Pew Research Center polling on public attitudes towards workforce automation

Lee Rainie
Director, Internet and Technology Research
Beyond elites, how do average Americans view workplace automation and the future?


Methodology

• Nationally representative survey of 4,135 U.S. adults, conducted May 1-15, 2017 using our American Trends Panel

Research objectives

• Examine how automation (and technology more broadly) is currently impacting American workers
• Test awareness of idea that machines might be able to do many jobs currently done by humans, and the likely outcomes
• Gauge the jobs that the public views as being most at risk
• Test responses to common policy prescriptions
• Also included Q’s on driverless vehicles, robot caregivers, and hiring algorithms
Workers express more positive than negative views on the overall impact of technology on their careers – to date

Technology has ___ for career advancement

- Decreased their opportunities: 13%
- Increased their opportunities: 46%
- Had no impact either way: 40%

% of U.S. workers who say the following

Technology has generally made their work ...

- Less interesting: 12%
- More interesting: 53%
- Had no impact either way: 34%

Technology has generally made their work ...

- Less demanding: 29%
- More demanding: 39%
- Had no impact either way: 32%
Workers w/ a college degree see more positive impacts from technology

% of workers in each group who say that technology has generally...

Workers with a college degree see more positive impacts from technology

% of workers in each group who say these technologies have had a ___ impact on their job or career

<table>
<thead>
<tr>
<th>Technology</th>
<th>College grad+</th>
<th>Some college</th>
<th>HS or less</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Word processing or spreadsheet software</strong></td>
<td>2</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Software that manages daily schedules</td>
<td>5</td>
<td>7</td>
<td>16</td>
</tr>
<tr>
<td><strong>Smartphones</strong></td>
<td>10</td>
<td>11</td>
<td>17</td>
</tr>
<tr>
<td>Customer self-service technologies</td>
<td>9</td>
<td>11</td>
<td>18</td>
</tr>
<tr>
<td><strong>Email or social media</strong></td>
<td>16</td>
<td>15</td>
<td>18</td>
</tr>
<tr>
<td>Industrial robots</td>
<td>7</td>
<td>18</td>
<td>19</td>
</tr>
</tbody>
</table>

The framing scenario for our “future of automation and jobs” questions

“New developments in robotics and computing are changing the nature of many jobs. Today, these technologies are mostly being used in certain settings to perform routine tasks that are repeated throughout the day. But in the future, robots and computers with advanced capabilities may be able to do most of the jobs that are currently done by humans today.”
Mixed levels of awareness, sense that this outcome is likely

% of U.S. adults who say they have heard, read or thought ___ about the idea that robots and computers may be able to do many jobs currently done by humans

- A lot: 24
- A little: 61
- Nothing at all: 14

% who say this concept seems ____ realistic

- Extremely: 20
- Somewhat: 57
- Not very: 17
- Not at all: 5

Much more worry than enthusiasm about this concept

More awareness = concept seems more realistic

- Heard a lot
- Heard a little
- Heard nothing

Concept seems extremely realistic:
- Heard a lot: 48
- Heard a little: 14
- Heard nothing: 4

Very/somewhat enthusiastic about concept:
- Heard a lot: 47
- Heard a little: 30
- Heard nothing: 18

Very/somewhat worried about concept:
- Heard a lot: 76
- Heard a little: 72
- Heard nothing: 69

## Top expected outcomes: greater inequality, no new job explosion

### POSSIBLE NEGATIVE OUTCOMES

<table>
<thead>
<tr>
<th>Outcome</th>
<th>No, not likely</th>
<th>Yes, likely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inequality between rich and poor will be much worse than today</td>
<td>23%</td>
<td>76%</td>
</tr>
<tr>
<td>People will have a hard time finding things to do with their lives</td>
<td>36%</td>
<td>64%</td>
</tr>
</tbody>
</table>

### POSSIBLE POSITIVE OUTCOMES

<table>
<thead>
<tr>
<th>Outcome</th>
<th>No, not likely</th>
<th>Yes, likely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economy as a whole will be much more efficient</td>
<td>56%</td>
<td>43%</td>
</tr>
<tr>
<td>People can focus less on work and more on what really matters</td>
<td>57%</td>
<td>42%</td>
</tr>
<tr>
<td>Humans would find jobs more meaningful and appealing</td>
<td>59%</td>
<td>40%</td>
</tr>
<tr>
<td>Economy will create many new, better-paying human jobs</td>
<td><strong>75%</strong></td>
<td>25%</td>
</tr>
</tbody>
</table>

Side note -- job loss concerns also present re: driverless vehicles

POSSIBLE POSITIVE OUTCOMES

- Elderly and disabled people will be able to live more independently: 25% not likely, 75% likely
- There would be much less traffic in major cities: 72% not likely, 28% likely

POSSIBLE NEGATIVE OUTCOMES

- Many people who drive for a living would lose their jobs: 19% not likely, 81% likely

OUTCOMES THAT ARE NEITHER POSITIVE NOR NEGATIVE

- Most people would never learn how to drive on their own: 30% likely, 70% not likely
- Owning a car would become much less important to people: 56% likely, 43% not likely

Strong support for policies that limit impact of automation

If machines were limited to doing dangerous or unhealthy jobs:
- Strongly oppose: 3
- Oppose: 11
- Favor: 38
- Strongly favor: 47

If people could pay extra to interact with a human when buying something:
- Strongly oppose: 13
- Oppose: 24
- Favor: 41
- Strongly favor: 22

If the govt offered all Americans a guaranteed income that would meet their basic needs:
- Strongly oppose: 18
- Oppose: 21
- Favor: 30
- Strongly favor: 31

If the govt created a national service program that would pay people to perform tasks:
- Strongly oppose: 12
- Oppose: 29
- Favor: 37
- Strongly favor: 21

Strong partisan differences on some – but not all – of these policies and regulations

% in each group who favor the following policies in the event that robots/computers can do many human jobs...

- Machines do dangerous or unhealthy jobs only
  - Democrat/lean Dem: 85
  - Republican/lean Rep: 86

- All citizens guaranteed a basic income
  - Democrat/lean Dem: 77
  - Republican/lean Rep: 38

- National service program for displaced workers
  - Democrat/lean Dem: 66
  - Republican/lean Rep: 46

- People can pay extra to interact with a human
  - Democrat/lean Dem: 63
  - Republican/lean Rep: 61

Public split on who should be responsible for displaced workers

<table>
<thead>
<tr>
<th></th>
<th>Govt has obligation to take care of displaced workers, even if it means raising taxes substantially</th>
<th>Individuals have obligation to care for own well-being, even if machines have already taken many jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. adults</td>
<td>50</td>
<td>49</td>
</tr>
<tr>
<td>College grad+</td>
<td>45</td>
<td>54</td>
</tr>
<tr>
<td>Some college</td>
<td>51</td>
<td>48</td>
</tr>
<tr>
<td>High school or less</td>
<td>53</td>
<td>45</td>
</tr>
<tr>
<td>Republican/lean Rep</td>
<td>30</td>
<td>68</td>
</tr>
<tr>
<td>Democrat/lean Dem</td>
<td>65</td>
<td>34</td>
</tr>
</tbody>
</table>


Pew Research Center
But is more supportive on limits to # of jobs replaced

<table>
<thead>
<tr>
<th></th>
<th>Should be limits on # of jobs businesses can replace with machines, even if they are better and cheaper than humans</th>
<th>Businesses are justified in replacing human workers if machines can do job better and at lower cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. adults</td>
<td>58</td>
<td>41</td>
</tr>
<tr>
<td>College grad+</td>
<td>41</td>
<td>59</td>
</tr>
<tr>
<td>Some college</td>
<td>59</td>
<td>40</td>
</tr>
<tr>
<td>High school or less</td>
<td>70</td>
<td>27</td>
</tr>
<tr>
<td>Republican/lean Rep</td>
<td>54</td>
<td>44</td>
</tr>
<tr>
<td>Democrat/lean Dem</td>
<td>60</td>
<td>39</td>
</tr>
</tbody>
</table>

Certain occupations viewed as more at risk than others

% of U.S. adults who think it likely that the following jobs will be replaced by robots or computers in their lifetimes

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Not at all</th>
<th>Not very</th>
<th>Somewhat</th>
<th>Very</th>
<th>NET likely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fast food worker</td>
<td>6%</td>
<td>17%</td>
<td>39%</td>
<td>38%</td>
<td>77%</td>
</tr>
<tr>
<td>Insurance claims processor</td>
<td>7%</td>
<td>27%</td>
<td>44%</td>
<td>22%</td>
<td>65%</td>
</tr>
<tr>
<td>Software engineer</td>
<td>12%</td>
<td>35%</td>
<td>38%</td>
<td>15%</td>
<td>53%</td>
</tr>
<tr>
<td>Legal clerk</td>
<td>12%</td>
<td>38%</td>
<td>36%</td>
<td>13%</td>
<td>50%</td>
</tr>
<tr>
<td>Construction worker</td>
<td>19%</td>
<td>39%</td>
<td>32%</td>
<td>10%</td>
<td>42%</td>
</tr>
<tr>
<td>Teacher</td>
<td>26%</td>
<td>38%</td>
<td>26%</td>
<td>10%</td>
<td>36%</td>
</tr>
<tr>
<td>Own job or profession</td>
<td>30%</td>
<td>40%</td>
<td>23%</td>
<td>7%</td>
<td>30%</td>
</tr>
<tr>
<td>Nurse</td>
<td>34%</td>
<td>46%</td>
<td>16%</td>
<td>4%</td>
<td>20%</td>
</tr>
</tbody>
</table>

Across some job categories, modest numbers think their own job will be automated in the future.

% of workers in each sector who think it very/somewhat likely that their job will be replaced by machines their lifetime:

- Hospitality, Service: 42%
- Retail: 41%
- Banking, finance, insurance: 41%
- Gov't, Public admin, Military: 28%
- Info/Technology: 27%
- Manufacturing, Construction: 26%
- Health care: 24%
- Education: 18%

Across some demographic groups, modest numbers think their own job will be automated in the future

% of workers in each group who think it very/somewhat likely that their job will be replaced by machines their lifetime

Training is now seen as essential

% saying training/skills development throughout their work life will be ...

- Essential: 54%
- Important, but not essential: 33%
- Not important: 12%

http://www.pewsocialtrends.org/2016/10/06/the-state-of-american-jobs/
People think knowledge of computers, social dexterity, communications skills and access to training are key to success

% saying these traits are _____ for workers to be successful in today’s economy

<table>
<thead>
<tr>
<th>Trait</th>
<th>Extremely important</th>
<th>Very important</th>
<th>NET</th>
<th>Somewhat important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Having a detailed understanding of <strong>how to use</strong> computer technology</td>
<td>40</td>
<td>45</td>
<td>85%</td>
<td>12</td>
</tr>
<tr>
<td>Being able to <strong>work with people from many different backgrounds</strong></td>
<td>35</td>
<td>49</td>
<td>85</td>
<td>12</td>
</tr>
<tr>
<td>Training in <strong>writing and communicating</strong></td>
<td>37</td>
<td>48</td>
<td>85</td>
<td>13</td>
</tr>
<tr>
<td><strong>Access to training</strong> to keep skills up to date</td>
<td>33</td>
<td>49</td>
<td>82</td>
<td>16</td>
</tr>
<tr>
<td>Training in <strong>math and science</strong></td>
<td>22</td>
<td>47</td>
<td>69</td>
<td>26</td>
</tr>
<tr>
<td>Knowing a computer or <strong>programming language</strong></td>
<td>23</td>
<td>41</td>
<td>64</td>
<td>26</td>
</tr>
<tr>
<td>Mastering <strong>social media</strong></td>
<td>10</td>
<td>27</td>
<td>37</td>
<td>40</td>
</tr>
<tr>
<td>Knowing a <strong>foreign language</strong></td>
<td>10</td>
<td>25</td>
<td>36</td>
<td>43</td>
</tr>
</tbody>
</table>

http://www.pewsocialtrends.org/2016/10/06/the-state-of-american-jobs/
Americans think individuals and public schools should have the most responsibility to make sure workers have the right skills

% saying these groups should have ___ responsibility in making sure the American workforce has the right skills and education to be successful in today's economy

<table>
<thead>
<tr>
<th>Group</th>
<th>A lot of</th>
<th>Some</th>
<th>Only a little</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individuals themselves</td>
<td>72</td>
<td>22</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Public K-12 education</td>
<td>60</td>
<td>28</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Colleges and universities</td>
<td>52</td>
<td>35</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Employers</td>
<td>49</td>
<td>39</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>State governments</td>
<td>40</td>
<td>35</td>
<td>15</td>
<td>9</td>
</tr>
<tr>
<td>Federal government</td>
<td>35</td>
<td>34</td>
<td>18</td>
<td>11</td>
</tr>
</tbody>
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