AUTOMATED LABOR:
WORKERS AND JOBS IN
AN AUTOMATED ECONOMY

“"I DON’T GET WHAT’S VALUED”:
A REPORT ON EMPLOYEE
VALUES AND SATISFACTION
Automated Labor: Workers and Jobs in an Automated Economy
THE IMPACT OF AUTOMATION

Automation technologies have the potential to drastically alter the way humans think about and do work and they will have reverberating effects on economies throughout the world. The extent to which these advances in technology will impact the labor force is an open topic for debate.

There are many who raise concerns that automation technologies and AI threaten jobs and livelihoods. Given the rapid advancement of technologies into a wide range of industries, these concerns are justified. Coupled with these concerns is an underlying fear of widespread unemployment, poverty, and increased income inequality, all of which lead to societal instability.

Others see historical evidence for economic resilience despite such disruptions, arguing that labor markets are resilient and that while automation technologies may displace some workers, such technologies will never fully replace human labor. Rather than machines replacing humans in the labor force, they argue that dynamic labor markets will adapt to accommodate workers displaced by automation through the creation of new industries and jobs.

While the impacts of automation technologies are debated, there will be impacts, some of which will be negative. Whether unemployment is long-term and widespread or short-term and isolated, people who are displaced by automation will experience discomfort, and interventions will be necessary to ease suffering, especially if it is long-term. As what Jeremy Nowak and Bruce Katz call the “problem solvers,” local and regional governments have a responsibility to their constituents to minimize these potential negative impacts through collaborations with the private sector.
Salt Lake County is relatively resilient to automation compared with other major metropolitan regions.

**STRENGTHS**
- Economic Diversity
- Educated Workforce

**AREAS OF CONCERN**
- Men, who comprise 55% of the workforce and participate in the workforce at higher rates than women, are more likely to be displaced by automation
- Hispanic individuals are more likely to lose their jobs due to automation; the Hispanic population comprises 18.6% of Salt Lake County’s population
- Wage stagnation despite years of “full” employment

To read the full reports, visit: slco.org/future-of-jobs
Routine occupations are on the decline while non-routine jobs are increasing

Source: Federal Reserve Bank of St. Louis
Average Median Wage of Jobs with greater than 80% probability of automation: $37,642
Average Median Wage of Jobs with less than 20% probability of automation: $76,646

AUTOMATION PROBABILITY AND MEDIAN ANNUAL WAGE OF OCCUPATIONS
Many of the jobs with highest growth projections are in interpersonal care fields

### FASTEST GROWING OCCUPATIONS

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Solar Photovoltaic Installers</td>
<td>63.3%</td>
<td>6.1</td>
<td>$42,680</td>
</tr>
<tr>
<td>Wind Turbine Service Technicians</td>
<td>56.9%</td>
<td>3.8</td>
<td>$54,370</td>
</tr>
<tr>
<td>Home Health Aides</td>
<td>36.6%</td>
<td>304.8</td>
<td>$24,200</td>
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<tr>
<td>Personal Care Aides</td>
<td>36.4%</td>
<td>881.0</td>
<td>$24,020</td>
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<tr>
<td>Occupational Therapy Assistants</td>
<td>33.1%</td>
<td>14.5</td>
<td>$60,220</td>
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<tr>
<td>Information Security Analysts</td>
<td>31.6%</td>
<td>35.5</td>
<td>$98,350</td>
</tr>
<tr>
<td>Physician Assistants</td>
<td>31.1%</td>
<td>37.0</td>
<td>$108,610</td>
</tr>
<tr>
<td>Statisticians</td>
<td>30.7%</td>
<td>13.6</td>
<td>$87,780</td>
</tr>
<tr>
<td>Nurse Practitioners</td>
<td>28.2%</td>
<td>53.3</td>
<td>$107,030</td>
</tr>
<tr>
<td>Speech-Language Pathologist</td>
<td>27.3%</td>
<td>41.9</td>
<td>$77,510</td>
</tr>
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</table>
# Automation Probability and Median Annual Wage of Occupations

<table>
<thead>
<tr>
<th>Occupation Title</th>
<th>Automation Probability</th>
<th>Total Employment in Salt Lake County</th>
<th>Median Annual Wage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Entry Keyers</td>
<td>0.9900</td>
<td>2,610</td>
<td>$33,680.00</td>
</tr>
<tr>
<td>Insurance Underwriters</td>
<td>0.9900</td>
<td>430</td>
<td>$52,520.00</td>
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<tr>
<td>Library Technicians</td>
<td>0.9900</td>
<td>150</td>
<td>$25,400.00</td>
</tr>
<tr>
<td>Photographic Process Workers &amp; Processing Machine Operators</td>
<td>0.9900</td>
<td>90</td>
<td>$27,930.00</td>
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<tr>
<td>Sewers, Hand</td>
<td>0.9900</td>
<td>200</td>
<td>$19,430.00</td>
</tr>
<tr>
<td>Tax Preparers</td>
<td>0.9900</td>
<td>230</td>
<td>$56,260.00</td>
</tr>
<tr>
<td>Telemarketers</td>
<td>0.9900</td>
<td>1,300</td>
<td>$29,680.00</td>
</tr>
<tr>
<td>Title Examiners, Abstractors, and Searchers</td>
<td>0.9900</td>
<td>640</td>
<td>$37,430.00</td>
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<tr>
<td>Bookkeeping, Accounting, and Auditing Clerks</td>
<td>0.9800</td>
<td>6,990</td>
<td>$38,410.00</td>
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<tr>
<td>Brokerage Clerks</td>
<td>0.9800</td>
<td>360</td>
<td>$50,560.00</td>
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<tr>
<td>Claims Adjusters, Examiners, and Investigators</td>
<td>0.9800</td>
<td>1,400</td>
<td>$57,510.00</td>
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<td>Credit Analysts</td>
<td>0.9800</td>
<td>470</td>
<td>$67,650.00</td>
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<tr>
<td>Driver/Sales Workers</td>
<td>0.9800</td>
<td>1,080</td>
<td>$30,590.00</td>
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<td>Etchers and Engravers</td>
<td>0.9800</td>
<td>70</td>
<td>$28,200.00</td>
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<tr>
<td>Inspectors, Testers, Sorters, Samplers, and Weighers</td>
<td>0.9800</td>
<td>3,060</td>
<td>$37,630.00</td>
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<tr>
<td>Insurance Claims and Policy Processing Clerks</td>
<td>0.9800</td>
<td>520</td>
<td>$37,480.00</td>
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<tr>
<td>Legal Secretaries</td>
<td>0.9800</td>
<td>930</td>
<td>$39,320.00</td>
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<tr>
<td>Loan Officers</td>
<td>0.9800</td>
<td>3,090</td>
<td>$43,500.00</td>
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<tr>
<td>Order Clerks</td>
<td>0.9800</td>
<td>440</td>
<td>$32,800.00</td>
</tr>
<tr>
<td>Packaging and Filling Machine Operators and Tenders</td>
<td>0.9800</td>
<td>1,420</td>
<td>$29,780.00</td>
</tr>
<tr>
<td>Parts Salespersons</td>
<td>0.9800</td>
<td>1,060</td>
<td>$40,030.00</td>
</tr>
<tr>
<td>Procurement Clerks</td>
<td>0.9800</td>
<td>350</td>
<td>$38,160.00</td>
</tr>
<tr>
<td>Shipping, Receiving, and Traffic Clerks</td>
<td>0.9800</td>
<td>4,200</td>
<td>$29,970.00</td>
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<tr>
<td>Tellers</td>
<td>0.9800</td>
<td>2,180</td>
<td>$26,290.00</td>
</tr>
<tr>
<td>Umpires, Referees, and Other Sports Officials</td>
<td>0.9800</td>
<td>130</td>
<td>$18,760.00</td>
</tr>
</tbody>
</table>
Potential Policy Responses: A Conversation Starter

**STRENGTHS**

1. Create municipal, county, and state digital economy strategies
2. Create financial incentives for schools to create or maintain programs in top Bureau of Labor Statistics (BLS) or Department of Workforce Services (DWS) growth sectors
3. Create robust retraining programs for individuals at high risk for displacement
4. Create new and expand existing training and credentialing programs that offer efficient retraining options
5. Expand government aid programs for individuals displaced by automation
6. Create portable benefits that follow an individual despite the job they hold
7. Large-scale public investment in infrastructure and buildings
8. Enact policies and increase public investment to facilitate renewable energy development and energy efficiency
9. Reassess tax structures to preserve revenue streams
10. Consider reducing the workweek to 32 hours and implementing job sharing
11. Consider implementing Universal Basic Income (UBI) and Universal Basic Services (UBS)

To read the full reports, visit: slco.org/future-of-jobs
“I Don’t Get What’s Valued”: A Report on Employee Values and Satisfaction

HIGHLIGHTS »
RECRUITING AND RETENTION OF EMPLOYEES

This study is an extension of a 2018 project undertaken by Salt Lake County Economic Development intended to better understand the needs of businesses in Salt Lake County.

Data from that study, particularly regarding recruiting and retention of employees, generated important questions about the employment experience of the workforce in the county. This 2019 study gathered exploratory qualitative data from nine focus groups comprised of employees from companies who do business in Salt Lake County.

Work values as discussed by Twenge et al. provided the theoretical framework of this study.¹ These values included extrinsic motivations, intrinsic motivations, social values, leisure, and altruism. For this sample, leisure values and extrinsic motivations were nearly indistinguishable in primary importance, followed by intrinsic motivations, social values, and altruism.

Of particular note, the most frequently discussed item during these focus groups was company culture. This concept was closely related to social values but also extended to norms, policies, practices, working environment, and tools ranging from internet service and software to office supplies and screwdrivers. When culture was conceptualized as a social value, all focus groups agreed that supervisors set the tone for inclusivity, respect, and feeling valued.

Flexibility was also exceptionally important to this sample. Originally, flexibility was conceptualized within the work value of leisure as related to work-life balance. However, data indicated that this was too narrow a conceptualization for this sample. Rather, participants valued the ability to remain fully committed to both their jobs and their families. A flexible comingling of work and life allowed participants the freedom to care for all of their varied responsibilities, and greatly contributed to their satisfaction and sense of personal wellbeing.

Upon analyzing these data, there are several broad recommendations that would be likely to improve employee satisfaction if they were implemented.

RECOMMENDATIONS

» View employees as a resource
» When soliciting employee feedback, be prepared for constructive criticism and communicate with employees about their feedback
» Have reasonable expectations with a clear understanding of what employees are being asked to do
» Manage bureaucracy
» Be intentional with change
» Ensure sufficient onboarding
» Offer ongoing, applicable, appropriate training

From the first focus group, it was clear that participants were anxious to perform at a high level. It is hoped that these data will help not only Salt Lake County businesses but also the workforce who contribute so greatly to regional economy.

In addition to the focus groups, a web-based survey was distributed to people employed within the County and more than 1,000 responses were collected. The survey offers a different level of insight to complement the focus group data. Information from the surveys can be found on the next page.
Values within the workplace: 
A look inside rankings and ratings

HOW EMPLOYEES RATE WORK VALUES

1. A job that is interesting
2. A job that uses your skills and abilities – lets you to the things you can do best
3. A job where you can learn new things/skills
4. A job that offers a reasonably predictable, secure future
5. A job where you can see the results of what you do

VALUE CATEGORY RANKING*

1. Intrinsic
2. Altruistic
3. Other
4. Leisure
5. Extrinsic
6. Social

*Note that this is counter to the focus group responses. This may be due to the fact that Educational Services and Healthcare & Social Assistance Industries represented 28% of respondents, which may skew these rankings toward Intrinsic and Altruistic values.

To read the full reports, visit: slco.org/future-of-jobs
Respondent Insights

>> 90% WORK FULL TIME

>> 29% WORK 2+ JOBS

>> 57% WORK 40+ HOURS/WEEK

>> 63% HAVE BEEN AT CURRENT JOB LESS THAN 5 YEARS

>> 35% HAVE BEEN AT CURRENT JOB LESS THAN 2 YEARS

>> 58% OF HOURLY EMPLOYEES MAKE LESS THAN $20/HOUR ($41,600/YEAR)

To read the full reports, visit: slco.org/future-of-jobs
DO YOU FEEL THAT YOU HAVE THE OPPORTUNITY FOR PROMOTION IN YOUR CURRENT POSITION?

- DEFINITELY YES
- PROBABLY YES
- MIGHT/MIGHT NOT
- PROBABLY NOT
- DEFINITELY NOT

DO YOU FEEL THAT YOU ARE COMPENSATED FAIRLY AT YOUR CURRENT JOB?

- DEFINITELY YES
- PROBABLY YES
- MIGHT/MIGHT NOT
- PROBABLY NOT
- DEFINITELY NOT