



Survey: Americans' Perceptions of the Future of Work

What Americans really think about working with robots and how they're preparing for automation at work

November 2019



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Executive Summary

Over the past five years, both U.S. and global search interest around “future of work” has steadily grown — and there is no slowing of media coverage or online discussion about the topic. In 2019 alone, articles with headlines such as “Are Robots Competing for Your Job?” and “Robots Will Take Jobs From Men, the Young and Minorities” garnered thousands of shares on social media.

We wanted to get a sense of what working Americans are really thinking and feeling about the impact of automation at work, their attitudes about working with these new technologies, and how their employers are helping prepare them for the future of work. In early October 2019, we surveyed 1,500 employed adult Americans across the U.S. to uncover their perceptions of and beliefs about the future of work.

Respondent Snapshot

Age Groups

18 to 24 (10.0%)
25 to 34 (29.73%)
35 to 44 (25.73%)
45 to 54 (18.93%)
54+ (15.6%)

Gender

Female (59.0%)
Male (41.0%)

U.S. Region

Midwest (22.29%)
Northeast (20.35%)
West (16.60%)
South (40.76%)

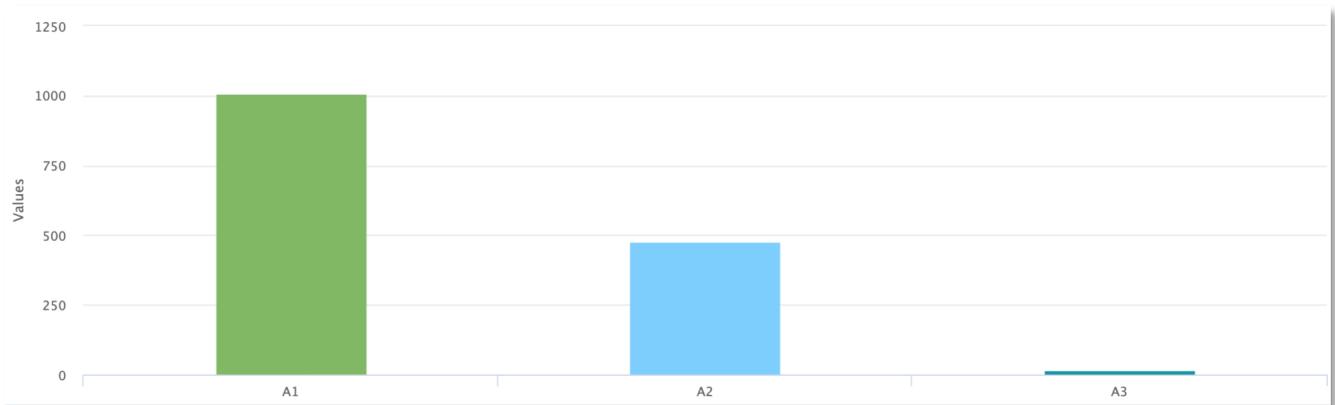
Survey Results

In what follows, we share working Americans' responses to our 17-question survey, conducted by Pollfish on October 4, 2019.

Question 1:

What do you think of when you hear the words “automation technologies” or “robots” when used in conversations about the workplace?

#	ANSWERS	PERCENT	COUNT
A1	I think of tools/machines/software that could assist me with tasks and make my job more efficient.	67.07%	1,006
A2	I think of tools/machines/software that could take my job.	31.93%	479
A3	Other.	1.00%	15



Given ample fear-based, rhetoric-filled headlines such as “How Robots Are Stealing Human Jobs and Threatening Our Future” and “The Robots Are Coming” this year, we felt it was necessary to begin our survey by assessing whether American workers viewed automation technologies as tools that could help them or if they viewed these technologies as something that could replace their jobs.

In contrast to these frequent fear-inducing headlines, we learned American workers are less fearful of automated technologies in the workplace than it may seem. Over two-thirds of surveyed Americans — 67.07% — have a positive connotation with intelligent automation-related terminology.

Additionally, American workers in the 25 to 34 age group, predominantly Millennials, and those living in the western U.S. seem to feel most positive about these workplace technologies. ([According to Pew Research Center](#), “Anyone born between 1981 and 1996 — ages 23 to 38 in

2019 — is considered a Millennial, and anyone born from 1997 onward is part of a new generation” — Gen Z.)

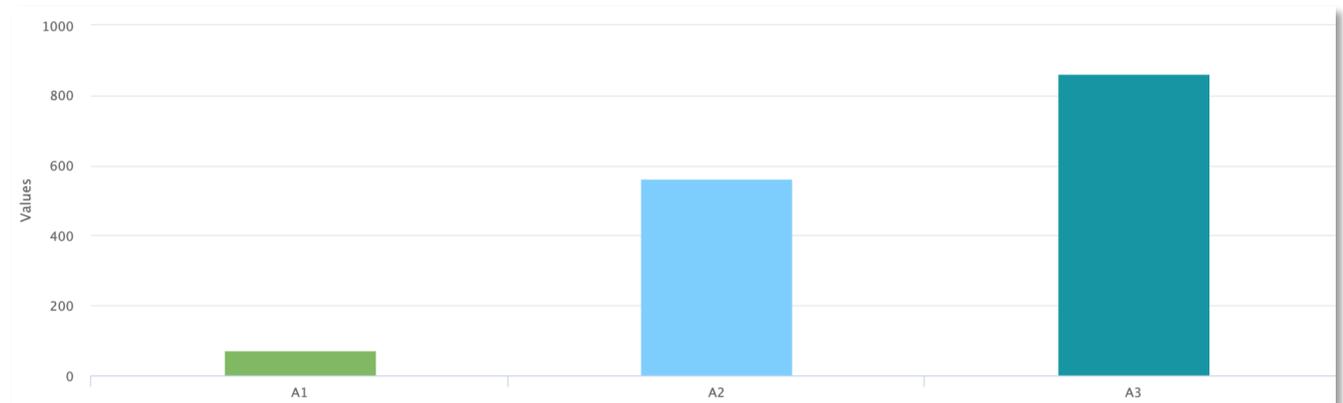
Interestingly, the western region had the highest group of respondents selecting Answer 1 (“I think of tools/machines/software that could assist me ...”) of any region — 72.58% of working Americans in the west, to be exact; a similar pattern can be seen with the 25 to 34 age group — 73.32% also believe that intelligent automation tools could make their work more efficient.

The 15 respondents who selected “Other” most often note that they have no opinion on this.

Question 2:

Have you ever lost a job due to the implementation of new automation technologies?

#	ANSWERS	PERCENT	COUNT
A1	Yes, I have.	4.93%	74
A2	No, I have not, but I do worry about this.	37.60%	564
A3	No, I have not, and I do not worry about this.	57.47%	862



There’s no shortage in reports about the impact automation has already had on industries that involve workers performing repetitive tasks. Ample reports also exist regarding the impact automation will have on jobs over the next decade. Because of this, we wanted to assess if any of our respondents have ever lost a job due to the implementation of these new technologies.

While an overwhelming majority of American workers have never lost a job due to new automation technologies at their workplace — and most also note they do not worry about losing a job due to intelligent automation — nearly 5% say they have faced job loss.

It is not much different for the manufacturing industry, despite the heavy press coverage. Of those who report working in manufacturing or warehousing jobs (165 people), only 6.67% (11

people) report job loss due to automation, just slightly higher than the total respondent answer, 4.93%.

The 45 to 54 age group, predominantly Gen X'ers, is most concerned about potential job loss due to the implementation of new automation technologies (44.72%).

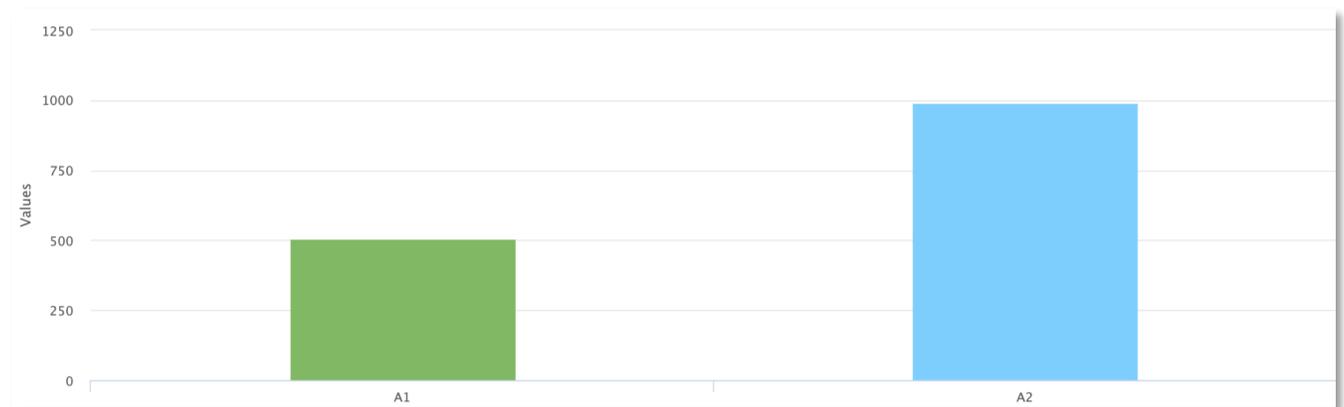
Respondents in the northeast region of the U.S. were impacted most with job loss — 7.89% of northeastern American workers say they have experienced job loss due to the implementation of new automation technologies.

Furthermore, southerners are least worried about job loss; 62.07% of this region's employed adults say they have neither faced job loss due to automation, nor do they worry about it.

Question 3:

Has any automation program in 2019 saved you from doing parts of your job that were repetitive and boring?

#	ANSWERS	PERCENT	COUNT
A1	Yes.	33.80%	507
A2	No.	66.20%	993



Companies often pursue implementing robots and automation in the workplace to assist with repetitive tasks in order to save both time and money. Whether dealing with mind-numbing data entry or exhausting, repetitive physical labor — automating frequently performed time-consuming tasks should ideally elevate employees' productivity and creativity, among a list of other potential benefits.

Two-thirds of surveyed American workers — 66.20% indicate that automation technologies have not yet assisted them from repetitive tasks this year. However, the 25 to 34 age group —

Some examples respondents shared with us include:

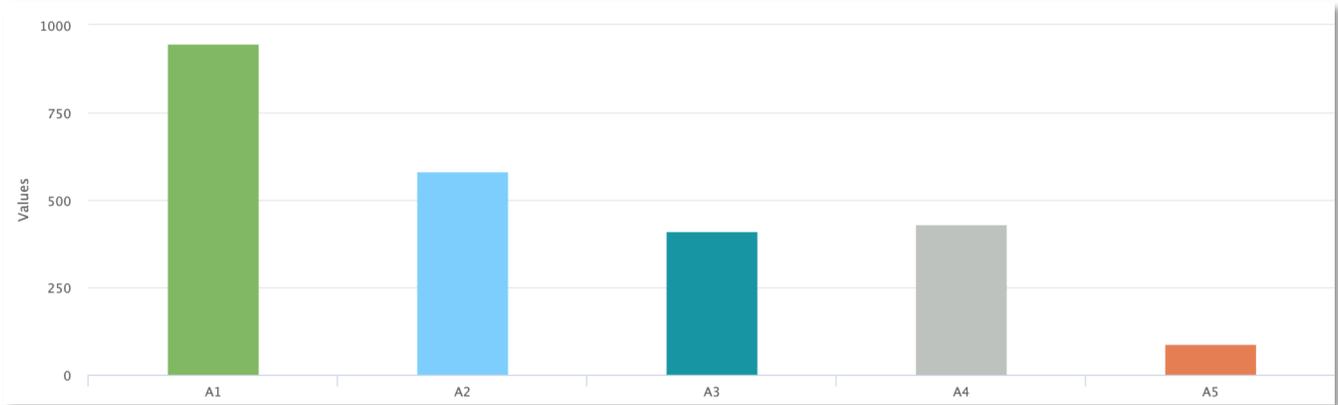
- “Answering phone calls at work”
- “Confirmation phone calls”
- “Sending follow-up emails”
- “Completing spreadsheets”
- “Tedious organizing and filing”
- “Keeping track of incoming data”
- “Filling out the same papers over and over again”
- “Scheduling meetings”
- “Sending reminder notices for payment”
- “Loading books onto a conveyor belt to be three-hole punched”
- “I wish some of the labor was replaced with forklift machine”
- “Tracking payments and completed job orders”
- “Placing nuts and bolts”

This is in alignment with 2017 [research from SnapLogic](#) that reports “90% of employees are being burdened with boring and repetitive tasks,” which include: “searching for data, data entry, data processing and analysis, and combining data from multiple sources.” Furthermore, a 2018 CIO Insight report reveals that repetitive tasks cause U.S. businesses to waste [\\$1.8 trillion annually](#).

Question 5:

How do you think you could be better at your job if certain tasks were automated for you?

#	ANSWERS	PERCENT (RESPONDENTS)	PERCENT (ANSWERS)	COUNT
A1	Automating certain tasks would allow me to do more in less time.	63.27%	38.53%	949
A2	Automating certain tasks would reduce errors in my work.	38.80%	23.63%	582
A3	Automating certain tasks would allow me to be more creative in my work.	27.47%	16.73%	412
A4	Automating certain tasks would allow me to focus more on long-term strategic planning.	28.80%	17.54%	432
A5	Other.	5.87%	3.57%	88



Given the ample opportunity for automating tedious tasks that employees don't enjoy doing, we asked American workers how they might be better at their job if some tasks were automated for them.

Respondents were able to choose multiple answers for this question. A majority of respondents, 63.27%, say they think they could be better at their jobs if automating certain tasks allowed them to do more in less time. The 18 to 24 age group responded with this answer most frequently — 70.67% of them.

The 88 respondents who selected “Other” most indicated that that they didn't see where automation could apply to their job. Those who felt otherwise responded with some of the following, regarding ways automation could help them improve their work:

- “Automation in certain parts of my job could make them safer”
- “Reduce risk of repetitive injuries, like carpal tunnel syndrome”
- “It would save me time so I could focus on my actual job”

Question 6:

Does the idea of humans and automation technologies working together interest you?

#	ANSWERS	PERCENT	COUNT
A1	Yes, I think I would be even more effective in my job if I worked with automation technologies.	72.53%	1,088
A2	No, I prefer not to work with any automation technologies in my job.	27.47%	412



According to [a December 2018 Pew Research Center survey](#), “[a]round half of U.S. adults (48%) say job automation through new technology in the workplace has mostly hurt American workers.” While nearly half of American adults may have previously felt that new technology at work led to a negative impact on American workers, we were curious as to how Americans would respond to the idea of actively collaborating with these technologies. It turns out that American workers are more open to the idea of working with automation than previous reports show.

Nearly three-fourths of American workers, 72.53%, say the idea of humans and automation technologies working together interests them — 79.33% of the 18 to 24 age group say they believe they would be even more effective in their jobs if they worked with automation technologies, compared to 63.68% of the 54 and older age group.

Additionally, 77.30% of the northeastern U.S. respondents believe they would be even more effective in their jobs if they worked with automation technologies, compared to 67.87% of the midwestern U.S.

Question 7:

If you were looking for a new job, would a company investing in new automation technologies make you more or less likely to apply there?

#	ANSWERS	PERCENT	COUNT
A1	More likely to apply.	67.67%	1,015
A2	Less likely to apply.	32.33%	485



The Robotic Process Automation (RPA) market “will reach \$1.7 billion in 2019 and \$2.9 billion in 2021,” [according to a 2018 Forrester report](#). Companies will continue investing heavily in RPA solutions, and perhaps that explains why American workers respond so positively to the idea of working with these kinds of companies in our next question.

Furthermore, one of the key benefits of implementing workplace automation technologies is employee satisfaction. [According to a 2019 Forbes Insights study](#) in collaboration with Kofax, “92 percent [of surveyed senior executives] indicated an improvement in employee satisfaction as a result of these [RPA] initiatives.” They add: “52 percent said employee satisfaction increased by 15 percent or more after implementing RPA.”

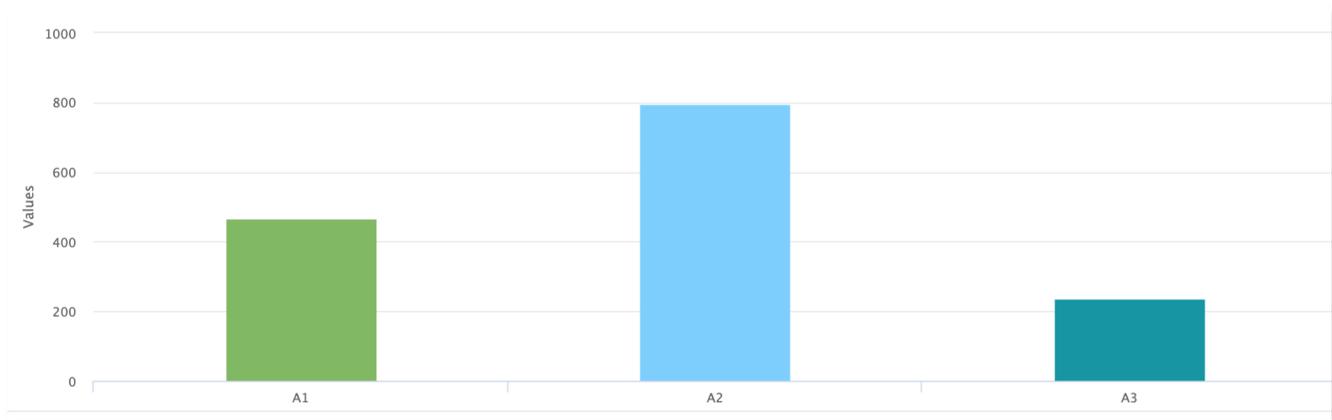
Over two-thirds of American workers say that they would be more likely to apply to work for a company investing in new automation technologies. In a similar pattern to Q6, the 18 to 24 age group are most likely to apply (71.33%), compared to the 54 and older group (58.97%).

And while responses by region are all quite similar, Americans living in the midwest most report being less likely to apply to work for a company investing in new automation technologies (33.93%); midwesterners are also the smallest group to say they believe they would be more effective in their jobs if they worked with automation technologies (Q6).

Question 8:

What will the impact of automation on the American workforce be in 2020?

#	ANSWERS	PERCENT	COUNT
A1	I think we can expect significantly more of the workload to be handled by automation technologies.	31.07%	466
A2	I think we can expect a bit more of the workload to be handled by automation technologies.	53.07%	796
A3	I do not think we can expect much more of the workload to be handled by automation technologies.	15.87%	238



A [2018 Pew Research Center survey reveals](#) that 82% of adults in the U.S. say “robots and computers will definitely or probably do much of the work currently done by humans” by 2050. Knowing this, we wanted to explore how much of an impact Americans think automation will have on the U.S. workforce in the more immediate future — 2020.

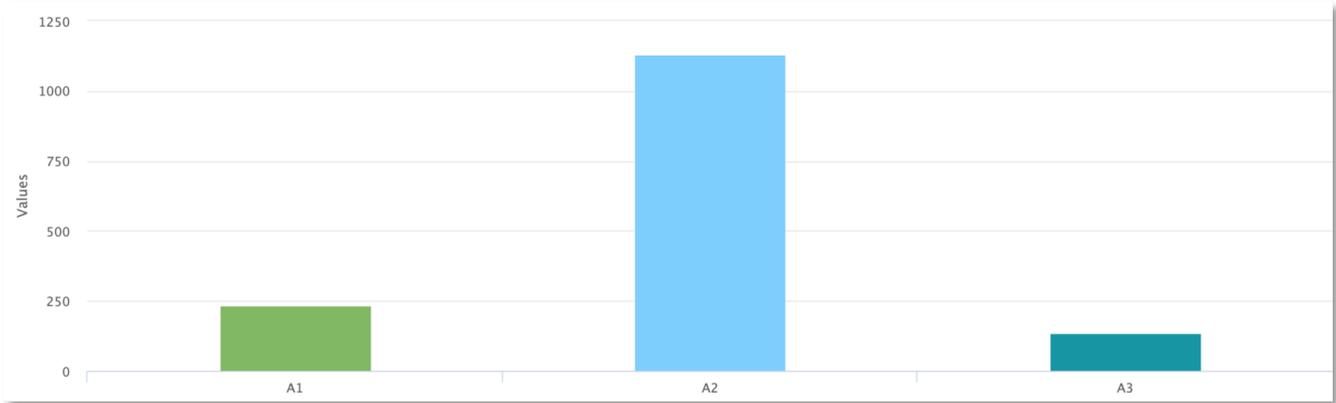
It seems our respondents’ beliefs about the future impact of automation on the American workforce are quite consistent with Pew’s 2018 survey respondents’ beliefs — 84.14% of American workers (compared to Pew’s 82% findings) believe that we can expect some additional portion of the workload to be completed by automation technologies in 2020. Fewer than a sixth of respondents, however, believe we should not expect much of the workload will be handled by automation next year (15.87%). These views are fairly consistent among all surveyed age groups.

Among U.S. regions, however, just 12.90% of western U.S. respondents believe we should not expect much of the workload to be handled by automation next year, compared to 20.07% of northeastern respondents.

Question 9:

Do you view your job as being at-risk of elimination due to new automation technologies anytime within the next decade?

#	ANSWERS	PERCENT	COUNT
A1	Yes.	15.67%	235
A2	No.	75.40%	1,131
A3	I have not thought about this before.	8.93%	134



A [2018 Fortune/SurveyMonkey poll](#) reveals that 72% of industry leaders (who attended Fortune’s annual Brainstorm Tech conference) “see AI taking away more jobs than it creates in 10 years.” Everyday American workers overwhelmingly do not view their jobs as at risk, however.

American workers are optimistic. Over three-fourths (75.40%) of surveyed Americans say they do not view their jobs as being at risk of elimination due to new automation technologies anytime within the next decade.

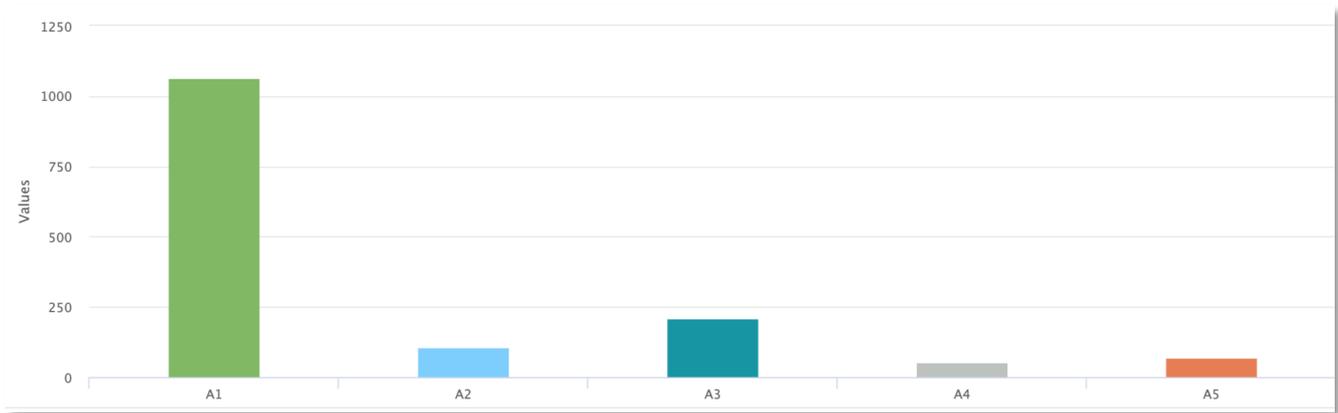
The two age groups that most view their jobs as being at risk of elimination due to new automation technologies within the next decade are the 18 to 24 age group (18.67%), predominantly Gen Z’ers, and the 35 to 44 age group (18.91%), a mix of Millennials and Gen X’ers.

Northeastern working Americans were most unsure regarding the potential impact in 10 years — 10.86% of northeasterners have not yet thought about whether or not their jobs are at risk of elimination due to new automation technologies, compared to just 6.05% of American workers in the western U.S.

Question 10:

How many people do you know personally who have lost their jobs due to new automation technologies implemented at their work?

#	ANSWERS	PERCENT	COUNT
A1	0.	70.87%	1,063
A2	1.	7.13%	107
A3	2-3.	14.00%	210
A4	4-5.	3.47%	52
A5	More than 5.	4.53%	68



In addition to hearing from working Americans as to how automation technologies may have led to job loss for them — we wanted to learn how many other people, if any, our respondents personally know who may have lost a job because of automation.

Fewer than 5% of surveyed Americans say they have faced job loss due to automation (Q2), and over two-thirds (70.87%) of surveyed Americans say they do not know anyone who has lost a job due to automation technologies implemented at their place of work. However, 7.13% of American workers say they know at least one person who has lost a job due to automation.

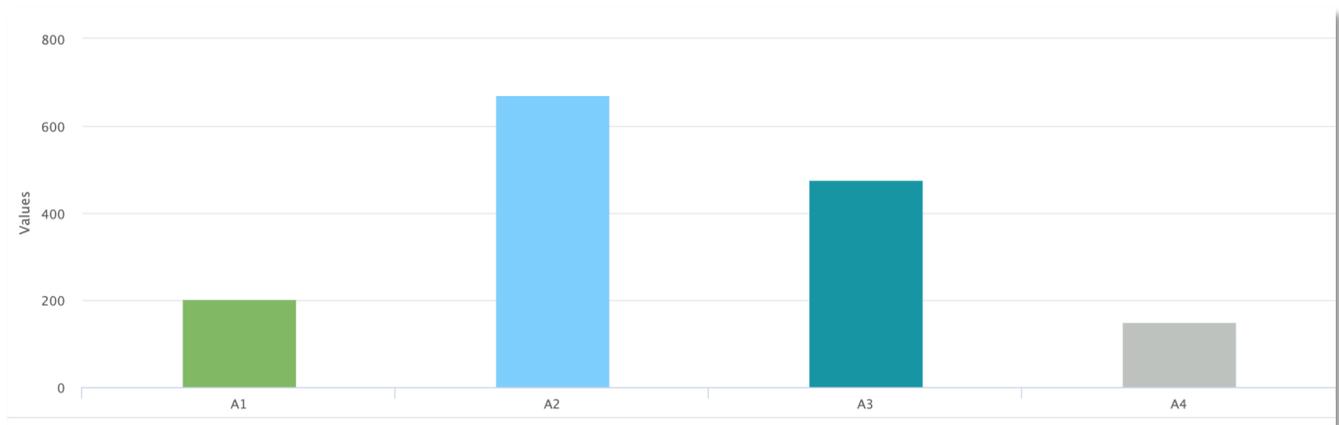
Of those who report working in manufacturing or warehousing jobs (165 people), 34.55% (57 people) report knowing at least one person who has lost a job due to automation — indicating this group knows people who have faced job loss because of automation more than the average American does.

The largest group of respondents who say they personally know someone who has lost a job due to automation are northeasterners (8.55%). This is in alignment with our survey learnings that reveal the U.S. region most impacted by job loss due to the implementation of new automation technologies are also respondents in the northeast region (Q2).

Question 11:

Is your employer providing training and/or resources to help you keep current with changes in technology?

#	ANSWERS	PERCENT	COUNT
A1	Yes, a lot.	13.53%	203
A2	Yes, some.	44.80%	672
A3	No.	31.73%	476
A4	I am not sure.	9.93%	149



[According to Reuters](#), “U.S. factories and warehouses acquired more robots [in 2018] than ever before.” While this statistic isn’t a surprising one, we were especially curious to know how companies are upskilling and reskilling their employees.

A majority of survey respondents, 58.33%, say their employers *are* indeed providing either some (44.80%) or a lot (13.53%) of training and/or resources to help them keep current with changes in technology.

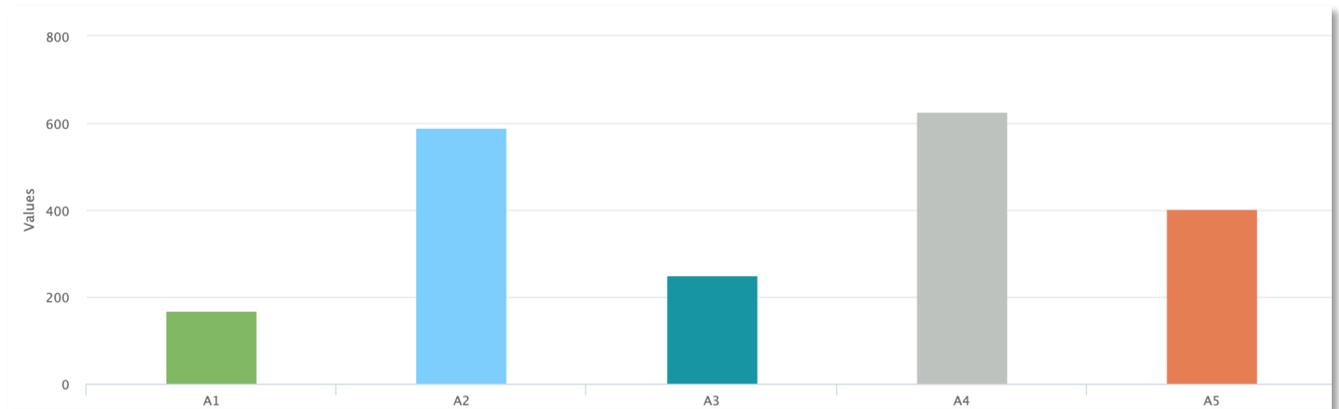
Northeastern Americans most responded “No” out of all surveyed U.S. regions, with over one-third (35.20%) saying their current employer has not yet offered any training and/or resources to help them keep current with changes in technology.

The area of the U.S. with the most proactive employers? The west — 60.89% say they say their employers are providing either some form of training and/or resources to help them keep current with changes in technology, followed closely by the midwest at 60.06%.

Question 12:

What are you doing to stay current with the continuous and rapid changes in workplace technologies?

#	ANSWERS	PERCENT (RESPONDENTS)	PERCENT (ANSWERS)	COUNT
A1	I plan to take college or vocational trade courses.	11.20%	8.25%	168
A2	I plan to take advantage of more professional development opportunities at work.	39.27%	28.93%	589
A3	I plan to take courses from online learning platforms like Coursera, LinkedIn Learning, Lynda, etc.	16.73%	12.33%	251
A4	I plan to stay informed about them and learn how to use them through independent online research.	41.73%	30.75%	626
A5	I do not yet have any current plans to address this.	26.80%	19.74%	402



In addition to learning how companies are supporting employees' further training, we also hoped to get a sense of how employed Americans are staying current in their field, amidst ever-changing advances in workplace technologies.

Respondents were able to choose multiple answers for this question. Nearly half, 41.73%, of all respondents say they plan to stay informed about changes in workplace technologies and learn how to use them through independent online research, followed by 39.27% indicating they plan to take advantage of more professional development opportunities at work. Just 11.20% of survey respondents say they plan to take college or vocational trade courses in order to stay current with the continuous and rapid changes in workplace technologies.

While younger American workers are making plans to stay current, 32.04% of American workers in the 45 to 54 age group and 41.45% of those in the 54 and older age group responded more

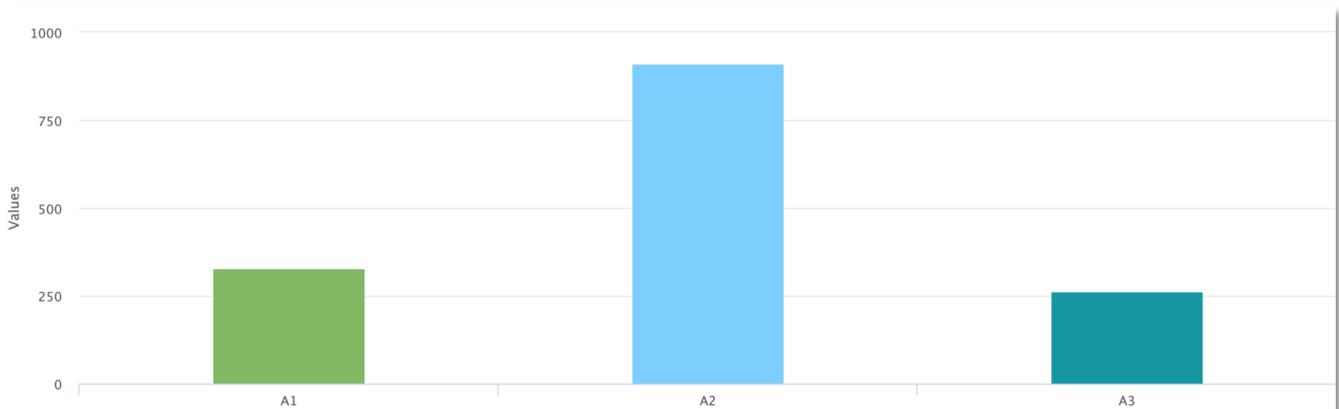
than any other age group that they do not yet have any plans to address staying current with the continuous and rapid changes in workplace technologies. The age group most open to taking college or vocational trade courses in order to stay current? It's exactly who you think, Gen Z'ers — 21.33% of those in the 18 to 24 age group have future plans to jump back in the classroom.

American workers in the western U.S. say, more than any other U.S. region, that they plan to take advantage of more professional development opportunities at work (42.74%). Western Americans are also the regional group that most reported plans to take college or vocational trade courses in order to stay current (14.52%).

Question 13:

Has the company you work for had open discussions about the potential impact of automation technologies at your workplace?

#	ANSWERS	PERCENT	COUNT
A1	Yes, they have had discussions about the potential impact of automation technologies.	21.87%	328
A2	No, they have not had any discussions about the potential impact of automation technologies.	60.67%	910
A3	I am not sure if they have had any discussions about this.	17.47%	262



While companies like [Amazon](#) are offering their employees training and resources to help them keep current with changes in technology, our respondents say that their employers are not having many conversations about the impact on automation technologies where they work.

Fewer than a quarter (21.87%) of surveyed American workers report ever having had discussions about the potential impact of automation technologies at their workplace; 60.67% of all respondents say they have never had any discussions about it.

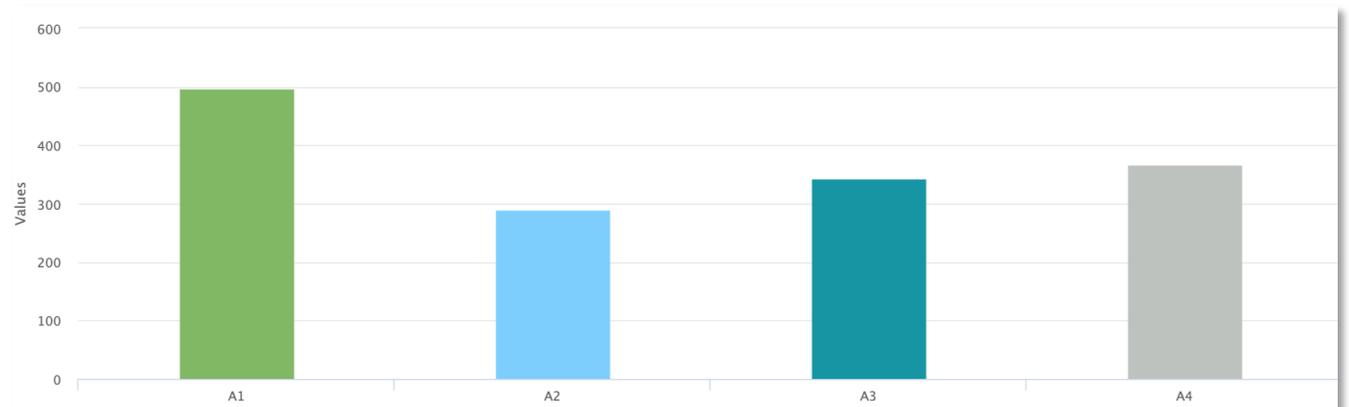
Gen Z'ers report having some kind of discussions about the potential impact of automation technologies at their workplace more than any other age group surveyed — 28% of them; this contrasts greatly from just 16.24% of the 54 and older age group indicating they have ever had these conversations.

The western region reports more than any other surveyed region that they have had these open conversations about automation technologies at work — 26.21% of workers in the western U.S., compared to just 19.52% of American workers in the midwest.

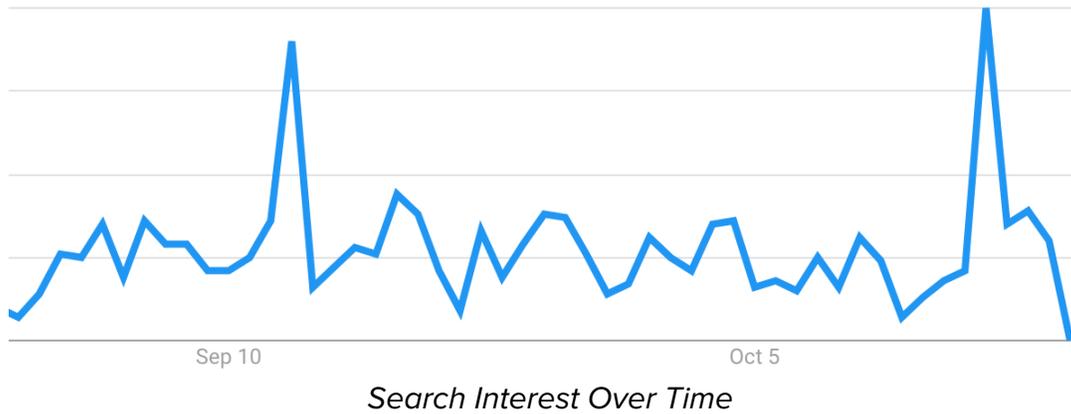
Question 14:

Is it important to you that the 2020 presidential candidates address the subject of workplace automation and the future of work?

#	ANSWERS	PERCENT	COUNT
A1	Yes, I want to hear each of the candidates focus on it.	33.13%	497
A2	No, I do not want to hear any of the candidates focus on it.	19.40%	291
A3	I am not sure.	22.93%	344
A4	I do not care either way.	24.53%	368



A Google Trends search with the term “universal basic income” will reveal large spikes on September 13, 2019 and October 16, 2019 — both just one day after 2020 Democratic Party presidential debates, where the concept — and the future of work — was discussed.



Given the ample Googling going on by Americans related to this concept, we wanted to learn more of American workers’ interest in hearing presidential candidates discuss the future of work going forward.

Approximately one-third (33.13%) of surveyed American workers say they would like to hear the 2020 presidential candidates address workplace automation and the future of work.

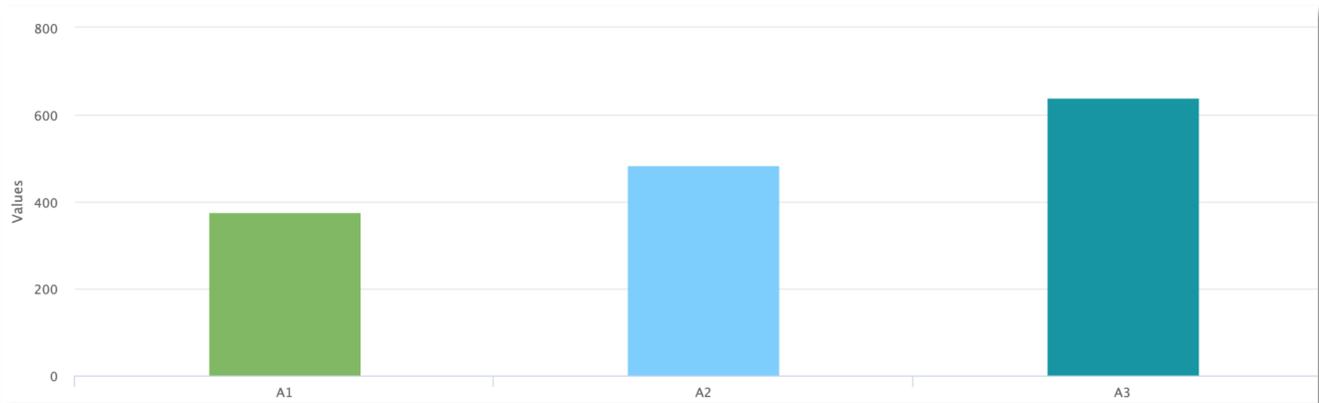
The age group most eager to hear presidential candidates discuss this? Gen Z’ers. 35.33% of the 18 to 24 age group say they want this to be a discussion focus, compared to just 27.35% of the 54 and older age group.

And while every U.S. regional group’s top-selected answer to this question indicates an interest in hearing presidential candidates address workplace automation and the future of work, the western U.S. is most interested (37.90%), followed closely by northeasterners (36.51%), southerners (31.20%) and finally midwesterners (29.43%).

Question 15:

Does the U.S. government have a responsibility to compensate people whose jobs are eliminated because of workplace automation?

#	ANSWERS	PERCENT	COUNT
A1	Yes, and U.S. welfare programs should support this.	25.07%	376
A2	Yes, and a Universal Basic Income program should be established to address this.	32.33%	485
A3	No, this is not the U.S. government's responsibility.	42.60%	639



With frequent reports regarding a myriad of ways automation will impact the workforce, we asked American workers about whose responsibility it is to support those who may face job loss in the future.

Nearly half (42.60%) of surveyed American workers do not believe the U.S. government has a responsibility to compensate people whose jobs are eliminated because of workplace automation. Of those who do (57.40%), 25.07% believe U.S. welfare programs are the answer, while nearly one-third (32.33%) of surveyed American workers believe a Universal Basic Income program should be established to address jobs eliminated due to workplace automation.

The top answer among employed Gen Z'ers and Millennials? 36.67% of the 18 to 24 age group, and 36.77% of the 25 to 34 age group say Universal Basic Income should address this.

While each U.S. region's top-selected answer to this question is that compensating people whose jobs are eliminated because of workplace automation is not the U.S. government's responsibility, every region is more open to the idea of supporting Americans whose jobs are eliminated through a Universal Basic Income program compared to using U.S. welfare programs. Northeastern Americans are more willing to consider a Universal Basic Income program (34.54%) compared to any other region.

Question 16:

Would you be more willing to take direction from a human boss or a software program?

#	ANSWERS	PERCENT	COUNT
A1	A human boss.	86.93%	1,304
A2	A software program.	13.07%	196



Our survey findings show a more optimistic outlook among American workers than some news headlines may reveal, but it seems Americans’ openness to automation technologies at work only goes so far.

While nearly three-fourths of American workers say the idea of humans and automation technologies working together interests them (Q6), very few are open to the idea of taking direction from anything non-human — overwhelming, survey respondents say they are more willing to take direction from a human boss (86.93%) over a software program (13.07%). This sentiment is shared among all surveyed age groups and U.S. regions.

Question 17:

Which career fields do you think will be most impacted by automation within the next five years?

#	ANSWERS	PERCENT (RESPONDENTS)	PERCENT (ANSWERS)	COUNT
A1	Agriculture.	26.13%	7.37%	392
A2	Construction.	20.93%	5.90%	314
A3	Finance and Insurance.	24.53%	6.92%	368
A4	Legal Services.	7.93%	2.24%	119
A5	Military.	16.27%	4.59%	244
A6	Manufacturing.	65.33%	18.42%	980
A7	Mining.	22.87%	6.45%	343
A8	Retail.	35.80%	10.09%	537
A9	Hotel and Food Services.	21.40%	6.03%	321
A10	Healthcare.	23.60%	6.65%	354
A11	Telecommunications.	50.40%	14.21%	756
A12	Transportation.	37.73%	10.64%	566
A13	Other.	1.73%	0.49%	26



While a 2019 CNBC/SurveyMonkey [Workplace Happiness Index report](#) reveals that 72% of respondents say technology is not threatening their job, Americans do have fairly strong views regarding the impact on others' career fields.

Respondents were able to choose multiple answers for this question. American workers overwhelmingly believe (65.33%) that the manufacturing field, followed by telecommunications (50.40%) and transportation (37.73%), will be most impacted by automation within the next five years. Manufacturing, followed by telecommunications, are the top two answers shared by all surveyed age groups and U.S. regions.

The 26 respondents who selected “Other” share an array of views — but most comments focus on childcare and education.

What’s This Mean?

There’s no doubt that companies are increasingly investing in intelligent automation, and these investments will surely have an impact on the workforce — but experts agree that we also still need skilled workers. A March 2019 *Insights by Stanford Business* article, [“Our Misplaced Fear of Job-Stealing Robots,”](#) says that “fears that rapid advances in artificial intelligence, machine learning and automation will leave all of us unemployed are vastly overstated.” However, this doesn’t discount the need to invest in your employees, offering regular opportunities for upskilling and reskilling.

While our findings reveal that younger demographics—particularly Gen Z’ers ([often coined as “digital natives”](#)) seem to be generally optimistic about intelligent automation in the workplace, older demographics appear more uncertain about such workplace implementations. [Recent findings by Clutch](#) report half of those surveyed, ages 55 and older, “have not been offered job retraining in the past three years.” Some companies, like Georgia-based TSYS, are responding. The Wall Street Journal’s recent feature, [“How a Company’s Aging Workforce Retrained Itself for the Cloud,”](#) highlights how TSYS is investing in retraining its 4,500 tech staff — 35% of its employees: “TSYS had many of them take dozens of hours of online courses. Many also have gone through an immersive two-week digital boot camp, where they use the online training to create a new product or feature.”

What kinds of skills are most needed in the future of work? [The World Economic Forum reports](#) that skills in most demand “include analytical thinking and active learning as well as skills such as technology design, highlighting the growing demand for various forms of technology competency.” They add: “Human skills such as creativity, originality and initiative, critical thinking, persuasion and negotiation will likewise retain or increase their value, as will attention to detail, resilience, flexibility and complex problem-solving.”

No matter where your beliefs of automation and employment impact reside, this survey is a snapshot of where American workers believe we are in the journey today — as automation, digital transformation and industry innovation continues to evolve.