

APPENDIX TABLE 5-33 
S&E articles in engineering, by region, country, or economy: 2003–16

(Number)

Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
World	172,836.0	199,932.0	242,272.0	256,063.0	282,707.0	300,257.0	320,103.0	343,633.0	361,538.0	370,294.0	383,289.0	391,291.0	405,715.0	423,198.0
North America	46,364.2	50,880.4	60,003.8	57,963.0	58,720.7	58,389.7	60,415.5	65,176.9	64,816.0	65,062.8	65,564.5	62,439.3	62,117.6	61,228.5
Canada	5,477.7	6,652.4	8,158.4	7,878.9	8,698.1	8,496.8	8,902.8	9,721.7	9,175.1	9,589.8	9,339.4	9,257.2	9,331.2	9,023.8
Greenland	0.0	0.0	0.5	0.3	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mexico	829.2	1,059.5	1,176.7	1,461.0	1,348.6	1,557.1	1,645.2	1,863.6	1,765.9	1,987.6	1,957.9	1,961.6	2,066.4	2,047.1
United States	40,057.3	43,168.4	50,668.1	48,622.9	48,673.6	48,335.8	49,867.4	53,591.5	53,875.0	53,485.4	54,267.1	51,220.4	50,720.1	50,157.7
Central America and Caribbean	173.7	138.8	214.7	216.3	191.5	232.8	228.2	202.6	208.3	222.4	326.6	208.6	209.8	233.6
Antigua and Barbuda	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Bahamas, The	0.0	0.0	1.5	0.5	0.0	0.3	1.1	0.0	0.0	0.1	1.0	0.0	0.3	0.0
Barbados	2.5	1.0	0.0	0.0	0.0	1.0	2.2	0.7	0.3	2.0	2.2	1.4	0.5	2.4
Belize	0.0	0.5	0.0	0.0	0.0	1.0	0.0	1.2	0.0	0.1	0.8	0.0	0.0	0.0
Costa Rica	2.4	3.6	3.2	2.7	7.8	11.8	9.3	11.2	15.8	22.9	21.5	14.5	37.8	29.2
Cuba	54.5	44.8	67.6	65.8	49.7	80.0	69.5	48.6	62.3	64.0	205.8	58.1	88.4	54.4
Dominica	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Dominican Republic	1.3	1.8	1.0	0.0	0.8	0.3	2.1	0.9	0.9	2.8	1.2	2.2	1.2	1.2
El Salvador	0.0	0.0	3.3	5.3	4.5	9.5	3.6	5.5	1.8	1.8	0.9	0.4	2.1	1.8



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Grenada	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.2	0.0
Guatemala	0.0	0.0	1.0	0.6	2.3	1.3	2.7	2.2	0.3	0.6	1.3	2.1	0.8	7.0
Haiti	0.0	0.0	0.3	0.8	1.0	0.1	0.0	0.3	0.8	0.3	0.7	0.1	0.0	0.0
Honduras	0.3	0.8	0.0	1.0	0.5	0.2	1.3	0.6	0.1	1.0	0.0	0.3	1.1	3.1
Jamaica	14.2	7.9	8.2	5.9	10.4	10.0	13.5	5.0	6.6	6.4	9.2	6.6	13.4	16.0
Nicaragua	1.1	0.5	2.7	4.7	2.3	0.2	1.0	2.3	1.8	2.6	0.7	1.3	0.5	3.4
Panama	0.9	2.3	1.6	0.9	0.7	0.7	3.5	2.9	6.5	7.2	3.6	5.7	4.6	4.1
Puerto Rico	66.7	52.6	92.8	105.7	89.6	93.4	85.7	82.4	69.9	76.8	61.6	67.9	46.2	60.5
Saint Kitts and Nevis	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Saint Lucia	0.0	0.0	1.3	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saint Vincent and the Grenadines	0.0	0.0	1.3	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Trinidad and Tobago	29.8	23.1	28.8	21.5	21.4	22.9	32.0	38.7	40.2	34.0	16.1	48.1	12.5	48.7
South America	3,130.7	3,023.9	3,657.8	4,846.7	4,056.2	5,187.0	5,465.3	6,446.0	5,817.6	7,129.2	7,114.7	8,129.6	8,163.9	8,400.7
Argentina	394.8	361.1	469.2	692.8	463.0	578.5	561.2	694.0	582.1	706.2	599.8	801.4	719.5	822.5
Bolivia	1.2	5.7	2.8	2.6	0.7	1.0	1.8	4.1	0.7	3.6	3.3	7.8	8.7	5.9
Brazil	2,305.4	2,276.9	2,663.4	3,412.9	2,971.8	3,692.1	3,974.9	4,659.4	4,161.7	5,023.8	5,092.4	5,685.4	5,803.2	5,523.1
Chile	211.4	167.2	257.4	300.0	258.7	375.8	386.1	399.0	361.3	481.2	459.2	527.5	568.3	684.7
Colombia	60.6	69.3	84.3	158.1	142.5	297.5	315.7	446.9	478.2	617.0	729.9	795.5	773.3	857.6
Ecuador	3.6	5.7	11.6	4.3	2.0	4.4	7.4	14.7	7.8	24.8	24.2	53.2	83.4	236.4



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Guyana	0.0	0.0	0.3	0.0	0.5	0.0	0.6	0.3	0.3	0.0	0.2	0.0	0.0	0.7
Paraguay	0.0	2.0	2.2	2.0	0.9	1.8	0.8	1.5	7.0	4.6	8.0	7.6	5.9	16.0
Peru	11.8	12.0	15.2	23.5	18.6	17.4	16.5	43.8	31.4	48.1	28.9	49.9	62.4	100.9
Suriname	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.5	0.9	0.3	4.2	1.7	0.9	0.8
Uruguay	12.5	13.3	16.9	22.5	31.5	32.1	36.9	51.3	53.2	69.2	47.5	58.7	59.4	90.2
Venezuela	129.4	110.6	134.5	228.1	166.0	186.4	162.4	130.6	132.9	150.5	117.1	140.9	78.9	61.9
Europe	53,378.0	59,138.7	70,414.2	70,714.2	80,484.8	84,109.0	89,644.1	94,544.0	96,305.9	105,961.0	104,559.5	110,440.6	113,322.4	114,170.4
EU	41,677.6	46,421.7	57,104.1	58,950.7	66,694.9	70,223.0	74,726.3	78,683.8	80,104.1	87,596.3	84,962.7	90,676.4	91,362.0	89,342.1
Austria	743.0	865.4	1,120.1	1,114.3	1,314.5	1,494.6	1,504.2	1,715.6	1,612.0	1,923.7	1,679.0	1,824.2	1,881.7	1,923.4
Belgium	954.1	1,108.1	1,424.7	1,339.1	1,661.8	1,781.0	1,907.9	1,930.0	2,136.0	2,217.7	2,185.3	2,188.2	2,154.8	2,086.5
Bulgaria	254.8	256.9	371.2	254.2	370.1	223.4	439.6	283.4	299.5	276.1	293.8	348.0	299.4	466.3
Croatia	323.0	296.6	448.2	440.5	494.3	533.6	536.3	550.3	543.7	740.8	462.9	527.7	545.8	490.7
Cyprus	21.9	44.0	52.3	55.3	78.6	86.3	97.4	154.7	143.1	147.7	171.4	151.4	176.6	181.6
Czech Republic	605.8	636.4	1,112.0	1,229.1	1,424.2	1,670.3	1,853.7	2,401.9	2,517.1	2,677.2	2,629.8	3,171.1	3,549.5	3,252.0
Denmark	560.7	650.1	820.9	780.9	995.6	906.3	1,118.5	1,105.8	1,338.1	1,482.9	1,598.2	1,716.7	1,876.1	1,701.9
Estonia	50.2	62.9	70.0	171.2	181.7	238.1	171.0	234.0	221.6	293.5	209.9	295.3	250.2	239.3
Finland	1,177.1	1,356.9	1,647.7	1,528.9	1,637.5	1,525.2	1,647.4	1,694.3	1,698.8	1,764.4	1,887.8	1,886.1	1,837.8	1,735.3
France	5,579.9	6,035.3	7,254.7	7,968.1	8,476.6	9,056.3	9,563.2	9,551.0	9,936.9	10,707.6	10,554.8	10,253.6	10,091.4	9,511.0
Germany	8,201.9	8,376.9	10,427.1	10,114.3	11,550.8	11,914.7	12,443.1	12,618.7	13,173.4	14,675.2	13,527.5	14,584.9	14,738.7	14,897.6



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Greece	946.4	1,169.0	1,435.5	1,715.2	1,898.3	1,806.4	1,771.9	1,958.0	1,934.7	2,000.7	1,929.6	1,881.2	1,859.6	1,931.8
Hungary	396.6	417.1	584.5	532.6	686.3	729.7	599.2	766.5	699.7	786.3	832.7	812.3	884.9	705.2
Ireland	346.1	478.1	679.1	555.4	805.9	732.7	743.4	822.9	797.8	789.9	826.5	854.7	859.5	895.9
Italy	4,574.2	4,981.6	5,909.8	6,563.4	7,087.4	7,495.7	8,161.8	8,407.8	8,668.3	9,403.6	9,563.2	10,898.5	11,995.1	10,867.5
Latvia	47.1	67.6	86.6	77.0	117.6	193.5	168.8	179.0	351.2	379.3	338.1	330.2	404.2	342.2
Lithuania	146.0	197.7	284.7	375.8	362.3	700.7	589.8	643.7	590.9	559.6	567.2	477.5	413.0	379.9
Luxembourg	12.2	13.7	12.2	27.6	23.2	34.9	38.1	56.1	73.1	80.2	125.8	109.8	113.4	134.1
Malta	8.2	7.9	12.2	17.1	24.6	33.8	26.5	50.5	24.9	46.3	42.8	48.0	33.3	47.4
Netherlands	1,777.1	1,919.8	2,497.6	2,292.2	2,808.5	2,815.4	3,054.7	3,292.4	3,041.3	3,405.5	3,160.7	3,109.3	3,084.5	2,880.1
Poland	1,367.0	2,187.8	2,436.5	2,598.6	3,229.2	3,665.8	3,510.4	4,243.9	3,989.2	4,854.7	4,513.0	5,718.8	5,506.4	6,195.4
Portugal	705.2	1,058.9	1,166.7	1,619.3	1,493.5	1,643.5	1,807.6	2,013.2	2,055.0	2,324.6	2,448.1	2,460.7	2,647.5	2,502.6
Romania	568.9	590.5	949.1	939.0	1,704.6	2,246.2	2,967.3	3,207.0	2,621.1	2,681.5	2,392.5	2,603.3	2,300.2	2,517.8
Slovakia	216.4	258.0	405.8	365.2	501.4	520.2	585.4	679.0	755.8	1,047.9	958.4	1,298.4	1,292.2	1,312.6
Slovenia	546.5	483.0	523.2	568.3	674.7	680.0	648.5	621.1	749.1	755.4	714.8	695.5	579.1	572.2
Spain	2,553.4	3,072.6	3,746.0	4,361.7	4,762.3	4,967.6	5,692.7	6,121.2	6,483.4	7,047.4	6,935.7	7,420.0	7,014.8	6,487.9
Sweden	1,664.0	1,952.3	2,211.3	2,183.9	2,330.4	2,315.6	2,596.1	2,731.3	2,863.2	3,248.2	3,228.7	3,460.3	3,252.4	3,328.0
United Kingdom	7,329.6	7,876.2	9,414.4	9,162.5	9,998.7	10,211.4	10,482.0	10,650.5	10,785.3	11,278.4	11,184.7	11,550.9	11,719.7	11,755.9
Other Europe	11,700.4	12,717.0	13,310.0	11,763.5	13,789.9	13,886.0	14,917.8	15,860.2	16,201.8	18,364.7	19,596.8	19,764.2	21,960.4	24,828.2
Albania	1.6	1.9	0.7	6.4	3.5	3.2	4.6	15.5	10.6	11.6	20.4	8.9	18.6	12.5

Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Andorra	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.3	0.0	0.0	0.7
Belarus	240.6	329.9	303.8	192.5	247.8	243.7	352.0	250.4	206.9	274.6	269.1	229.6	177.3	185.9
Bosnia and Herzegovina	17.1	19.4	44.2	29.7	36.8	39.6	48.1	56.3	95.4	145.5	114.7	104.7	150.1	145.5
Holy See (Vatican City)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Iceland	17.4	16.8	23.9	21.1	38.4	27.6	43.1	55.6	76.0	79.6	79.7	87.9	96.4	119.1
Kosovo	0.0	0.0	0.0	0.0	0.0	8.9	13.7	32.3	25.9	31.5	33.4	22.0	26.5	51.7
Liechtenstein	3.5	3.9	9.3	11.2	8.8	12.2	5.5	8.0	4.1	10.5	6.2	5.9	6.7	8.0
Macedonia	34.9	37.2	54.9	45.1	69.2	42.3	64.0	69.4	65.0	98.5	82.4	76.0	84.8	85.5
Moldova	28.6	11.8	35.9	19.9	33.5	30.8	35.4	33.2	22.1	23.7	26.0	29.0	21.2	95.5
Monaco	0.0	2.0	3.0	7.6	2.7	4.1	0.5	0.8	3.5	3.1	4.7	2.3	0.6	0.5
Montenegro ^a	na	na	na	0.0	22.6	18.9	20.7	33.0	49.6	70.1	55.4	57.3	78.2	65.2
Norway	481.5	556.5	767.8	826.8	1,035.5	933.9	1,173.0	1,263.9	1,268.0	1,632.2	1,497.5	1,600.1	1,486.4	1,576.4
Russia	5,917.8	5,867.2	5,597.9	4,167.2	4,716.2	5,057.8	5,343.9	5,447.0	5,668.1	6,190.4	6,549.2	7,829.5	10,048.2	12,038.3
San Marino	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.3	2.3	1.8	2.5	1.0	5.2
Serbia ^a	na	na	na	na	545.1	502.7	663.4	740.7	1,147.0	1,323.4	1,254.7	949.9	951.7	1,156.4
Serbia and Montenegro ^b	295.4	329.2	505.3	503.4	na	na	na	na	na	na	na	na	na	na
Switzerland	1,089.7	1,284.8	1,597.3	1,646.5	1,787.4	1,897.5	1,890.1	2,125.3	2,116.8	2,331.8	2,304.3	2,503.2	2,411.4	2,356.1
Turkey	1,565.7	2,259.2	2,458.8	2,857.0	3,344.0	3,445.1	3,799.9	3,849.7	3,855.5	4,347.9	5,139.6	4,263.9	4,332.7	5,010.1
Ukraine	2,006.7	1,997.2	1,907.3	1,429.1	1,898.3	1,617.6	1,459.9	1,879.2	1,586.7	1,787.8	2,157.5	1,991.5	2,068.8	1,915.6

Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Middle East	2,901.1	3,517.5	4,103.3	5,043.3	5,752.0	7,084.8	8,359.2	10,296.9	12,042.3	13,006.4	13,160.2	14,024.0	14,773.9	15,896.3
Armenia	39.6	58.0	66.1	53.7	70.6	62.1	62.5	51.6	86.5	57.8	54.6	50.8	53.8	36.5
Azerbaijan	43.6	45.0	35.7	47.2	34.0	43.3	58.6	83.2	74.0	65.7	46.6	45.4	58.3	54.4
Bahrain	36.4	26.9	28.4	29.2	39.7	26.7	45.3	41.1	37.9	29.3	33.1	28.1	28.2	22.2
Gaza Strip	2.1	2.0	6.6	10.5	7.1	4.7	4.8	10.4	9.4	10.7	21.7	19.5	17.3	16.5
Georgia	44.0	56.3	41.3	49.4	38.6	48.6	62.6	48.4	33.1	35.1	41.2	52.4	35.0	55.2
Iran	1,007.1	1,337.0	1,819.6	2,531.0	3,130.8	4,393.7	5,230.3	6,952.2	8,048.1	8,567.4	8,171.9	9,215.6	9,008.8	10,301.9
Iraq	18.2	21.1	23.5	60.8	43.3	66.7	64.9	140.5	159.6	249.8	212.6	229.9	250.8	342.2
Israel	734.0	939.6	941.2	1,045.3	990.4	1,048.2	1,106.8	1,013.2	994.5	959.4	1,010.3	1,054.0	1,114.2	1,037.6
Jordan	144.3	172.5	178.5	180.3	222.3	242.5	240.9	271.9	315.3	261.8	313.1	229.5	286.1	306.1
Kuwait	132.8	128.5	138.8	133.7	173.2	157.9	173.3	170.6	205.3	226.9	228.4	190.8	318.8	168.2
Lebanon	59.8	84.5	85.4	107.1	99.7	126.1	139.0	137.7	181.4	236.0	266.3	282.9	272.8	329.0
Oman	62.9	68.2	84.0	72.0	111.3	92.0	94.6	112.0	150.3	150.0	146.3	134.0	193.3	162.2
Qatar	18.5	28.3	34.6	35.3	50.3	71.3	77.7	121.3	116.9	197.6	267.7	288.3	349.2	374.3
Saudi Arabia	385.6	353.4	386.4	419.7	479.2	435.7	647.0	695.2	1,061.4	1,228.8	1,601.9	1,486.6	1,819.3	1,923.8
Syria	8.2	25.3	19.2	25.7	24.4	52.1	21.2	35.7	39.6	64.7	33.1	32.3	41.6	28.6
United Arab Emirates	149.6	163.1	202.9	229.0	219.6	201.1	313.1	392.1	487.0	627.8	665.8	640.0	885.7	695.2
West Bank	13.2	6.6	8.3	9.0	11.0	9.0	12.7	12.3	32.6	23.2	27.0	29.8	31.1	30.2
Yemen	1.3	1.3	3.0	4.3	6.7	3.2	3.8	7.6	9.4	14.3	18.8	14.0	9.5	12.1



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Africa	1,905.6	2,690.1	2,634.7	2,851.5	3,295.0	3,462.6	4,324.3	4,529.5	5,141.0	5,985.0	7,160.2	7,038.1	7,186.3	8,597.6
Algeria	215.5	346.5	324.5	428.3	468.4	595.1	709.2	701.5	910.6	1,142.8	1,432.4	1,320.0	1,295.9	1,624.2
Angola	0.0	0.9	2.1	2.1	1.4	0.7	1.2	0.6	0.1	1.0	5.2	4.3	3.4	1.4
Benin	2.3	0.8	0.6	0.3	1.3	1.0	0.5	2.8	2.0	1.0	3.3	5.0	6.1	3.5
Botswana	8.3	11.6	7.8	29.4	7.8	9.8	13.6	17.0	13.4	15.3	16.5	16.7	11.8	52.1
Burkina Faso	4.1	0.2	1.2	1.3	1.3	3.9	5.8	3.0	3.8	16.7	8.7	8.0	5.7	6.4
Burundi	1.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.3	1.0
Cameroon	6.3	10.8	14.2	13.3	15.8	21.2	22.8	24.3	24.6	35.5	30.1	40.3	34.8	57.7
Cape Verde	0.7	0.0	0.0	0.2	0.8	0.5	0.5	0.0	0.0	0.3	0.3	0.2	0.9	0.8
Central African Republic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.4	0.0	0.3	0.0
Chad	0.5	0.0	0.0	0.2	0.4	0.1	0.7	0.0	0.0	0.2	0.1	0.0	1.2	1.1
Comoros	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Congo, Democratic Republic of the	0.7	0.0	1.6	1.0	0.0	0.0	1.9	0.0	0.5	0.4	1.0	0.8	0.9	0.3
Congo, Republic of the	0.0	1.0	2.3	1.4	0.8	1.8	1.7	0.0	2.8	2.3	3.9	1.7	0.3	2.0
Côte d'Ivoire	2.7	2.6	2.5	0.1	4.6	4.7	5.1	3.2	1.4	5.4	1.2	8.4	7.5	6.1
Djibouti	0.0	0.0	0.1	0.0	0.5	0.0	0.5	0.3	0.3	0.1	0.4	1.3	0.0	0.5
Egypt	818.4	1,073.7	920.6	1,001.5	1,097.3	1,146.6	1,335.6	1,410.1	1,435.6	1,712.3	1,949.6	1,802.9	1,850.0	2,021.8
Equatorial Guinea	0.0	0.0	0.2	0.0	0.5	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Eritrea	1.1	0.3	0.2	0.1	1.0	1.0	0.5	1.0	2.0	1.0	0.3	0.4	0.1	0.1



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Ethiopia	6.2	2.0	4.8	2.3	5.4	6.7	6.8	6.2	16.5	13.9	17.1	28.8	61.9	54.9
Gabon	0.5	0.8	0.0	0.5	0.3	1.3	0.5	0.0	1.7	0.6	1.4	0.9	0.1	2.6
Gambia, The	0.2	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.4	0.8	1.3	0.4	0.0	0.0
Ghana	4.3	9.5	14.5	10.4	13.4	13.3	38.0	27.4	45.0	67.8	45.2	41.0	60.2	60.4
Guinea	0.0	1.9	0.2	0.5	1.0	0.0	0.0	0.0	0.0	0.0	0.3	0.7	0.4	0.3
Guinea-Bissau	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kenya	8.0	7.5	7.9	9.6	11.2	9.0	19.9	12.7	13.4	19.7	16.9	24.0	41.7	29.5
Lesotho	0.0	0.2	0.0	1.0	2.1	0.2	1.2	1.8	0.0	3.6	1.5	0.4	0.5	1.0
Liberia	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.3	0.3	0.2
Libya	25.3	32.9	33.9	29.8	40.0	53.1	39.8	57.0	25.0	49.7	67.4	69.9	53.1	34.9
Madagascar	0.1	0.5	0.0	1.0	2.2	1.9	3.6	0.2	4.6	3.5	2.4	5.1	6.1	4.4
Malawi	0.0	0.0	0.5	2.1	4.1	2.8	5.4	1.5	3.1	4.3	5.4	3.0	0.5	2.2
Mali	0.3	0.7	0.0	0.0	1.3	0.0	0.2	0.4	0.8	0.3	0.4	3.2	0.6	1.6
Mauritania	0.4	0.0	0.0	0.0	0.3	0.0	0.4	0.3	0.6	0.8	1.7	1.1	0.8	1.2
Mauritius	11.2	7.5	3.3	7.3	11.2	7.7	7.3	9.5	5.7	17.6	25.8	11.7	27.0	23.1
Morocco	98.3	142.3	123.6	126.4	163.5	156.1	175.0	194.4	225.6	382.8	426.4	661.1	541.8	1,162.7
Mozambique	3.3	1.8	2.3	1.0	1.9	0.6	2.1	0.5	3.3	3.0	0.8	3.0	2.0	1.9
Namibia	1.3	0.2	3.9	2.3	5.5	2.0	4.0	1.9	5.1	2.6	7.4	6.1	6.3	7.2
Niger	1.1	0.5	1.5	0.3	1.0	1.2	2.3	5.3	0.7	1.8	0.9	1.0	1.7	4.3



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Nigeria	96.7	146.9	116.8	129.2	139.3	169.1	322.2	333.7	383.4	378.8	437.5	497.7	575.4	590.2
Rwanda	1.0	0.0	0.0	0.6	2.2	0.5	0.1	3.4	1.6	3.0	0.8	3.7	5.1	2.4
São Tomé and Príncipe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Senegal	3.6	4.3	2.0	4.8	3.0	4.6	6.7	6.6	5.3	9.4	13.4	14.4	16.0	18.6
Seychelles	1.0	0.0	0.0	0.0	0.0	0.0	0.5	5.0	0.0	0.0	0.0	0.0	0.0	0.0
Sierra Leone	0.3	3.0	0.3	0.5	0.1	0.0	0.0	0.0	0.3	0.0	0.0	0.3	0.3	0.0
Somalia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.2
South Africa	417.2	532.3	701.9	670.7	868.1	629.2	906.6	975.5	1,126.4	1,211.7	1,316.0	1,293.8	1,344.8	1,507.4
South Sudan	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.0
Sudan	1.8	3.8	3.8	6.4	12.6	11.5	13.7	12.9	25.9	31.1	107.1	18.6	24.4	25.6
Swaziland	0.5	0.3	2.2	1.7	2.3	1.3	1.7	3.2	2.3	3.9	3.1	3.2	1.2	4.4
Tanzania	4.3	7.5	8.0	10.1	10.1	17.0	10.6	7.6	9.8	9.4	14.3	26.1	24.9	25.6
Togo	0.3	0.9	0.0	0.0	1.3	4.0	1.7	0.0	2.4	1.6	1.9	3.6	1.6	1.7
Tunisia	145.8	322.6	310.2	338.3	378.2	565.0	639.6	691.3	815.3	796.8	1,162.3	1,067.0	1,137.5	1,208.6
Uganda	1.5	2.9	2.8	4.1	3.5	6.8	5.7	2.6	12.4	16.1	11.0	22.0	13.6	16.3
Western Sahara	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Zambia	1.5	2.1	5.4	2.2	2.3	8.0	4.6	1.6	3.0	9.1	7.0	9.5	6.6	12.3
Zimbabwe	7.8	6.9	7.2	8.8	5.2	2.6	4.6	3.2	4.3	6.0	8.8	6.3	10.9	12.9
Asia	60,159.4	75,439.5	95,152.4	107,905.7	122,261.6	134,516.4	145,215.5	155,727.7	169,879.9	165,359.8	177,692.0	181,600.5	192,645.5	207,596.1



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Afghanistan	0.0	0.0	0.0	0.0	0.2	0.6	0.4	1.3	0.6	2.8	1.4	1.9	0.0	7.6
Bangladesh	65.5	58.5	98.2	112.0	213.2	234.1	238.3	418.2	255.3	492.2	613.5	598.3	461.3	719.4
Bhutan	0.0	2.0	1.8	1.7	0.0	1.2	0.3	1.8	1.3	2.3	2.2	1.0	1.0	1.8
Brunei	4.1	7.5	3.2	9.8	6.0	2.3	7.5	8.0	7.6	12.8	18.9	44.3	34.0	66.4
Burma	0.0	0.5	0.8	3.9	1.0	8.5	5.0	3.0	20.5	2.0	1.2	0.7	10.0	7.1
Cambodia	0.1	0.0	1.0	0.5	2.5	0.3	0.8	1.6	0.2	3.7	1.5	2.7	1.0	3.3
China	25,515.2	36,524.7	51,013.0	59,409.2	67,098.9	77,644.2	84,752.8	92,247.2	100,414.5	94,173.2	101,264.3	107,189.2	113,912.9	123,033.5
India	4,288.3	4,771.7	5,884.9	7,034.6	7,789.8	9,218.5	10,538.6	10,969.3	14,260.2	15,823.2	18,834.7	19,493.9	21,631.0	26,739.6
Indonesia	60.8	93.6	96.0	129.7	156.8	139.6	295.3	200.7	626.8	595.2	692.0	750.3	1,458.4	2,213.8
Japan	16,910.1	17,672.9	18,908.9	19,833.5	21,548.9	20,486.9	21,518.7	21,408.6	20,833.5	20,200.1	20,585.5	18,183.8	17,743.9	16,542.9
Kazakhstan	37.2	42.6	38.2	30.8	42.8	39.1	45.8	66.4	56.6	79.7	129.8	187.9	273.7	341.4
Kyrgyzstan	0.1	1.8	1.5	6.7	2.4	4.5	1.5	1.1	3.9	3.9	4.9	5.6	4.6	5.3
Laos	0.0	1.3	0.6	0.7	0.0	3.0	2.3	4.6	1.6	1.2	2.0	4.0	1.6	4.4
Malaysia	545.2	678.1	788.6	922.5	1,234.4	1,851.7	2,290.1	2,785.2	4,454.4	4,638.7	5,481.0	5,679.4	6,934.3	8,235.1
Maldives	0.0	0.3	0.0	0.0	0.0	0.1	0.0	0.3	0.0	0.0	0.0	0.2	0.0	0.0
Mongolia	6.6	6.6	4.7	9.4	11.8	2.3	6.5	15.8	26.2	35.1	74.9	10.0	11.1	10.4
Nepal	0.5	3.8	4.9	5.3	9.2	5.7	11.9	12.9	14.8	36.3	13.6	14.6	16.9	32.5
North Korea	1.3	13.6	24.1	27.5	21.8	4.3	17.9	3.6	0.9	5.2	4.4	5.3	5.7	11.2
Pakistan	70.8	105.2	240.7	307.1	399.7	490.6	541.5	503.3	665.9	881.6	1,042.7	908.6	1,111.3	1,386.4



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Papua New Guinea	2.6	2.0	0.0	0.1	0.3	0.5	1.3	2.3	2.5	2.5	1.0	4.1	2.3	4.4
Philippines	27.2	23.6	21.7	30.4	49.2	28.2	45.8	52.0	69.0	112.8	71.4	80.3	187.2	338.9
Singapore	1,997.1	2,327.4	2,567.1	2,207.3	2,517.5	2,413.0	2,499.4	2,577.2	2,529.5	2,622.5	2,640.6	2,445.5	2,684.7	2,701.1
South Korea	6,056.1	7,310.1	8,737.7	9,805.8	11,853.8	12,306.6	12,406.4	13,358.5	14,395.8	14,486.9	14,852.8	15,442.5	16,156.2	15,546.0
Sri Lanka	21.3	15.6	26.7	64.2	66.9	42.0	72.2	48.7	81.3	66.1	59.0	49.5	73.1	124.6
Taiwan	4,064.8	5,063.4	5,934.5	7,004.8	8,042.9	8,121.0	8,508.0	9,313.4	9,117.8	9,015.0	9,112.0	8,305.7	7,345.2	6,358.7
Tajikistan	0.8	2.0	0.5	0.2	1.8	1.1	0.7	1.8	7.2	6.6	2.7	3.3	6.4	3.7
Thailand	438.8	650.4	671.2	867.1	1,075.4	1,307.2	1,260.0	1,414.7	1,802.7	1,723.3	1,739.5	1,776.6	1,997.2	2,256.4
Timor-Leste	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Turkmenistan	0.5	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.0	0.0	0.0	1.0	0.0	0.0
Uzbekistan	16.0	21.6	28.7	22.9	68.0	25.3	28.4	71.6	28.7	20.6	27.8	30.4	24.8	60.9
Vietnam	27.9	38.7	53.3	58.1	46.0	134.1	117.9	234.0	200.7	314.3	416.9	380.0	555.5	838.5
Australia and Oceania	2,837.5	2,985.1	3,876.1	4,215.6	5,114.5	4,864.2	4,972.7	5,520.1	6,196.1	6,529.3	6,994.1	7,030.6	7,022.5	6,826.7
Australia	2,536.3	2,623.7	3,477.3	3,715.0	4,516.2	4,235.0	4,332.3	4,854.8	5,461.7	5,767.6	6,278.7	6,279.9	6,308.9	6,104.1
Cook Islands	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Fiji	4.0	9.0	7.9	12.1	8.3	7.9	6.6	8.9	14.0	13.9	21.1	19.9	19.0	19.5
Kiribati	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Marshall Islands	0.0	0.2	0.0	0.2	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0
Micronesia, Federated States of	0.0	0.4	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0



Region, country, or economy	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Nauru	0.0	0.0	0.0	0.3	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
New Zealand	297.0	351.2	390.9	487.2	589.7	621.2	632.2	653.8	719.0	746.9	694.1	730.8	692.8	702.8
Niue	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Palau	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0
Samoa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.1	0.0	0.2	0.0
Solomon Islands	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0
Tonga	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5	0.0	0.0	0.0	0.0
Tuvalu	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vanuatu	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Unassigned	1,985.8	2,118.1	2,214.9	2,306.7	2,830.8	2,410.4	1,478.2	1,189.4	1,130.9	1,038.1	717.3	379.8	273.1	248.0

na = not applicable; country data do not exist.

EU = European Union.

^a Beginning in 2006, Serbia and Montenegro represented individual countries.

^b 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. The sum of the regions, countries, or economies may not add to the world total because of rounding. Some publications have incomplete address information for coauthored publications in the Scopus database. The unassigned category count is the sum of fractional counts for publications that cannot be assigned to a region, country, or economy.

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