TABLE 90

Use of robotics as a production technology for goods and services, by industry: 2016–18

(Number and percent)

Industry	NAICS code	Companies (number)	Did not use	Tested, but not used in production or service	Low use	Moderate use	High use	Don't know
All industries	11, 21–23, 31–33, 42–81	4,805,151	93.7	0.2	0.9	0.6	0.3	4.3
Manufacturing industries	31–33	217,565	85.6	0.6	3.6	3.4	2.5	4.3
Food	311	18,250	88.1	0.4	3.0	1.6	1.2	5.7
Beverage and tobacco products	312	7,723	90.9	0.1	2.0	1.9	1.5 r	3.6
Textile, apparel, and leather products	313–16	10,554	91.1	D	1.5	1.0	1.1	5.3
Wood products	321	11,012	90.7	0.1	2.5	2.7	0.7	3.3
Paper	322	2,117	82.2	D	9.4 r	4.4 r	0.8	2.9
Printing and related support activities	323	20,851	93.5	0.1	2.1	0.8	0.4	3.1
Petroleum and coal products	324	583	92.6	0.0	0.9	2.7 r	D	3.1
Chemicals	325	7,522	85.7	0.5	3.2	3.2	2.0	5.4
Pesticide, fertilizer, and other agricultural chemical manufacturing	3253	593	87.9	D	0.8	2.5	3.0 r	5.4 r
Pharmaceuticals and medicines	3254	1,365	83.7	0.7 r	5.7	3.2	1.6	5.1
Soap, cleaning compound, and toilet preparation manufacturing	3256	1,636	86.0	0.0	5.3 r	4.0 r	0.2	4.5
Other chemicals	other 325	3,927	86.3	0.7 r	1.8	2.8	2.7	5.7
Plastics and rubber products	326	8,087	71.9	1.6 r	6.8	8.5	7.2	4.0
Nonmetallic mineral products	327	7,749	89.2	D	1.9	3.2	1.1	4.7
Primary metals	331	2,537	72.5	3.4 r	8.9	6.4	5.6 r	3.1
Fabricated metal products	332	48,472	84.6	0.9	3.7	3.8	3.0	4.0
Machinery	333	18,558	77.6	0.8 r	6.7	5.0	5.5	4.4
Computer and electronic products	334	9,036	78.7	1.4	5.0	6.3	3.3	5.3
Communications equipment	3342	974	85.8	1.7 r	1.2 r	5.1 r	1.1 r	5.0
Semiconductor and other electronic components	3344	2,796	75.8	0.9 r	6.8	6.5	4.5	5.5
Navigational, measuring, electromedical, and control instruments	3345	3,909	78.7	1.8	4.8	6.7	3.5	4.5
Other computer and electronic products	other 334	1,359	80.5	1.0 r	4.2	5.3	2.0	7.0
Electrical equipment, appliances, and components	335	4,000	83.4	1.3	4.4	3.6	2.8	4.5
Transportation equipment	336	7,175	79.5	0.7	5.2	7.6	3.3	3.7
Automobiles, bodies, trailers, and parts	3361–63	4,565	75.9	0.6	6.4	10.1	4.0	3.0
Aerospace products and parts	3364	985	75.8	1.8 r	5.5	5.5	4.8	6.5
Other transportation	other 336	1,625	92.2	D	1.4	2.0 r	0.5	3.8 r
Furniture and related products	337	12,647	89.3	0.1	1.8	3.7	1.4	3.7
Miscellaneous	339	20,669	86.8	0.4	2.8	1.9	2.5	5.6
Medical equipment and supplies	3391	8,060	80.8	0.1	2.6	2.8	5.2	8.5
Other miscellaneous manufacturing	3399	12,608	90.7	0.6	3.0	1.3	0.7	3.7
Nonmanufacturing industries	11, 21–23, 42–81	4,587,586	94.0	0.2	0.8	0.5	0.2	4.3
Agriculture, forestry, fishing, and hunting	11	21,606	96.9	D	0.7 r	D	D	1.7
Mining, extraction, and support activities	21	14,969	95.3	0.0	1.0	0.5 r	D	3.1
Utilities	22	2,684	94.6	0.6	1.0	0.2	D	3.5
Construction	23	613,110	95.3	0.1	0.7	0.4	0.2	3.3
Wholesale trade	42	257,153	93.1	0.3	1.0	0.9	0.4	4.3
Retail trade	44–45	560,952	93.1	0.2	0.8	0.7	0.4	4.8
Transportation and warehousing	48–49	152,463	93.9	0.2	0.5	0.1 r	0.1	5.2
Information	51	61,638	92.7	0.3	1.5	0.7	0.2	4.6

TABLE 90

Use of robotics as a production technology for goods and services, by industry: 2016–18

(Number and percent)

Industry	NAICS code	Companies (number)	Did not use	Tested, but not used in production or service		Low use	Moderate use		High use		Don't know
Publishing	511	17,590	93.9	0.2		0.8	1.0		0.5	r	3.6
Newspaper, periodical, book, and directory publishers	5111	9,761	96.1	D		0.6	0.3	r	0.1	r	2.8
Software publishers	5112	7,828	91.0	0.5		1.1	1.8	r	1.1	r	4.5
Telecommunications	517	7,164	89.3	D		0.9	0.6		0.0		9.1
Data processing, hosting, and related services	518	8,918	91.5	0.9		2.7	0.7		0.1		4.1
Other information	other 51	27,965	93.2	0.2	r	1.7	0.6		0.1	r	4.2
Finance and insurance	52	200,857	94.4	0.1	r	0.5	0.2		0.1	r	4.7
Real estate and rental and leasing	53	255,783	95.3	0.1	r	0.3	0.1		D		4.1
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,812	99.2	0.0		0.0	0.0		0.0		D
Other real estate and rental and leasing	other 53	253,970	95.3	0.1	r	0.4	0.1		D		4.1
Professional, scientific, and technical services	54	695,672	94.0	0.3		1.0	0.8		0.4		3.5
Legal services	5411	152,243	96.4	0.0		0.2	0.0		D		3.3
Accounting, tax preparation, bookkeeping, and payroll services	5412	106,634	96.1	0.1		0.3	0.1	r	D		3.4
Architectural, engineering, and related services	5413	88,491	88.0	0.4		2.8	3.2		2.0		3.6
Specialized design services	5414	26,282	96.3	0.0		1.0	0.2	r	0.3	r	2.2
Computer systems design and related services	5415	95,950	91.6	1.0		1.8	1.0		0.4		4.2
Management, scientific, and technical consulting services	5416	132,989	95.0	0.3		1.0	0.4		0.1		3.2
Scientific research and development services	5417	9,798	83.2	1.4		4.3	3.4		2.3		5.4
Advertising, public relations, and related services	5418	27,677	95.4	0.1		0.5	0.6		0.1		3.3
Other professional, scientific, and technical services	5419	55,569	95.4	0.0		0.6	0.4	r	0.1	r	3.5
Management of companies and enterprises	55	2,409	88.3	D		1.9	r	0.0		D	7.7
Administrative and support and waste management and remediation services	56	287,807	95.4	0.1		0.6	0.2		0.1		3.6
Educational services	61	53,912	95.8	D		0.5	0.5		D		3.0
Health care and social assistance	62	519,556	93.5	0.1		1.0	0.8		0.3		4.3
Health care services	621–23	459,855	93.1	0.1		1.1	1.0		0.3		4.4
Social assistance	624	59,700	95.2	D		0.5	0.0		0.0		4.3
Arts, entertainment, and recreation	71	88,831	95.6	0.1	r	0.4	0.3		0.1	r	3.5
Accommodation and food services	72	453,059	93.4	0.1		0.5	0.2		0.1		5.7
Other services	81	345,125	93.6	0.2		0.6	0.3		0.3		5.0

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.

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.