

TABLE 137

Impact of producing specialized equipment or goods or services with specialized equipment on skill level of workforce, by industry: 2016–18

(Number and percent)

Industry	NAICS code	Companies (number)	Number of workers			Skill level of workers			STEM skills of workers			
			Increased	Decreased	Did not change	Increased	Decreased	Did not change	Increased	Decreased	Did not change	Did not employ
All industries	11, 21–23, 31–33, 42–81	108,525	15.8	4.1	80.1	30.9	2.0	67.1	23.6	1.2	47.3	28.0
Manufacturing industries	31–33	13,962	19.8	6.2	74.0	34.3	1.9	63.8	30.2	0.7	53.3	15.8
Food	311	535	9.7	10.7	r 79.5	12.9	9.0	r 78.0	7.5	D	35.0	50.5
Beverage and tobacco products	312	108	26.9	11.1	62.0	50.9	D	47.2	25.9	D	28.7	43.5
Textile, apparel, and leather products	313–16	273	9.9	D	84.6	25.6	D	72.5	11.4	D	54.6	31.1
Wood products	321	278	9.0	24.1	r 66.9	9.0	D	88.8	9.4	0.0	72.5	18.1
Paper	322	68	10.3	D	58.8	r 52.2	r 0.0	47.8	r 37.3	r 0.0	40.3	r 22.4
Printing and related support activities	323	858	14.8	7.8	77.4	32.2	D	64.0	19.9	D	45.6	30.9
Petroleum and coal products	324	16	r 0.0	0.0	100.0	D	0.0	D	D	0.0	D	D
Chemicals	325	384	24.4	r 10.8	64.8	34.1	3.1	r 62.8	21.6	D	63.8	13.5
Pesticide, fertilizer, and other agricultural chemical manufacturing	3253	47	r D	0.0	D	D	0.0	D	D	0.0	D	0.0
Pharmaceuticals and medicines	3254	77	15.2	r 16.5	r 68.3	29.9	r D	62.3	29.9	r D	49.4	14.3
Soap, cleaning compound, and toilet preparation manufacturing	3256	55	D	D	83.6	27.8	r 0.0	72.2	37.0	0.0	37.0	25.9
Other chemicals	other 325	206	15.9	r 13.0	r 71.0	23.8	D	73.8	18.2	0.0	69.6	12.2
Plastics and rubber products	326	565	12.0	r 9.7	r 78.3	24.8	D	74.5	15.6	D	74.2	8.7
Nonmetallic mineral products	327	178	19.7	D	76.4	24.2	r D	72.5	18.3	0.0	41.7	40.0
Primary metals	331	114	14.0	r D	86.0	13.0	0.0	87.0	6.9	0.0	81.8	11.3
Fabricated metal products	332	3,053	22.7	5.6	r 71.8	38.7	2.2	r 59.1	38.3	D	48.9	12.7
Machinery	333	3,101	26.0	5.3	68.7	39.1	D	59.3	33.7	0.0	57.7	8.6
Computer and electronic products	334	1,812	16.8	3.3	79.9	28.7	1.2	r 70.1	29.8	0.3	r 62.0	7.9
Communications equipment	3342	228	21.9	D	76.8	33.9	0.0	66.1	36.8	0.0	60.6	2.6
Semiconductor and other electronic components	3344	319	14.2	8.2	r 77.6	29.3	6.6	r 64.1	33.9	D	57.1	7.8
Navigational, measuring, electromedical, and control instruments	3345	1,109	15.9	2.6	r 81.5	27.3	D	72.5	27.4	D	64.5	8.2
Other computer and electronic products	other 334	157	21.7	D	78.3	30.4	r 0.0	69.6	29.5	r 0.0	56.6	13.8
Electrical equipment, appliances, and components	335	419	31.7	1.2	r 67.1	46.1	0.0	53.9	47.8	0.0	48.0	4.3
Transportation equipment	336	493	21.4	4.9	r 73.7	32.3	D	66.9	27.2	D	56.0	16.6
Automobiles, bodies, trailers, and parts	3361–63	292	6.5	3.4	90.1	21.9	r D	76.7	20.2	r D	56.5	r 22.6
Aerospace products and parts	3364	108	36.1	D	63.9	40.3	0.0	59.7	29.6	0.0	63.9	D
Other transportation	other 336	93	49.5	r D	38.7	r 54.3	r 0.0	45.7	r 46.2	r 0.0	47.3	r D
Furniture and related products	337	350	18.0	D	81.1	48.9	D	51.1	46.6	0.0	31.2	22.2

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Miscellaneous	339	1,360	14.0	6.9	79.1	35.8	D	64.0	32.3	0.0	45.8	21.8	
Medical equipment and supplies	3391	608	11.2	r 13.2	r 75.6	48.5	D	51.2	49.0	0.0	32.7	18.3	r
Other miscellaneous manufacturing	3399	751	16.4	r 1.9	r 81.7	25.4	0.0	74.6	18.9	0.0	56.6	24.5	
Nonmanufacturing industries	11, 21–23, 42–81	94,562	15.2	3.8	81.0	30.4	2.0	67.6	22.6	1.3	46.4	29.8	
Agriculture, forestry, fishing, and hunting	11	127	r D	0.0	D	D	0.0	100.0	D	0.0	0.0	100.0	
Mining, extraction, and support activities	21	345	8.4	r D	91.3	34.4	0.0	65.6	27.9	0.0	52.4	19.8	r
Utilities	22	50	26.5	0.0	73.5	40.8	r 0.0	59.2	35.3	r 0.0	41.2	r 23.5	r
Construction	23	10,176	19.3	3.1	77.6	35.2	1.4	r 63.4	23.3	1.5	r 46.6	28.7	
Wholesale trade	42	12,354	13.9	4.7	81.4	26.7	1.4	71.9	22.6	0.8	r 49.1	27.5	
Retail trade	44–45	10,704	13.3	3.2	83.5	25.4	2.0	72.6	17.2	1.9	49.0	32.0	
Transportation and warehousing	48–49	1,933	18.6	6.9	r 74.5	20.9	D	78.0	6.7	r D	48.0	44.9	
Information	51	2,100	19.8	2.2	78.0	38.2	1.6	r 60.2	29.4	D	48.8	21.0	
Publishing	511	370	30.2	0.0	69.8	37.8	D	62.2	34.7	0.0	50.8	14.5	
Newspaper, periodical, book, and directory publishers	5111	89	9.1	0.0	90.9	19.1	D	78.7	14.9	0.0	56.3	28.7	r
Software publishers	5112	280	36.7	0.0	63.3	43.8	0.0	56.2	40.8	0.0	49.3	9.9	
Telecommunications	517	444	18.7	r D	80.9	34.0	D	65.8	30.2	0.0	40.8	29.1	
Data processing, hosting, and related services	518	474	16.0	6.3	r 77.7	38.4	D	60.8	30.9	0.0	56.7	12.4	
Other information	other 51	809	17.7	r 1.4	r 80.9	40.8	3.1	r 56.1	25.7	r D	48.0	24.6	
Finance and insurance	52	1,276	16.8	D	77.4	23.7	D	73.4	23.7	D	32.4	41.1	
Real estate and rental and leasing	53	1,485	12.4	D	84.0	21.9	D	77.4	15.2	r 0.0	46.6	38.1	
Lessors of nonfinancial intangible assets (except copyrighted works)	533	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Other real estate and rental and leasing	other 53	1,485	12.4	D	84.0	21.9	D	77.4	15.2	r 0.0	46.6	38.1	
Professional, scientific, and technical services	54	18,044	17.2	3.4	79.4	34.1	1.4	64.5	32.6	0.5	r 50.5	16.4	
Legal services	5411	871	25.3	D	68.2	37.7	D	57.9	34.3	0.0	21.0	44.7	
Accounting, tax preparation, bookkeeping, and payroll services	5412	960	15.1	D	78.9	27.2	D	72.4	25.9	D	48.9	21.3	
Architectural, engineering, and related services	5413	5,304	11.2	3.2	85.6	27.4	2.7	69.9	31.7	0.7	r 60.2	7.4	
Specialized design services	5414	407	D	D	87.0	29.7	0.0	70.3	25.4	r 0.0	47.3	27.4	
Computer systems design and related services	5415	5,285	20.2	1.8	r 78.0	34.3	0.5	r 65.2	33.2	D	51.7	15.0	
Management, scientific, and technical consulting services	5416	2,124	22.2	5.9	r 71.9	47.3	D	50.7	44.8	D	40.3	14.6	
Scientific research and development services	5417	763	27.0	2.1	r 70.9	42.9	0.0	57.1	44.8	0.0	50.4	4.8	
Advertising, public relations, and related services	5418	456	23.7	D	74.3	30.6	0.0	69.4	24.1	0.0	44.1	31.8	
Other professional, scientific, and technical services	5419	1,871	12.7	D	83.6	37.3	0.0	62.7	21.2	0.0	47.6	31.2	

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Management of companies and enterprises	55	D	D	0.0	D	D	0.0	D	D	0.0	D	0.0	
Administrative and support and waste management and remediation services	56	6,600	17.8	3.4	78.8	28.8	2.1	r 69.1	14.6	D	41.3	42.9	
Educational services	61	716	12.0	r 0.0	88.0	28.1	0.0	71.9	14.2	r 0.0	47.6	38.3	
Health care and social assistance	62	13,627	10.7	2.6	86.7	34.0	1.9	64.1	24.6	1.3	45.6	28.5	
Health care services	621–23	13,627	10.7	2.6	86.7	34.0	1.9	64.1	24.6	1.3	45.6	28.5	
Social assistance	624	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Arts, entertainment, and recreation	71	1,313	10.4	r D	86.3	27.2	D	69.6	13.0	D	39.9	43.9	
Accommodation and food services	72	4,252	20.6	9.7	69.7	24.1	7.5	68.4	11.8	4.9	33.9	49.3	
Other services	81	9,406	12.0	4.3	83.7	30.2	3.2	66.6	20.5	1.1	r 44.7	33.7	

D = withheld to avoid disclosing data for individual companies; data are included in higher-level totals. r = relative standard error > 50%.

NAICS = 2017 North American Industry Classification System; STEM = science, technology, engineering, and mathematics.

Note(s):

Detail may not add to total because of rounding or unavailable NAICS detail for select records beyond the 4-digit industry classification. Industry classification is based on dominant establishment payroll. Statistics are representative of companies located in the United States.

Source(s):

National Center for Science and Engineering Statistics and Census Bureau, 2019 Annual Business Survey: Data Year 2018.