14. *Recall* that most middle-income countries remain highly vulnerable to external shocks and in this regard underscore that regional integration processes among middle-income countries have the potential to offer alternatives to protect these countries from the effects of these shocks;

15. *Recognize* the importance of international cooperation in the fulfilment of internationally-agreed development goals, as well as the importance of

strengthening South-South and triangular cooperation as a complementary mechanism to find innovative ways to support development priorities as a supplementary engine for development of middle-income countries, including through peer learning, knowledge experience and technology sharing, and emphasize the critical importance of reflecting this in the context of the post-2015 development framework;

16. *Recognize* that middle-income countries need models of cooperation that best suit their development priorities and enhance their productive capacities, including through support to small and medium-sized enterprises and entrepreneurs, better access to financing for development, environmentally-friendly technology and capacity-building;

17. *Further request* the United Nations in general, and the United Nations Industrial Development Organization in particular, to promote the implementation of commitments of Official Development Assistance, and consider to establish strategic multi-sector alliances, including with private sector entities, that foster mechanisms of joint financing for comprehensive development programmes;

18. *Emphasize* the importance of ensuring access to finance especially for small and medium-sized enterprises and other industrial development actors in the context of industrial development efforts, further recognize that enhanced linkages between finance and productive activities can ensure sustainable industrial development beyond public programmes, request the United Nations Industrial Development Organization to bring these issues to the current international discussion on access to finance, while recognizing that enhanced support and increased financing and investment flows to middle income countries are pivotal to their economic growth and competitiveness, private sector development and integration into the global economy;

19. *Reiterate* the importance of linking, without conditionalities, financing, technology, capacity-building and national needs for sustainable development;

20. *Stress in this context* that grant-funded support plays a critical role in improving access to finance for industrial development through working closely with financial institutions and developing inclusive financial markets;

21. *Further request* the United Nations system, in particular the United Nations Industrial Development Organization, to address access to finance issues, especially for micro-, small- and medium-sized enterprises and other industrial development actors, including micro-industries and other forms of economic organizations, such as those that are popular- and solidarity-based, and support implementing sustainable mechanisms, including replenishment of multilateral development banks, to encourage financial institutions to expand their businesses for such non-traditional clients;

22. *Request* the United Nations development system, in particular the funds and programmes, as well as the regional commissions, to consider this Declaration in order to reflect the views of the middle-income countries, in particular, African countries, landlocked developing countries and small island developing states, in their future programme decisions, including in the context of the elaborations of the post-2015 United Nations development agenda;

23. *Request* the United Nations system, and the United Nations Industrial Development Organization in particular, to support and promote thematic dialogues related to the findings and outcomes of the Conference, focused on inclusive and equitable economic growth and prosperity, industrial advancement in the framework of sustainable development and financing for sustainable economic development, working towards a compact for sustainable development according to General Assembly resolution 66/288 entitled "The future we want", and other relevant United Nations documents;

24. *Further request* the United Nations system, and the United Nations Industrial Development Organization in particular, to follow the implementation of this Declaration and to report on its progress on a regular basis;

25. *Also request* the United Nations system, and in particular the United Nations Industrial Development Organization, to explore ways for the implementation of financial mechanisms that can lever up the policies and specific instruments of cooperation for middle-income countries;

26. *Call for* the establishment of a comprehensive resource-oriented United Nations Action Plan on cooperation with middle-income countries, that will address, inter alia, the needs of middle-income countries in the context of sustainable development and of the post-2015 development agenda, including the views of all stakeholders such as member states and regional and international organizations;

27. *Recognize* that establishing a United Nations system coordination mechanism on cooperation with middle-income countries will serve to streamline and improve United Nations system-wide activities related to cooperation with and among middle-income countries;

28. *Encourage* the United Nations Industrial Development Organization and other relevant organizations to actively participate in such a mechanism through their comparative advantages stemming from their mandates;

29. *Decide* to review the implementation of this declaration, as well as of other documents adopted at the ministerial conferences on middle-income countries, in particular the "Windhoek Ministerial Declaration on Development Cooperation with Middle-Income Countries", during a further conference of middle-income countries in 2016 and welcome offers to host this Conference in 2016;

30. *Reiterate* our support to the United Nations Industrial Development Organization as a vehicle for industrial development and as a key partner for developing and middle-income countries in their efforts to achieve economic development goals;

31. *Underscore* that timely follow-up and implementation of this Declaration will be crucial for its effectiveness, and request the Government of Costa Rica to coordinate such follow-up in collaboration with the United Nations Industrial Development Organization and other relevant international organizations.

Adopted in San José on 14 June 2013

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