



APPENDIX TABLE 5-47

Citations from international S&E publications, by region, country, or economy: 1996–2014

(Percent)

Region, country, or economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
North America	39.2	39.9	40.7	41.2	41.7	41.9	42.3	42.9	43.6	44.2	45.4	46.7	47.8	48.6	49.2	50.1	51.1	51.8	52.9
Canada	70.7	71.6	72.9	73.2	74.2	74.0	74.1	74.4	74.5	74.6	75.0	75.8	76.1	76.8	76.8	76.9	77.3	77.6	78.2
Greenland	95.3	93.3	89.7	95.3	69.6	89.4	79.7	87.2	82.1	95.6	91.7	91.2	93.5	81.1	89.9	89.7	91.7	90.2	91.1
Mexico	63.7	63.2	64.4	67.3	67.4	67.1	68.3	67.7	69.3	70.0	71.7	71.6	72.4	74.3	72.7	72.5	73.0	72.5	74.3
United States	42.3	43.2	44.0	44.5	45.0	45.2	45.6	46.3	47.0	47.7	48.8	50.1	51.1	51.8	52.4	53.2	54.2	54.7	55.7
Central America and Caribbean	75.0	75.0	74.2	75.5	75.0	74.4	75.3	76.0	78.4	79.9	81.3	82.9	83.6	83.5	84.0	85.4	84.7	85.4	86.2
Antigua and Barbuda	na	100.0	na	55.9	na	na	100.0	53.3	100.0	100.0	100.0	75.0	100.0	100.0	100.0	100.0	98.9	100.0	100.0
Bahamas, The	71.3	67.5	94.8	91.6	68.8	100.0	68.0	96.9	67.6	74.9	97.2	79.5	77.5	90.9	70.1	97.1	97.2	95.1	94.8
Barbados	93.8	85.9	73.7	69.9	90.0	85.1	90.7	82.9	88.3	94.3	90.2	92.6	94.8	95.4	84.0	91.6	86.4	91.1	95.9
Belize	94.6	95.8	100.0	100.0	94.4	100.0	85.8	94.9	100.0	95.9	99.2	99.3	87.1	96.1	99.7	98.2	98.4	97.5	97.4
Costa Rica	78.8	81.9	79.6	86.3	80.7	75.0	82.2	82.4	84.6	86.3	87.9	90.3	85.7	87.5	87.4	87.3	79.9	86.2	85.9
Cuba	56.3	51.8	57.3	58.2	58.5	65.1	63.5	64.8	69.3	71.4	73.5	76.3	79.7	75.9	77.5	77.6	76.6	76.8	80.8
Dominica	100.0	22.2	100.0	na	na	91.9	100.0	58.1	100.0	83.9	64.0	79.5	80.7	95.6	82.0	100.0	90.5	97.5	98.9
Dominican Republic	96.8	93.6	95.2	98.8	98.7	99.0	91.3	97.0	97.9	98.7	97.6	97.6	97.3	97.1	97.3	97.2	97.6	98.2	97.2
El Salvador	87.5	96.7	100.0	100.0	73.7	95.8	95.4	73.7	93.6	97.8	99.8	93.6	98.5	98.2	96.5	96.0	93.5	93.1	88.3
Grenada	63.9	100.0	100.0	100.0	100.0	100.0	100.0	94.8	94.4	99.1	92.9	89.3	98.3	97.4	98.5	96.8	99.4	97.1	95.4



Region, country, or economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Guatemala	78.9	89.4	90.7	98.1	96.9	98.2	90.0	87.1	93.6	95.7	95.5	93.5	92.9	91.6	89.6	90.3	94.4	89.8	92.1
Haiti	85.2	98.8	100.0	100.0	100.0	92.9	89.6	87.7	92.4	92.8	93.9	93.0	98.6	98.2	97.7	93.6	89.1	87.7	89.7
Honduras	99.4	90.2	79.2	82.1	96.0	99.2	95.5	99.7	92.5	95.3	99.5	94.0	94.5	96.6	94.3	93.2	95.8	95.2	89.6
Jamaica	87.7	86.8	89.4	81.2	71.7	75.2	62.4	65.2	65.3	83.6	85.6	80.3	71.4	74.6	81.9	82.2	87.7	90.6	88.0
Nicaragua	92.1	94.8	92.3	96.8	95.3	92.3	95.0	94.3	90.9	90.1	93.3	94.7	93.8	89.9	92.8	93.1	95.7	96.4	95.6
Panama	89.8	93.4	90.4	89.5	93.3	92.8	91.8	89.1	88.9	90.1	91.5	91.9	92.8	90.8	91.5	90.3	90.6	89.5	92.4
Puerto Rico	80.5	82.9	81.9	82.8	79.2	74.6	77.2	81.1	82.4	81.0	82.2	83.4	84.1	85.9	86.2	89.0	89.5	88.9	87.5
Saint Kitts and Nevis	100.0	100.0	100.0	99.3	na	na	100.0	na	100.0	96.5	100.0	100.0	87.6	98.2	97.7	94.4	93.8	91.2	97.7
Saint Lucia	76.4	100.0	94.4	100.0	na	100.0	na	100.0	100.0	100.0	97.3	100.0	na	na	99.1	96.5	100.0	100.0	100.0
Saint Vincent and the Grenadines	na	100.0	100.0	100.0	100.0	na	100.0	100.0	100.0	100.0	95.2	100.0	na	na	100.0	na	100.0	100.0	100.0
Trinidad and Tobago	78.1	73.3	81.2	72.3	79.0	72.0	88.2	79.7	87.0	79.0	78.4	83.0	87.4	82.6	84.0	87.3	89.4	89.3	88.7
South America	59.2	59.2	59.0	60.0	60.2	60.7	61.6	62.7	62.4	61.9	59.7	59.3	58.8	58.5	59.1	58.8	60.2	61.7	62.5
Argentina	60.0	62.6	62.5	65.4	66.4	70.1	70.4	72.7	73.0	73.6	73.9	74.0	72.2	72.5	73.3	72.4	74.2	74.5	75.3
Bolivia	89.4	77.8	76.6	83.6	80.2	90.4	93.6	91.6	91.7	91.1	88.6	89.0	91.7	92.2	93.3	88.0	91.1	94.9	94.0
Brazil	58.8	58.3	57.9	57.7	58.8	57.8	59.4	60.2	60.3	59.6	57.1	57.1	56.8	56.5	56.9	56.8	58.4	60.7	62.0
Chile	68.4	69.3	71.9	71.3	72.3	71.9	71.1	75.1	75.2	75.0	74.8	74.7	75.0	75.4	75.8	75.4	76.3	76.1	76.2
Colombia	86.2	76.6	77.1	81.6	75.9	77.4	76.5	72.7	75.0	77.0	77.1	77.0	75.7	74.9	74.2	74.3	75.8	75.5	75.6
Ecuador	88.4	92.0	88.9	90.5	65.2	56.9	72.6	85.8	91.1	86.2	86.4	84.6	83.0	86.1	86.4	90.3	85.4	85.7	80.7
Guyana	100.0	93.2	78.4	97.4	84.5	86.6	96.6	100.0	85.3	97.1	98.2	100.0	97.5	96.4	84.9	100.0	97.5	98.0	96.8



Region, country, or economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Paraguay	98.6	97.7	95.1	96.7	99.2	97.9	99.1	88.9	85.0	91.4	93.2	91.9	88.3	91.6	88.8	91.9	92.4	90.2	86.6
Peru	85.1	82.2	90.4	91.2	92.0	89.1	92.3	87.5	86.7	87.0	87.3	89.2	88.1	87.3	88.8	88.1	87.5	85.1	84.0
Suriname	53.1	88.4	83.4	91.7	100.0	94.4	98.0	91.9	98.8	88.4	95.7	98.5	97.7	100.0	84.3	90.3	86.5	90.4	97.9
Uruguay	77.6	75.2	80.2	83.5	83.4	79.3	79.7	80.2	81.3	82.2	81.7	81.3	81.5	79.4	81.0	81.9	81.4	81.9	82.6
Venezuela	70.1	67.8	70.7	70.8	68.9	73.2	72.0	78.5	77.9	79.0	78.4	79.9	79.5	81.6	80.7	80.0	82.9	83.7	84.3
Europe	34.0	35.2	36.1	36.9	37.6	38.4	39.2	39.7	40.0	40.4	40.8	41.2	41.4	41.8	41.8	42.1	42.7	43.2	44.0
EU	37.4	38.7	39.7	40.5	41.3	42.1	43.0	43.5	43.7	44.0	44.4	44.9	44.9	45.3	45.4	45.8	46.5	47.2	48.1
Austria	72.6	73.7	75.5	77.3	77.7	78.8	78.0	79.0	79.8	79.8	80.3	80.3	80.0	80.0	80.3	80.3	80.6	80.5	81.2
Belgium	72.8	73.7	75.2	76.4	77.3	77.3	77.0	78.1	77.8	78.7	78.9	79.3	79.8	80.4	80.5	80.4	81.3	81.8	82.2
Bulgaria	62.0	66.5	66.8	68.1	69.0	71.4	71.7	71.9	74.3	73.5	73.7	73.4	73.3	74.2	72.7	73.0	72.6	74.2	74.4
Croatia	55.1	55.5	57.1	58.2	58.3	59.7	60.1	61.4	63.2	63.1	67.8	65.7	65.0	66.1	68.9	71.1	70.9	73.8	75.6
Cyprus	77.7	80.9	78.5	79.8	81.9	82.1	82.7	80.7	81.4	78.2	80.3	79.1	80.5	79.9	80.6	80.3	80.9	83.4	84.1
Czech Republic	58.5	61.0	62.2	61.3	62.0	61.0	62.5	64.9	63.8	63.8	64.1	64.6	63.7	62.3	62.7	63.4	64.7	64.9	66.3
Denmark	72.2	74.5	74.9	76.5	77.4	77.3	77.7	79.3	79.8	80.3	80.8	81.1	81.2	80.6	80.5	79.2	80.2	80.2	80.6
Estonia	68.5	71.9	64.4	66.8	72.2	72.9	71.2	71.0	73.0	68.6	67.7	71.9	69.9	70.0	72.0	73.8	74.2	76.4	76.9
Finland	66.8	70.2	71.5	72.4	74.3	73.8	74.8	74.7	75.5	74.6	76.4	76.4	77.3	76.9	77.1	77.3	77.7	77.6	79.0
France	64.7	65.6	67.4	68.7	69.8	70.8	71.4	71.9	72.2	72.4	72.3	72.3	72.5	73.1	73.3	73.9	74.3	75.2	76.0
Germany	60.8	61.8	63.6	65.3	66.0	66.8	67.9	68.2	68.4	68.9	69.2	69.8	69.1	69.3	69.7	69.9	70.6	71.4	71.9
Greece	64.0	66.1	68.2	69.4	70.2	71.6	72.4	74.7	74.4	75.2	75.6	76.4	78.4	80.1	79.8	79.9	79.8	80.8	81.3



Region, country, or economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Hungary	68.0	65.8	67.1	68.9	69.6	70.5	72.9	73.8	74.4	73.7	75.0	74.3	75.5	76.1	74.9	75.9	75.6	74.4	74.5
Ireland	76.9	79.0	78.8	80.3	80.5	81.3	80.4	81.1	80.9	79.2	81.0	81.2	80.7	79.9	80.8	81.8	82.0	82.9	83.3
Italy	64.7	66.5	67.9	68.5	68.9	68.8	69.8	70.7	71.2	71.6	71.3	72.0	72.2	72.6	72.1	70.2	69.1	68.2	69.1
Latvia	58.6	56.8	71.7	65.8	67.9	67.6	70.1	79.4	76.3	79.4	73.5	70.0	67.3	62.1	55.1	54.8	60.8	68.9	63.8
Lithuania	64.1	57.4	59.3	67.0	70.1	61.7	61.4	64.6	61.5	60.9	59.5	55.0	44.3	45.9	49.9	58.0	64.6	66.0	67.9
Luxembourg	84.2	83.6	85.4	81.6	91.9	92.3	87.5	79.3	86.3	90.9	85.0	82.7	85.3	85.3	82.0	82.9	81.9	80.4	83.4
Malta	88.5	78.7	56.4	75.2	72.4	90.0	92.1	94.5	89.5	82.2	77.5	69.3	73.9	79.0	72.7	78.4	80.8	83.6	85.1
Netherlands	70.3	72.3	73.8	75.3	75.5	75.9	77.1	77.6	77.9	77.7	78.4	78.6	78.6	79.4	79.2	79.4	80.2	80.5	80.8
Poland	52.6	53.3	53.1	55.5	56.2	56.5	56.7	59.9	60.7	61.6	62.2	63.5	62.2	62.8	60.2	58.9	58.1	59.1	60.0
Portugal	63.7	67.6	66.0	65.2	69.0	67.5	69.3	70.7	71.4	70.4	71.0	71.7	72.5	73.3	73.2	73.3	74.1	74.5	76.1
Romania	53.1	59.0	59.2	58.4	61.8	59.6	64.2	63.4	64.9	61.7	60.9	58.4	51.0	50.4	53.7	57.2	59.7	61.7	64.1
Slovakia	56.5	57.0	57.2	61.8	58.2	62.8	64.6	66.4	67.6	66.3	69.7	71.0	70.5	69.8	67.4	66.2	64.2	62.6	63.1
Slovenia	59.3	56.7	57.3	62.3	64.2	64.7	65.7	69.5	69.0	68.9	73.1	72.9	71.1	73.0	73.7	73.6	75.7	76.0	78.0
Spain	60.2	61.8	64.2	64.5	65.2	66.4	66.7	67.8	67.8	67.7	68.4	69.2	69.7	70.6	70.7	71.7	73.1	73.7	75.2
Sweden	68.9	71.4	72.0	73.9	75.2	75.8	77.0	77.2	77.6	78.3	78.8	79.6	79.6	79.8	80.0	79.2	79.7	80.0	80.9
United Kingdom	63.8	65.6	66.6	67.6	69.0	70.2	71.6	72.1	72.6	73.3	73.4	74.1	74.7	75.2	75.3	75.8	76.4	76.6	77.2
Other Europe	65.4	66.3	67.2	68.1	69.0	69.1	69.1	68.9	70.1	70.6	72.2	72.1	72.8	72.4	71.6	71.1	70.9	69.4	68.4
Albania	72.9	90.9	95.0	91.8	93.8	94.4	88.3	84.9	97.9	89.3	96.8	83.4	92.1	90.3	86.9	83.9	80.5	78.3	87.7
Andorra	na	100.0	100.0	na	na	100.0	na	98.5	100.0	96.1	88.4	100.0	99.2	99.0	99.8	85.0	97.1	99.2	88.8



Region, country, or economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Belarus	53.6	55.9	58.5	61.5	65.0	66.7	62.9	59.8	62.2	66.9	68.2	73.3	75.5	74.0	75.6	73.5	70.4	69.4	70.8
Bosnia and Herzegovina	77.7	93.4	74.3	81.2	79.5	92.1	87.3	84.3	86.1	78.3	80.6	79.2	73.1	78.9	80.5	83.7	84.0	85.7	85.7
Holy See (Vatican City)	100.0	86.5	na	na	na	na	na	na	100.0	na	na	100.0	100.0	100.0	95.3	99.2	85.8	100.0	91.0
Iceland	81.0	85.6	82.0	86.7	82.6	84.2	86.5	84.3	84.1	87.3	87.1	89.9	89.2	88.2	84.9	83.7	84.6	85.2	84.6
Kosovo	na	na	na	na	na	na	na	na	na	na	na	na	78.6	90.2	85.4	88.5	89.8	89.3	84.1
Liechtenstein	58.8	42.3	46.3	73.7	83.6	80.9	61.6	70.2	86.2	78.0	83.4	85.2	84.6	94.8	93.4	94.8	91.3	89.7	87.6
Macedonia	83.6	72.5	59.3	55.2	56.8	77.1	70.7	74.9	86.1	85.0	83.3	80.2	78.6	78.8	74.6	79.1	73.9	70.1	77.9
Moldova	69.6	70.2	79.5	74.3	64.4	76.2	76.5	79.9	85.0	79.9	85.6	79.1	83.5	82.5	82.5	72.8	79.2	80.4	73.7
Monaco	66.0	93.0	82.0	82.5	81.8	86.6	82.0	72.9	87.3	90.8	77.8	89.6	85.7	86.8	87.1	90.9	94.3	94.6	92.9
Montenegro <sup>a</sup>	na	na	na	na	na	na	na	na	na	na	na	77.2	70.8	68.6	66.5	71.1	74.5	66.0	62.7
Norway	66.5	68.4	69.4	71.4	73.8	74.7	75.6	76.3	77.1	75.5	76.6	76.3	77.6	78.2	77.4	77.4	77.7	78.6	79.0
Russia	50.8	50.2	53.1	54.7	54.9	54.1	55.3	54.9	57.1	58.2	61.7	62.1	61.7	58.9	57.7	54.3	53.0	47.1	43.4
San Marino	100.0	100.0	100.0	100.0	100.0	100.0	na	na	100.0	100.0	100.0	na	100.0	95.0	89.4	89.4	94.1	97.6	93.9
Serbia <sup>a</sup>	na	na	na	na	na	na	na	na	na	na	na	64.0	64.5	64.6	62.9	62.3	67.7	70.5	74.0
Serbia and Montenegro <sup>b</sup>	54.9	54.9	56.3	63.2	61.9	64.8	64.8	63.7	64.2	82.0	96.9	na	na	na	na	na	na	na	na
Switzerland	77.6	78.5	79.0	79.3	80.2	81.0	81.2	81.1	81.4	81.6	82.3	82.3	82.6	82.5	82.6	82.7	82.7	82.9	83.7
Turkey	57.1	59.2	60.3	63.0	63.4	62.6	61.7	62.2	64.4	65.6	67.2	68.7	69.6	70.1	69.3	69.9	70.3	70.2	70.7
Ukraine	51.0	54.0	51.1	52.5	52.9	51.8	52.9	56.5	56.1	55.1	58.8	57.0	60.8	58.1	59.6	57.1	56.2	55.7	56.0
Middle East	72.3	72.6	73.7	74.1	74.2	74.3	74.0	74.9	73.5	72.4	72.0	70.8	70.1	68.9	67.7	68.0	68.1	68.5	68.2



Region, country, or economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Armenia	63.2	64.0	70.5	73.6	61.3	71.9	66.3	65.6	69.0	71.3	69.6	72.7	66.8	62.8	58.3	55.5	60.5	58.0	60.0
Azerbaijan	68.3	66.1	82.9	82.9	63.4	60.9	62.2	63.1	54.2	62.3	74.9	79.0	78.6	73.2	71.4	71.0	71.8	69.5	72.7
Bahrain	73.7	68.9	52.4	80.7	66.1	74.1	92.0	66.5	81.3	75.4	83.1	89.2	87.9	85.8	85.5	87.4	89.3	90.4	91.1
Gaza Strip	89.2	71.9	80.2	49.9	28.2	76.5	49.0	51.0	78.6	67.5	75.7	75.2	79.8	84.6	74.4	69.2	66.9	76.7	64.5
Georgia	72.5	71.5	70.6	82.0	86.8	82.7	76.4	73.1	79.9	76.2	81.7	75.0	77.3	79.2	80.6	75.6	80.2	73.2	83.3
Iran	55.1	47.3	51.8	51.9	47.5	46.1	47.4	52.9	50.3	50.5	52.3	55.3	55.8	56.4	57.0	57.4	58.7	60.2	59.8
Iraq	68.3	51.9	85.4	77.7	91.5	66.6	80.8	85.1	80.3	76.3	82.3	75.7	83.2	82.2	81.9	80.0	86.2	86.5	83.3
Israel	74.5	74.9	75.7	76.5	77.0	77.7	78.2	79.5	79.2	79.8	80.7	80.7	81.2	82.0	81.7	82.5	82.4	82.8	82.5
Jordan	56.7	62.8	69.6	67.7	70.6	71.0	71.7	74.7	78.6	78.0	81.3	79.1	78.0	83.6	83.9	82.3	81.6	81.4	79.5
Kuwait	57.4	61.6	61.2	66.2	75.7	71.5	74.8	77.2	77.0	78.2	76.4	81.4	77.6	81.4	81.2	82.8	82.9	84.3	87.5
Lebanon	72.7	75.5	83.6	80.9	79.5	81.5	82.5	82.2	83.1	86.2	86.9	87.6	87.5	87.2	85.7	85.2	85.3	86.9	86.7
Oman	76.9	79.9	79.6	79.8	76.1	69.5	75.0	79.4	75.3	75.7	79.1	80.0	84.9	81.9	83.2	80.2	79.7	82.3	82.6
Qatar	91.2	85.1	98.7	95.6	84.9	90.7	82.3	86.3	80.7	82.9	87.4	89.2	85.9	85.9	85.5	87.1	83.2	86.0	87.1
Saudi Arabia	62.4	66.1	72.3	71.9	74.8	72.6	71.6	77.5	76.2	79.5	80.7	80.5	81.5	81.0	78.6	79.0	79.4	79.8	81.3
Syria	79.5	65.5	70.0	68.4	74.1	71.9	80.1	73.1	69.6	78.0	85.0	79.3	81.1	77.6	79.2	82.1	85.6	89.2	79.4
United Arab Emirates	50.4	60.9	73.2	76.2	74.2	77.6	73.8	71.2	77.8	76.5	82.1	84.0	86.8	86.0	84.2	84.0	80.5	81.1	85.5
West Bank	88.4	76.1	80.6	75.5	79.8	82.7	90.4	84.0	79.8	82.7	78.6	80.2	64.2	66.3	75.1	84.6	92.2	90.7	72.7
Yemen	95.9	49.8	83.4	74.9	81.4	79.4	85.6	89.1	83.5	87.1	89.5	93.9	90.5	92.0	90.4	89.2	90.3	92.0	92.1
Africa	62.7	61.9	66.5	65.7	66.0	67.1	66.7	68.6	68.7	69.7	69.3	70.3	70.6	71.3	70.7	70.7	70.6	69.7	69.7



Region, country, or economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Algeria	77.6	73.1	72.2	64.2	69.6	67.4	69.7	66.2	72.8	68.7	73.1	72.3	76.8	79.5	78.8	77.0	75.7	72.8	73.4
Angola	58.9	100.0	100.0	98.6	99.8	100.0	87.8	98.3	97.7	99.9	91.9	97.5	95.8	96.1	97.0	96.2	91.2	95.3	87.2
Benin	76.6	70.3	75.0	87.1	77.6	76.0	84.6	83.1	87.0	87.7	87.6	80.0	81.8	78.2	80.1	84.2	81.0	83.8	86.6
Botswana	67.2	74.3	61.7	84.2	74.3	68.4	65.9	77.0	80.8	83.7	81.9	89.5	85.3	88.8	90.4	90.8	93.4	89.8	86.9
Burkina Faso	77.3	77.5	86.0	90.7	89.0	85.0	79.2	89.6	91.6	88.1	87.7	91.8	87.0	87.3	86.1	86.7	88.4	89.8	91.6
Burundi	96.2	78.6	100.0	97.4	100.0	89.1	91.2	97.7	98.2	97.6	97.7	97.7	99.0	96.7	99.3	96.7	94.5	88.2	93.7
Cameroon	75.7	73.6	73.3	83.0	82.6	81.7	76.0	79.2	80.3	76.0	76.7	81.5	80.7	82.4	83.4	81.4	80.8	78.5	77.5
Cape Verde	93.3	100.0	88.9	98.8	na	100.0	na	96.5	na	100.0	100.0	89.7	97.6	98.2	99.0	100.0	95.5	97.8	97.1
Central African Republic	87.8	99.2	88.6	99.3	97.0	99.6	96.5	79.9	78.1	92.3	95.9	98.5	91.4	97.5	90.8	96.6	94.8	94.1	97.6
Chad	100.0	100.0	96.1	100.0	100.0	100.0	99.6	90.2	94.5	93.6	98.1	95.0	89.8	96.5	97.9	98.8	97.6	92.2	97.8
Comoros	na	na	na	100.0	100.0	100.0	na	100.0	91.7	96.7	na	97.9	100.0	100.0	96.0	98.1	100.0	100.0	85.7
Congo, Democratic Republic of the	96.1	87.9	89.7	89.9	98.3	95.2	90.7	92.4	92.5	84.4	94.2	84.1	91.5	94.8	90.2	93.2	90.3	88.6	89.8
Congo, Republic of the	91.8	91.3	95.9	96.8	86.8	89.2	92.1	88.8	91.2	92.5	92.5	92.2	91.7	93.4	96.8	91.6	93.1	97.3	88.6
Côte d'Ivoire	91.0	76.1	82.1	89.8	89.1	85.1	84.5	83.8	93.7	87.5	91.7	88.4	84.6	85.9	86.0	88.9	89.4	88.3	89.2
Djibouti	100.0	100.0	100.0	100.0	na	100.0	na	na	100.0	99.1	100.0	100.0	98.3	95.7	91.6	88.2	97.1	96.0	96.5
Egypt	58.7	58.0	62.2	62.6	61.4	64.2	64.5	69.3	70.7	72.8	74.0	76.5	77.1	77.9	76.9	78.2	78.4	76.9	75.9
Equatorial Guinea	93.9	97.6	100.0	92.9	na	100.0	46.7	95.5	89.4	100.0	80.8	72.6	96.6	97.1	100.0	94.1	95.5	91.4	93.2
Eritrea	100.0	100.0	95.8	98.1	93.7	56.5	81.8	86.2	79.3	92.6	95.6	95.3	98.6	98.6	99.7	98.7	99.4	97.9	98.1
Ethiopia	76.8	74.8	79.6	83.6	77.9	77.6	71.8	80.8	85.8	89.6	82.9	79.6	79.4	81.3	80.2	78.7	79.9	78.6	80.0



Region, country, or economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Gabon	84.6	81.7	90.3	87.3	90.1	89.6	91.8	91.6	88.3	89.3	88.9	92.0	91.2	92.2	92.2	95.7	90.2	85.7	94.7
Gambia, The	88.2	82.0	92.7	90.0	91.5	89.3	93.7	91.9	87.9	92.0	87.4	93.4	91.1	92.6	91.4	94.4	94.6	93.9	92.1
Ghana	80.4	81.9	89.2	84.7	85.6	87.6	89.7	88.8	88.2	87.0	88.9	89.9	89.4	89.6	85.7	86.1	84.0	85.6	83.1
Guinea	96.3	96.6	99.2	96.0	99.3	99.6	91.3	99.9	99.3	97.9	96.6	94.7	99.4	96.8	96.9	97.2	94.6	92.5	96.8
Guinea-Bissau	95.3	82.6	79.9	94.2	96.9	81.3	86.1	80.2	81.6	78.7	66.2	90.5	90.7	91.8	86.2	86.8	79.1	83.4	83.4
Kenya	79.4	78.0	78.9	82.7	82.7	84.5	85.4	83.3	85.5	85.8	83.3	85.3	85.9	86.3	88.4	86.7	88.1	87.2	85.9
Lesotho	81.3	60.0	61.9	100.0	100.0	98.3	100.0	99.5	100.0	94.6	91.9	98.7	98.5	98.3	99.3	97.3	92.6	98.7	91.6
Liberia	100.0	100.0	na	na	100.0	100.0	98.6	77.8	87.8	100.0	100.0	100.0	98.6	100.0	98.2	90.8	89.8	96.5	98.7
Libya	59.1	94.2	96.4	83.6	93.3	97.6	88.8	92.1	85.6	83.9	92.7	89.6	88.9	83.7	96.2	96.0	93.1	92.5	92.2
Madagascar	73.4	85.0	79.6	87.2	84.0	80.9	84.6	91.2	83.5	80.9	76.8	85.7	86.8	91.6	87.5	88.8	92.1	88.9	87.1
Malawi	85.3	82.4	81.9	90.7	87.6	80.9	80.7	82.5	85.0	83.1	82.1	87.6	88.7	91.5	90.3	89.7	89.9	90.9	89.4
Mali	84.9	93.6	93.6	96.6	96.9	95.8	91.9	93.9	88.6	90.1	92.2	93.1	89.9	92.9	92.6	92.9	94.6	95.6	94.4
Mauritania	86.2	100.0	82.5	96.0	99.1	95.4	99.3	99.4	96.4	97.1	97.7	98.1	100.0	94.4	96.9	94.6	92.7	90.9	93.1
Mauritius	71.9	66.8	86.6	69.3	71.9	81.9	86.1	84.1	78.5	87.1	86.4	87.9	86.4	82.3	87.4	88.0	76.2	88.0	84.6
Morocco	76.5	67.8	69.7	62.5	64.5	65.6	69.9	73.4	72.9	77.9	77.7	79.1	80.8	80.9	73.9	73.1	71.1	72.5	70.4
Mozambique	95.9	79.8	93.9	94.7	81.2	87.6	90.3	92.1	82.4	91.8	91.8	95.6	87.6	90.7	91.6	91.9	92.8	90.7	92.2
Namibia	80.8	78.8	59.9	61.7	67.3	58.1	66.8	71.1	85.8	92.2	93.3	89.2	93.9	92.8	91.0	91.7	90.9	88.4	93.1
Niger	92.9	83.1	85.1	91.7	90.2	96.9	91.8	84.5	92.2	78.3	89.7	97.0	95.4	95.4	96.6	95.7	90.4	90.0	95.4
Nigeria	56.4	59.4	65.1	69.2	70.8	68.7	69.3	67.1	66.8	67.5	67.1	67.7	69.6	70.2	73.8	76.2	75.0	73.5	74.6





Region, country, or economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Rwanda	89.4	94.1	97.0	98.3	99.5	100.0	100.0	97.1	93.3	91.2	95.4	94.1	97.3	95.7	92.6	95.1	91.7	90.4	88.4
São Tomé and Príncipe	90.6	na	100.0	na	88.3	82.8	85.5	96.1	100.0	na	88.7	94.2	na	95.8	97.5	na	100.0	100.0	98.4
Senegal	77.8	68.0	75.2	83.0	88.3	86.7	79.4	85.6	85.3	92.2	87.7	93.7	90.8	89.4	91.5	86.4	86.2	84.4	87.8
Seychelles	92.4	100.0	91.3	98.0	93.4	100.0	62.2	49.7	99.8	93.5	92.8	94.7	96.1	96.3	94.3	93.4	95.3	93.0	88.9
Sierra Leone	93.9	62.4	94.9	100.0	100.0	100.0	100.0	100.0	100.0	99.7	100.0	94.5	95.6	97.7	83.1	82.2	87.8	93.7	94.8
Somalia	100.0	100.0	na	100.0	100.0	na	100.0	na	100.0	na	100.0	na	100.0	100.0	99.2	86.5	99.1	87.6	97.3
South Africa	61.4	62.4	68.2	65.1	65.8	69.1	67.9	69.9	69.9	71.1	70.4	71.4	72.1	72.8	71.9	70.8	71.8	71.9	72.5
South Sudan	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	99.8	99.0	71.2	99.0
Sudan	77.5	64.4	85.0	89.5	85.9	87.5	78.8	82.5	68.5	75.3	80.6	84.4	83.5	79.2	81.3	80.4	85.3	89.1	89.4
Swaziland	87.1	67.3	100.0	100.0	99.5	100.0	87.5	94.3	87.9	91.2	99.3	91.0	86.1	96.0	94.4	98.2	99.4	96.8	98.9
Tanzania	83.1	81.8	88.2	80.0	87.6	88.5	87.0	89.3	85.7	87.5	86.6	87.1	87.6	88.1	85.9	87.4	84.8	86.0	86.1
Togo	61.3	90.3	62.6	88.3	88.3	78.1	94.6	88.4	86.7	85.2	92.0	84.6	83.7	93.9	93.5	87.8	89.5	88.7	89.1
Tunisia	64.8	70.7	63.3	71.0	68.7	72.2	70.2	73.6	69.7	70.4	72.1	72.6	72.3	72.7	74.8	76.7	73.3	72.0	72.0
Uganda	86.9	81.6	79.9	89.5	86.3	88.3	85.1	89.2	87.2	89.5	88.2	87.5	87.5	85.6	86.8	87.2	87.9	85.6	87.0
Western Sahara	na	na	na	na	na	na	na	na	na	na	na	na	na	100.0	100.0	na	na	na	na
Zambia	87.9	88.3	92.4	88.8	94.8	90.9	90.6	87.8	91.6	90.1	86.9	92.2	91.1	91.8	90.5	91.6	92.9	89.5	92.0
Zimbabwe	71.9	75.6	80.0	74.8	82.9	86.4	84.5	84.1	81.8	86.4	85.2	90.7	93.1	92.2	89.9	86.6	79.9	85.6	86.0
Asia	47.7	49.3	49.9	49.3	48.4	47.4	45.9	45.0	43.9	42.3	41.1	39.6	38.8	38.3	37.3	35.9	34.6	33.5	32.3
Afghanistan	na	na	100.0	100.0	100.0	na	100.0	83.6	100.0	95.7	98.6	92.7	92.5	92.2	98.2	93.7	93.7	95.7	92.5



Region, country, or economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Bangladesh	70.5	69.0	79.0	79.0	74.0	76.7	76.4	79.1	82.1	82.2	83.1	79.5	79.2	79.6	78.3	76.8	78.1	74.8	75.9
Bhutan	25.0	92.8	58.3	100.0	70.0	na	79.1	100.0	82.6	94.2	91.5	95.6	89.6	90.0	94.5	82.5	90.3	96.2	92.3
Brunei	82.1	79.7	74.8	82.4	81.3	70.3	77.1	81.2	79.1	88.5	95.1	89.8	94.2	86.0	91.8	85.0	82.7	71.4	72.9
Burma	37.7	100.0	78.8	95.0	90.2	83.9	84.9	97.6	90.7	94.9	96.0	93.5	88.7	96.6	97.8	97.4	93.2	95.3	90.5
Cambodia	94.9	91.1	90.9	96.1	97.0	99.2	81.8	82.3	92.5	93.3	93.0	90.0	89.2	93.9	92.6	92.3	90.0	88.3	91.7
China	51.6	51.4	49.9	47.9	45.2	45.1	43.5	43.8	42.2	41.2	41.4	40.9	41.0	41.9	41.5	40.3	39.4	38.6	37.7
India	48.5	49.5	52.4	53.0	55.7	55.2	56.5	58.5	58.9	59.8	60.5	62.4	63.3	62.8	61.2	61.4	60.9	61.1	61.9
Indonesia	83.1	78.7	76.8	85.8	86.9	86.4	88.6	89.7	91.1	89.8	89.1	88.4	87.4	86.6	83.9	80.3	81.3	79.0	71.4
Japan	52.6	55.1	56.5	57.4	57.8	58.0	58.7	59.8	60.4	60.8	61.7	62.1	62.9	63.4	64.0	64.5	65.4	66.5	67.0
Kazakhstan	74.5	66.7	58.6	71.8	60.8	59.6	53.7	69.0	76.7	75.0	79.8	76.6	78.6	73.5	77.6	62.2	64.8	66.5	67.5
Kyrgyzstan	99.0	73.1	54.1	68.3	63.1	88.7	75.8	85.4	86.6	98.7	88.4	91.4	85.8	92.0	95.3	90.8	87.5	94.9	91.9
Laos	86.2	81.5	88.4	100.0	87.3	86.9	97.5	82.6	92.5	84.3	91.2	89.2	94.0	88.9	90.9	88.4	91.6	91.8	91.2
Malaysia	66.8	68.7	71.8	68.4	68.4	69.8	70.4	74.5	76.2	76.0	72.6	68.1	65.5	65.0	62.3	62.9	65.2	67.0	69.5
Maldives	92.7	na	100.0	100.0	na	90.0	na	100.0	100.0	100.0	97.1	98.9	98.2	99.9	99.2	95.4	78.5	94.8	96.6
Mongolia	93.4	92.4	84.3	88.1	88.8	85.6	88.6	95.3	91.9	93.9	94.1	93.1	91.9	92.8	93.8	91.9	90.9	93.4	93.9
Nepal	82.0	80.4	79.6	87.3	86.0	85.1	86.7	88.1	82.6	82.6	88.4	86.7	85.3	88.1	87.4	85.3	87.2	86.5	87.4
North Korea	100.0	100.0	100.0	98.2	99.6	99.5	100.0	100.0	99.6	99.2	99.3	99.2	98.4	99.3	98.4	93.5	97.1	99.4	91.6
Pakistan	61.5	56.7	62.9	57.3	60.5	62.3	54.3	61.0	59.5	61.2	58.2	60.8	59.5	62.7	63.4	63.8	62.6	67.1	67.3
Papua New Guinea	69.5	85.4	71.2	80.8	86.9	71.9	87.3	88.7	92.3	92.9	92.7	94.2	91.6	91.7	89.1	90.2	87.6	94.0	88.6



Region, country, or economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Philippines	74.6	77.3	77.4	83.5	75.0	79.2	86.0	85.7	86.9	86.0	86.3	84.6	84.1	84.7	83.1	83.3	83.5	83.9	81.5
Singapore	65.9	63.4	69.5	66.8	67.6	69.6	70.7	71.7	74.5	77.2	77.8	79.1	78.8	79.5	80.9	81.2	83.3	83.6	84.8
South Korea	56.6	57.9	58.8	61.3	63.5	63.1	63.4	65.5	66.6	67.0	67.0	66.8	67.7	69.5	69.6	70.0	71.8	71.4	72.0
Sri Lanka	71.8	65.8	77.9	76.3	74.5	79.2	80.8	83.2	84.6	83.7	83.3	84.7	87.4	86.6	86.3	83.8	83.1	84.9	84.0
Taiwan	56.5	60.2	61.2	62.5	63.9	65.0	64.6	66.8	67.4	66.6	67.1	68.1	69.1	69.3	69.5	71.4	72.9	75.1	76.8
Tajikistan	74.8	70.6	100.0	66.2	47.1	89.3	63.1	76.4	71.3	86.1	95.2	94.8	91.6	82.4	82.1	82.7	93.4	92.1	89.6
Thailand	74.5	69.9	70.5	75.4	75.0	72.3	76.2	77.6	77.6	77.2	75.9	75.6	75.3	75.2	75.4	76.4	77.4	77.7	78.4
Timor-Leste	na	na	na	na	na	na	na	100.0	na	54.4	92.1	100.0	99.4	94.5	99.0	97.6	77.5	93.1	96.1
Turkmenistan	100.0	87.4	90.7	94.4	95.2	100.0	100.0	95.8	88.1	92.5	94.6	93.1	100.0	92.4	90.3	88.4	87.7	88.0	84.2
Uzbekistan	72.7	58.7	57.5	80.4	72.4	59.6	64.4	71.1	78.3	73.0	77.1	80.5	79.1	81.1	74.2	71.7	67.3	69.1	74.9
Vietnam	76.6	74.0	74.4	82.0	85.4	84.1	84.6	86.5	86.6	87.6	82.5	81.3	80.3	78.6	79.7	81.4	78.2	77.6	77.4
Australia and Oceania	64.0	65.3	68.0	68.2	69.4	69.7	71.2	70.7	71.1	70.8	71.1	71.4	71.9	71.8	72.0	71.6	71.9	72.6	73.7
Australia	65.3	66.6	69.0	69.6	70.3	71.0	72.3	71.5	71.9	71.7	72.0	72.3	72.8	72.7	72.9	72.3	72.8	73.3	74.5
Cook Islands	98.0	na	100.0	100.0	na	na	100.0	na	na	na	100.0	100.0	na	100.0	97.1	98.0	93.8	95.6	99.1
Fiji	95.7	89.3	79.3	84.2	76.8	76.5	86.8	85.4	75.9	78.0	78.5	77.2	90.4	87.6	91.0	89.3	83.3	90.6	88.1
Kiribati	na	na	na	na	na	100.0	na	100.0	na	na	100.0	100.0	na	na	100.0	na	na	95.8	100.0
Marshall Islands	78.6	73.7	100.0	100.0	100.0	100.0	na	100.0	100.0	100.0	94.4	100.0	100.0	92.5	91.5	100.0	100.0	100.0	98.6
Micronesia, Federated States of	100.0	100.0	53.1	100.0	97.1	93.0	na	98.6	99.5	100.0	93.8	77.9	83.8	99.9	53.8	5.0	84.6	92.8	99.2
Nauru	na	na	100.0	na	na	na	na	na	100.0	na	na	na	na	100.0	na	100.0	na	94.3	94.8



Region, country, or economy	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
New Zealand	67.2	68.5	72.4	70.9	74.4	73.6	74.8	76.9	76.7	77.6	77.4	77.1	77.7	77.6	77.6	77.9	78.2	79.0	79.6
Niue	na	na	na	na	na	na	na	na	na	na	100.0	100.0	na	na	na	na	na	na	100.0
Palau	100.0	100.0	100.0	na	100.0	93.4	99.5	90.6	98.7	88.7	97.5	90.4	99.6	93.3	100.0	82.2	97.4	87.9	96.6
Samoa	na	100.0	100.0	97.1	50.0	85.2	100.0	89.3	68.7	100.0	98.8	99.1	97.5	96.9	99.8	97.8	97.4	98.0	99.1
Solomon Islands	82.8	41.9	62.3	79.3	82.8	94.8	86.7	96.4	99.2	92.9	99.7	98.6	97.6	94.5	93.2	96.6	87.0	92.4	93.0
Tonga	na	na	100.0	56.3	100.0	98.3	90.0	100.0	97.2	93.3	100.0	95.8	99.3	96.5	97.8	96.4	100.0	100.0	98.7
Tuvalu	na	na	na	na	na	na	na	na	100.0	na	100.0	100.0	100.0	100.0	na	na	100.0	50.0	100.0
Vanuatu	96.4	100.0	71.7	95.3	100.0	80.2	98.9	78.4	85.7	93.6	98.3	96.0	94.2	99.5	96.3	94.8	89.4	90.2	97.7

na = not applicable; no citation to this country was made.

EU = European Union.

<sup>a</sup> Beginning in 2006, Serbia and Montenegro represented individual countries.

<sup>b</sup> Serbia and Montenegro represented a single country for data purposes from 1992 to 2006.

#### Note(s)

Article counts refer to publications from a selection of journals, books, and conference proceedings in S&E from Scopus. Articles are classified by their year of publication and are assigned to a region, country, or economy on the basis of the institutional address(es) listed in the article. Articles are credited on a fractional-count basis (i.e., for articles with collaborating institutions from multiple regions or countries, each region or country receives fractional credit on the basis of the proportion of its participating institutions). Citation counts are based on all citations made to articles in their publication year and in the following 2 years (i.e., a 3-year citation window; e.g., scores in 2010 are based on citations to articles published in 2010 that were made in articles published in 2010–12). This indicator cannot be computed past 2014 because the citation window is incomplete for more recent years.

#### Source(s)

National Science Foundation, National Center for Science and Engineering Statistics; SRI International; Science-Metrix; Elsevier, Scopus abstract and citation database, accessed July 2017.

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