

TABLE 84

Use of artificial intelligence 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	89.9	0.4	1.6	1.0	0.4	6.7
Manufacturing industries	31–33	217,565	89.4	0.4	1.5	1.0	0.4	7.3
Food	311	18,250	89.0	0.2 r	1.3	0.4	0.0	9.1
Beverage and tobacco products	312	7,723	93.1	0.2	0.9	0.5	D	5.2
Textile, apparel, and leather products	313–16	10,554	89.0	D	0.5	0.3	0.6 r	9.5
Wood products	321	11,012	90.9	0.6 r	1.0	0.3	0.4 r	6.8
Paper	322	2,117	94.6	0.2	0.7	D	0.0	4.3
Printing and related support activities	323	20,851	91.2	0.1	1.1	0.7	0.1 r	6.8
Petroleum and coal products	324	583	94.2	0.0	D	D	0.0	5.0
Chemicals	325	7,522	89.4	0.5	1.7	1.4	0.4 r	6.6
Pesticide, fertilizer, and other agricultural chemical manufacturing	3253	593	94.8	0.0	0.0	0.0	0.0	5.2
Pharmaceuticals and medicines	3254	1,365	90.0	0.6	1.4	1.4	D	6.5
Soap, cleaning compound, and toilet preparation manufacturing	3256	1,636	89.5	0.9 r	1.8	1.0 r	0.0	6.8
Other chemicals	other 325	3,927	88.6	0.3 r	2.0	1.7	0.7 r	6.7
Plastics and rubber products	326	8,087	89.3	1.1 r	1.8	1.0	0.1 r	6.7
Nonmetallic mineral products	327	7,749	90.6	0.0	1.1 r	0.5	0.1	7.7
Primary metals	331	2,537	93.0	0.5 r	1.1	0.6	0.3 r	4.5
Fabricated metal products	332	48,472	90.2	0.1 r	1.6	1.0	0.5	6.6
Machinery	333	18,558	86.2	0.7	2.4	1.8	0.6 r	8.3
Computer and electronic products	334	9,036	85.8	1.6	2.5	1.5	0.9	7.7
Communications equipment	3342	974	86.6	1.4 r	1.7 r	2.8 r	0.9 r	6.6
Semiconductor and other electronic components	3344	2,796	87.6	0.8 r	2.5	0.9	0.6 r	7.6
Navigational, measuring, electromedical, and control instruments	3345	3,909	84.1	2.3	2.4	1.4	1.2 r	8.6
Other computer and electronic products	other 334	1,359	86.3	1.3 r	3.4	2.4	0.6	6.0
Electrical equipment, appliances, and components	335	4,000	87.3	1.0	2.3	2.3	0.8 r	6.3
Transportation equipment	336	7,175	85.9	0.4	2.8	1.8 r	0.3	8.8
Automobiles, bodies, trailers, and parts	3361–63	4,565	83.4	0.3	3.5	2.6 r	0.4	9.8
Aerospace products and parts	3364	985	85.6	1.3 r	2.4	0.8	D	9.6
Other transportation	other 336	1,625	92.9	D	1.0	D	0.0	5.5
Furniture and related products	337	12,647	90.8	0.2 r	1.2	1.1	0.8 r	5.9
Miscellaneous	339	20,669	88.0	0.4 r	1.2	1.4	0.6 r	8.4
Medical equipment and supplies	3391	8,060	84.9	0.2	1.6	1.5	0.5	11.3
Other miscellaneous manufacturing	3399	12,608	89.9	0.6 r	1.0	1.4	0.7 r	6.4
Nonmanufacturing industries	11, 21–23, 42–81	4,587,586	90.0	0.4	1.6	1.0	0.4	6.6
Agriculture, forestry, fishing, and hunting	11	21,606	95.2	D	0.8 r	D	D	3.4
Mining, extraction, and support activities	21	14,969	92.7	0.1	1.5 r	0.1	D	5.4
Utilities	22	2,684	90.5	0.1	0.9	1.4 r	D	7.0
Construction	23	613,110	93.0	0.1	0.9	0.6	0.2	5.2
Wholesale trade	42	257,153	90.3	0.3	1.1	0.7	0.3	7.3
Retail trade	44–45	560,952	90.5	0.3	1.3	0.8	0.3	6.8
Transportation and warehousing	48–49	152,463	88.8	0.3	0.9	1.1	0.3	8.6
Information	51	61,638	83.4	2.6	3.2	2.0	1.4	7.4

TABLE 84

Use of artificial intelligence 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	81.8	3.8	4.0	1.8	1.7	6.9
Newspaper, periodical, book, and directory publishers	5111	9,761	89.6	0.4 r	2.7	0.7	0.4 r	6.2
Software publishers	5112	7,828	72.0	8.0	5.6	3.3	3.4	7.7
Telecommunications	517	7,164	83.6	0.8	2.2	1.4	0.2 r	11.8
Data processing, hosting, and related services	518	8,918	74.8	4.6	5.5	4.2	3.5	7.4
Other information	other 51	27,965	86.9	1.8	2.2	1.6	0.8	6.7
Finance and insurance	52	200,857	87.0	0.4	2.1	1.4	0.9	8.2
Real estate and rental and leasing	53	255,783	89.9	0.5	1.9	1.1	0.3	6.3
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1,812	97.6	0.0	0.0	0.0	0.0	D
Other real estate and rental and leasing	other 53	253,970	89.9	0.5	1.9	1.1	0.3	6.3
Professional, scientific, and technical services	54	695,672	86.8	1.3	2.9	1.7	0.9	6.4
Legal services	5411	152,243	88.1	0.4	2.5	0.9	0.5	7.6
Accounting, tax preparation, bookkeeping, and payroll services	5412	106,634	87.2	0.5	2.5	1.3	0.8	7.7
Architectural, engineering, and related services	5413	88,491	90.2	0.6	1.7	1.2	0.5	5.8
Specialized design services	5414	26,282	89.7	1.0	2.6	1.6	D	4.9
Computer systems design and related services	5415	95,950	78.3	4.1	5.9	4.0	2.3	5.4
Management, scientific, and technical consulting services	5416	132,989	88.3	1.5	2.9	1.4	0.7	5.2
Scientific research and development services	5417	9,798	81.7	2.3	3.6	2.7	2.5	7.2
Advertising, public relations, and related services	5418	27,677	87.9	1.2	2.4	2.1	0.5	5.9
Other professional, scientific, and technical services	5419	55,569	88.3	0.7	2.4	1.1	0.5	7.0
Management of companies and enterprises	55	2,409	88.4	0.0	D	D	D	7.8
Administrative and support and waste management and remediation services	56	287,807	91.4	0.3	1.4	0.9	0.3	5.7
Educational services	61	53,912	92.5	0.2	1.9	0.6 r	0.4	4.4
Health care and social assistance	62	519,556	90.0	0.2	1.6	1.1	0.5	6.6
Health care services	621–23	459,855	89.9	0.2	1.7	1.2	0.5	6.5
Social assistance	624	59,700	91.1	0.2 r	1.1	0.5	D	6.9
Arts, entertainment, and recreation	71	88,831	93.0	0.2 r	1.0	0.5	D	5.1
Accommodation and food services	72	453,059	90.0	0.2	1.0	0.6	0.3	7.9
Other services	81	345,125	90.6	0.2	1.0	0.6	0.2	7.4

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.