



**NATIONAL
SKILLS
COALITION**

Every worker. Every industry.
A strong economy.

Closing the Digital **Skill** Divide: The Payoff for Minnesota Workers, Business, and the Economy

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**Minnesota Governor's Task Force on
Broadband**

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Today's conversation

- **What we learned** about the demand for digital skills
- **What our findings mean** for Minnesota broadband leaders
- **What's next** in taking action on digital skills



About National Skills Coalition:

Our vision

- ▶ Jobs that require skills training are the backbone of our economy.
- ▶ National Skills Coalition fights for a national commitment to inclusive, high-quality skills training so that more people have access to a better life, and more local businesses see sustained growth.



The **digital divide** isn't just about broadband or hardware – it's also about **skills**.





Higher digital skills are correlated with higher broadband adoption rates.

People often enroll in digital skills classes to get a job or get a better job





**So we decided
to research
employers'
demand for
digital skills.**





New research report: *Closing the Digital Skill Divide*

- Our project looked at **millions of online job ads** posted during calendar year 2021
- Data was initially collected and standardized by Lightcast (*formerly Emsi Burning Glass*)
- Further analysis was carried out by NSC in collaboration with the Federal Reserve Bank of Atlanta (FRBA)

The opinions expressed in the report reflect those of the authors and do not necessarily reflect those of the Federal Reserve System or the Federal Reserve Bank of Atlanta.



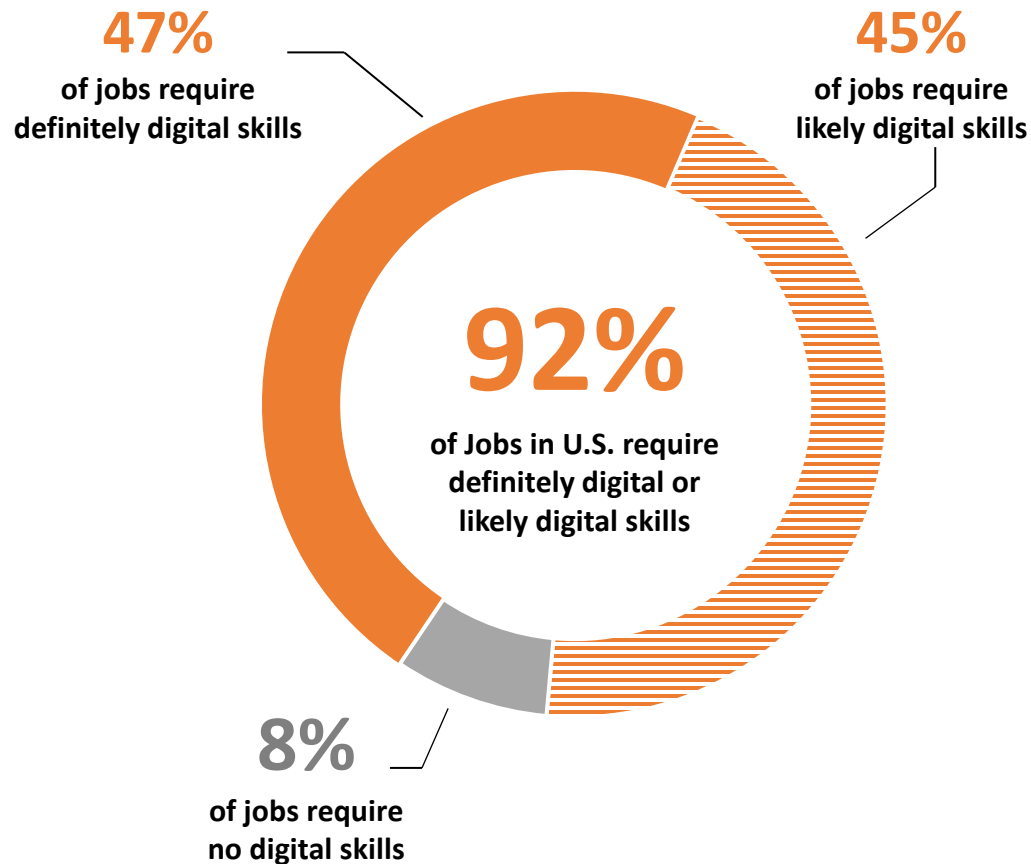
We analyzed 43 million job ads

- Ads were posted online in 2021
- The average ad sought **8 skills**
- We hand-coded skills to understand which ones were definitely digital, likely digital, or not digital





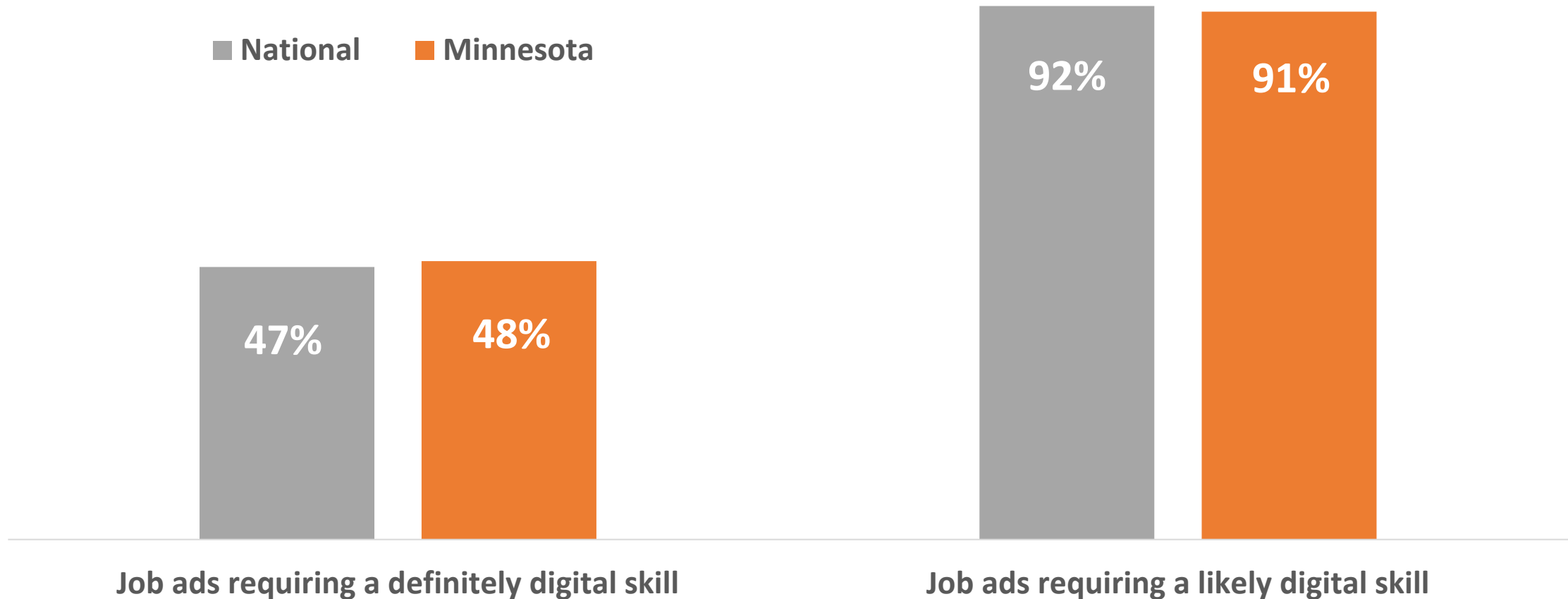
Virtually all of today's jobs require digital skills



- **Definitely** digital: Microsoft Excel; Python language
- **Likely** digital: Bookkeeping; survey design
- **Not** digital: Ironing; changing diapers



Minnesota employers are close to the national average in requiring digital skills





We're about to throw a lot of data at you

- But before we do, let's talk about what **digital skills*** look like

Also referred to in our report as **technology skills.*



Construction workers using mobile apps to submit work-order changes.



**Welders using collaborative robots
("cobots") in advanced manufacturing**

Photo credit: Smooth Robotics



Medical office staff supporting telehealth patients.



Agriculture workers using in-cab tractor technology for efficient tractor operation



Food processing plant workers using inventory control technologies.



Warehouse/logistics workers using digital order-picking and shipment tools



Aerospace workers using augmented reality.

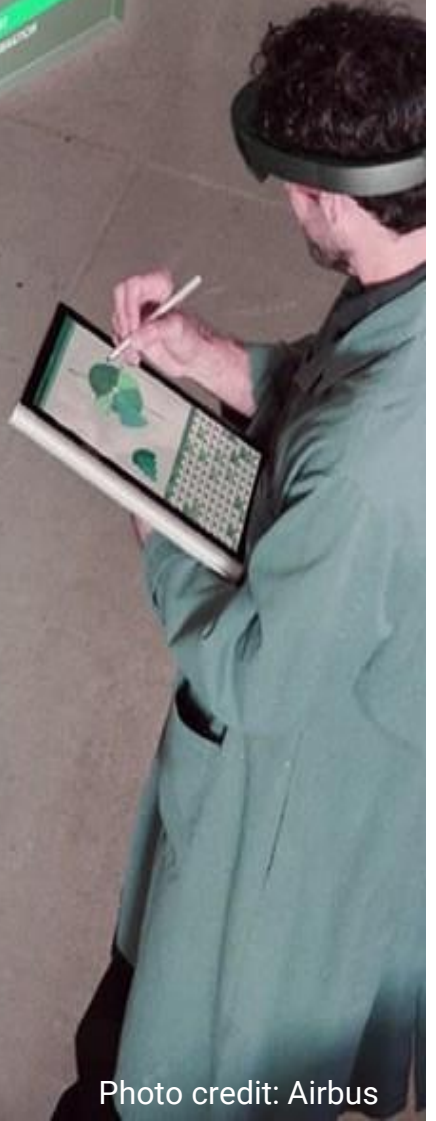


Photo credit: Airbus



The bottom line:
Even entry-level positions now
require digital skills.





Jobs that require very little work experience still need digital skills

Amount of work experience required	Percentage of job ads requiring <u>likely</u> digital skill	Percentage of job ads requiring <u>definitely</u> digital skill
0-2 years	95%	49%
3-5 years	98%	71%
6-8 years	99%	81%
9+ years	98%	75%



Jobs that require limited education nevertheless need digital skills

Educational credential required	Percentage of job ads requiring <u>likely</u> digital skill	Percentage of job ads requiring <u>definitely</u> digital skill
High school diploma	94%	46%
Associate's degree	97%	47%
Bachelor's degree	99%	74%
Master's degree	97%	46%
Ph.D.	97%	39%

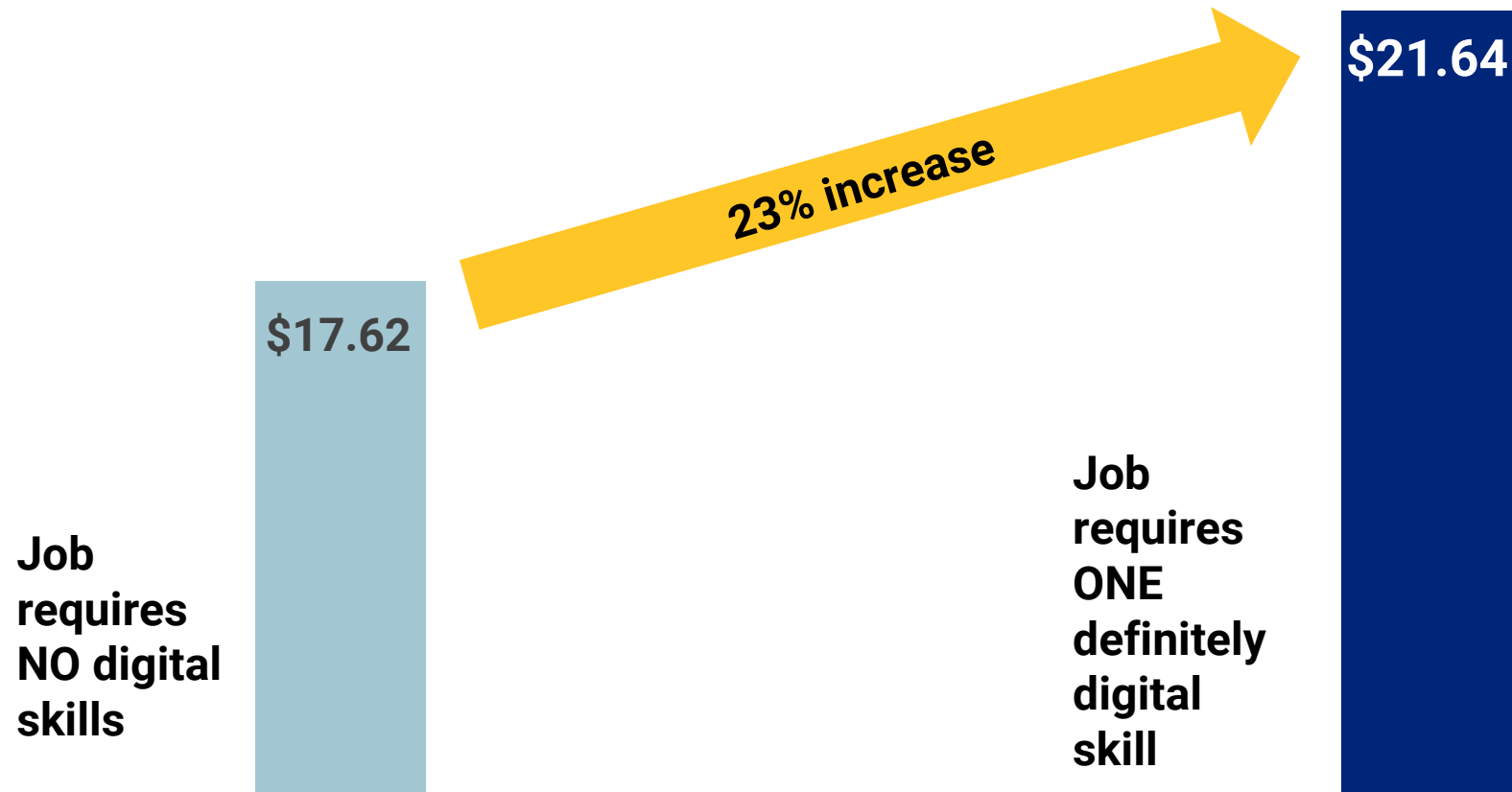
Counter-intuitive but true:

Younger workers need to develop digital skills too!





Jobs that require digital skills pay more



*Note: Numbers shown are median hourly wages. People who qualify for jobs that require even one digital skill can earn an average of 23 percent more than those working in jobs requiring no digital skills — an increase of \$8,000 per year for an individual full-time worker. Data shown are national data. For details, see full report: **Closing the Digital Skill Divide** (National Skills Coalition, 2023.)*



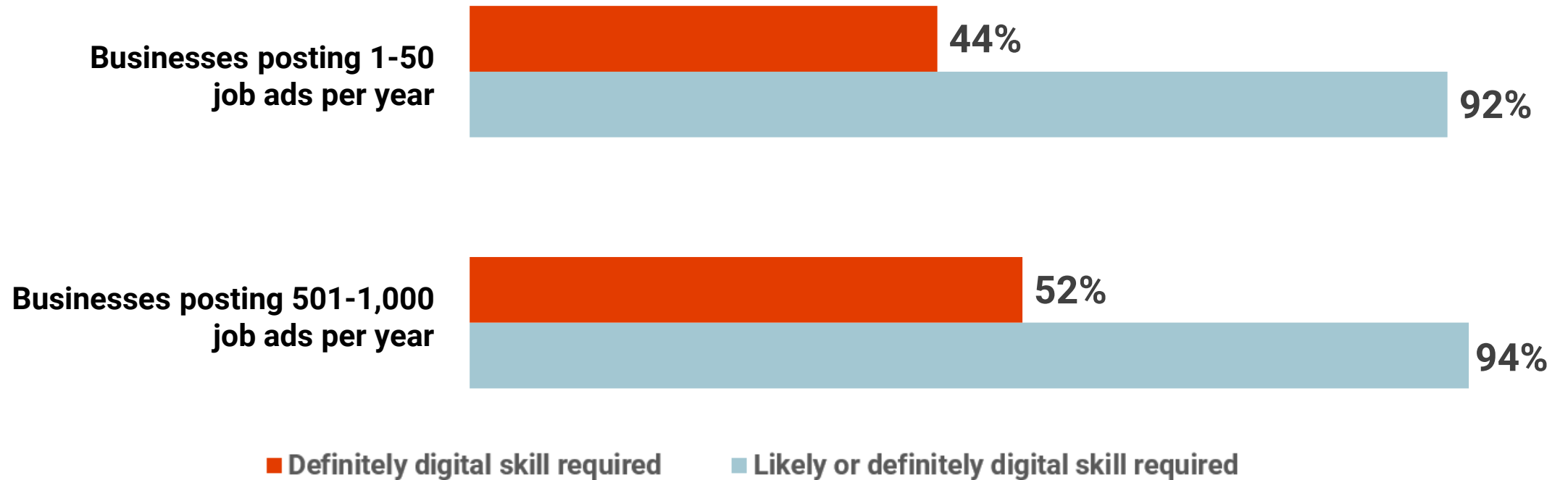
Higher pay leads to greater economic vitality for Minnesota

- Workers who earn higher wages by moving to a job that requires one digital skill will typically **contribute more** in federal and state tax revenue
- Depending on the household size and composition, this amount could range from **\$2,043** to **\$4,253** per year.

Note: Example calculated via [taxsim.app: an interactive US Individual Income Tax simulator](https://taxsim.app), using Minnesota as the reference state.



Small businesses also need workers with digital skills



*Note: National data. For details, see full report: **Closing the Digital Skill Divide** (National Skills Coalition, 2023.) The dataset used for this analysis does not directly measure the size of a company, so we inferred firm size based on the volume of job ads posted by the company in a year.*



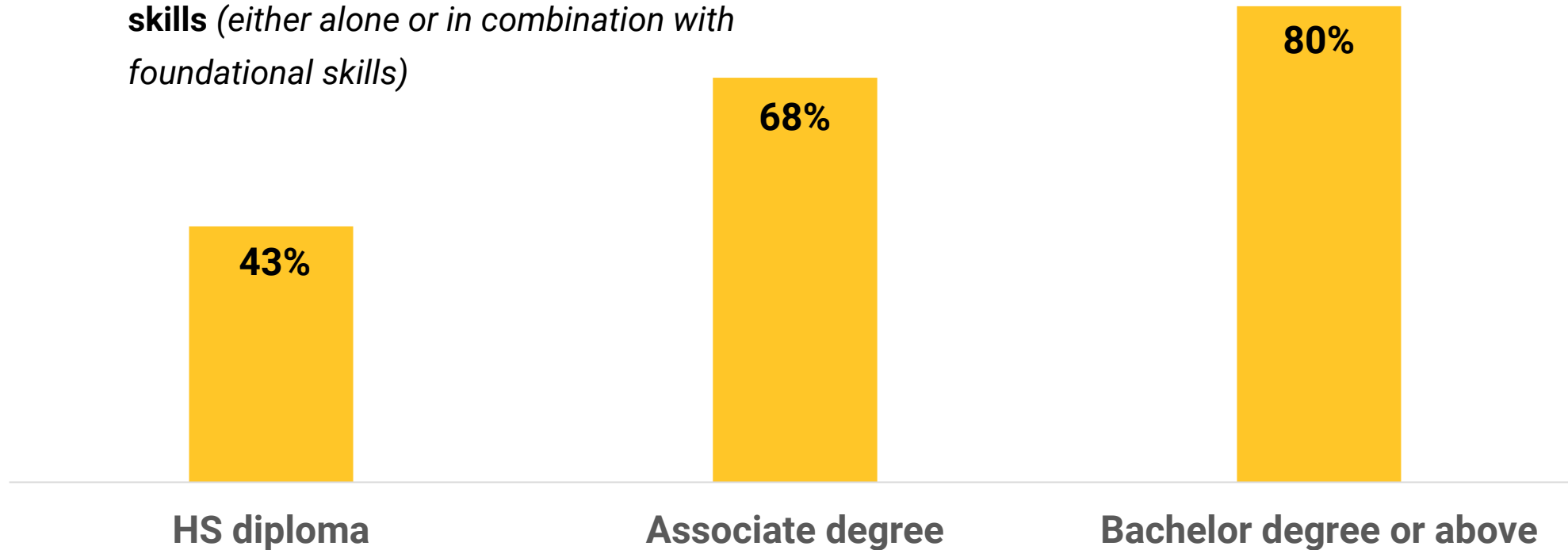
Every industry needs digital skills

- Nationally, the percent of job ads requiring digital skills ranges from **77%** to **99%** depending on industry sector
- This includes industries that are a priority for Minnesota, such as ***manufacturing*** (93%), ***finance and insurance*** (99%), and ***healthcare*** (95%).



Workers need both foundational and industry-specific digital skills

■ Job ads requiring industry-specific digital skills (either alone or in combination with foundational skills)



Note: National data. Numbers reflect percentage of jobs requiring an industry-specific digital skill within the subset of jobs that require at least one definitely digital skill. Percentages would be even higher if including jobs with only likely digital skills.



Let's zero in on Minnesota's demand for digital skills





Minnesota businesses want workers with a strong base of foundational digital skills....









Minnesota's most in-demand *foundational* digital skills

- Typing
- Data entry
- Word processing
- “Computer literacy”
- Spreadsheets (Excel, etc.)
- Microsoft Office



Select *industry-specific* skills with strong demand in Minnesota:

-  **Finance and insurance:** Mobile banking; Nationwide Mortgage Licensing System
-  **Healthcare:** Electronic medical records; radiologic technology
-  **Manufacturing:** Enterprise Resource Planning (ERP) software; robotics; AutoCAD; Computer Numerical Control (CNC)
-  **Retail:** SAS retail analytics and consumer goods software
-  **Real estate and rental & leasing:** Yardi software
-  **Accommodation and food services:** Empower human resources software



Some occupations have especially high demand for digital skills in Minnesota

Occupation	Percent of job postings requiring <i>definitely digital skills</i>
Software Developer/Engineer	95%
Computer Support Specialist	93%
Tutor	89%
Bookkeeper/Accounting Clerk	88%
Office / Administrative Assistant	85%
Scheduler/Operations Coordinator	82%
Recruiter	79%
Project Manager	78%
Property/Real Estate/Community Manager	78%
Registrar/Patient Service Representative	77%
All occupations (Minnesota)	48%

Minnesota-specific data from unpublished NSC analysis conducted as part of **Closing the Digital Skill Divide** report.



What can Minnesota leaders do with this data?



Minnesota leaders can use these findings to ensure that new federal investments pay off for workers and small businesses:





1. Use Digital Equity Act and BEAD funding to expand digital skills training.



2. Combine these findings with Census data to target services and close equity gaps for covered populations.



3. Collaborate with state labor and education officials to align and amplify digital skills investments.



4. Explicitly embed digital skills throughout other state workforce development investments.



5. Invest in industry sector partnerships that bring employers together with education and training providers to create upskilling programs.



**Time for your
questions!**



Contact information

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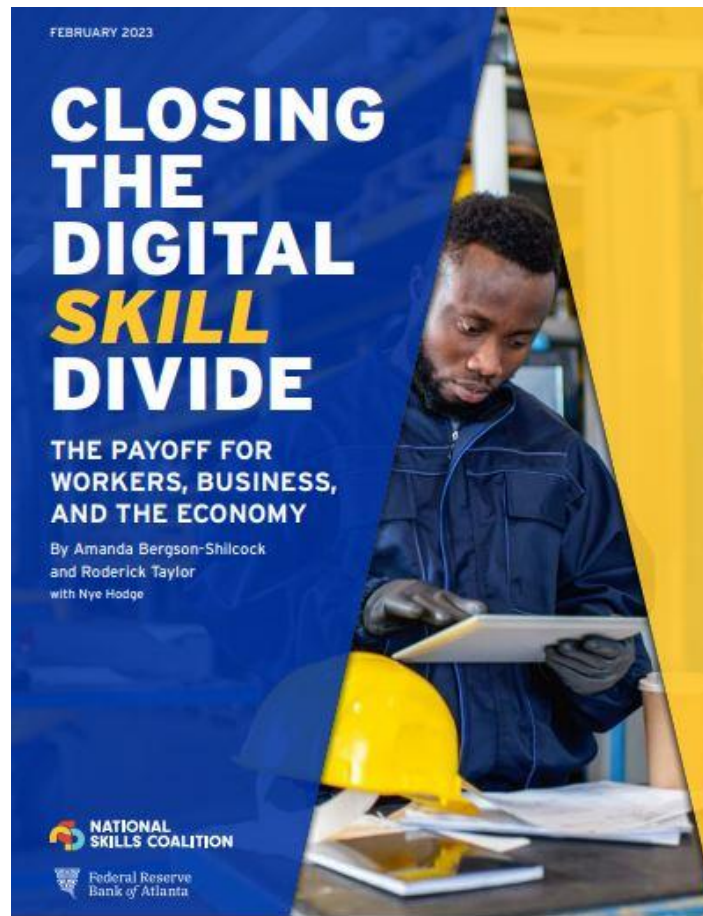
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Full report: *Closing the Digital Skill Divide*

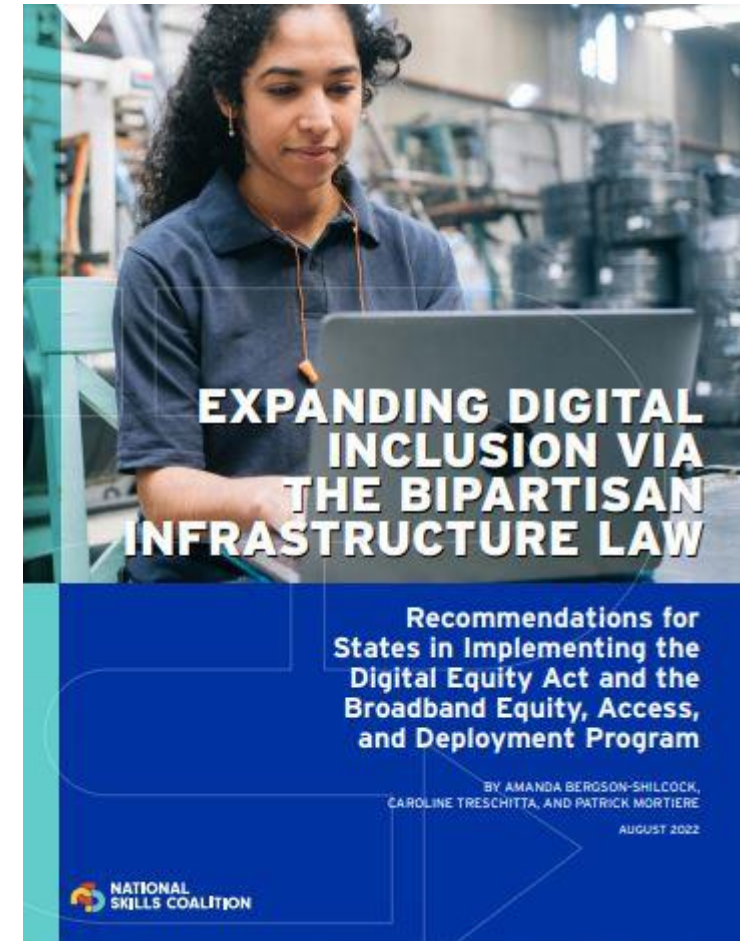


<https://tinyurl.com/DigitalSkillDivide>



Knowledge to action: Additional resources

- Check out NSC's [Digital Equity Act 101 fact sheet](#)
- NSC's experienced policy staff can help Ohio leaders identify other specific administrative or legislative policy possibilities
- NSC's previously-published Digital Equity Act and BEAD [recommendations](#) (see *right*) may also be helpful





Sign on to our principles!

A digital skill foundation for all.

All workers need the opportunity to develop broad-based, flexible digital problem-solving skills for current technologies and ongoing technological shifts.

Ongoing upskilling for every worker in every workplace.

Workers in every industry need the opportunity to develop industry- and occupation-specific digital skills to adapt and advance in their careers.

Rapid re-skilling for rapid re-employment.

We need to be ready for sudden disruptions to the labor market or specific industries. Policies should support rapid reskilling so workers can move from one industry to another.

Sign on to our principles: tinyurl.com/DigitalEquityAtWork



Other NSC digital skills data resources



Full report:

www.tinyurl.com/BoostingDL

- [Applying a Racial Equity Lens to Digital Literacy](#) (fact sheet)
- Digital skills fact sheets by industry:
 - [Manufacturing](#)
 - [Retail & hospitality](#)
 - [Health & social work](#)
 - [Construction, transportation & storage](#)

The New Landscape of Digital Literacy

How workers' uneven digital skills affect economic mobility and business competitiveness, and what policymakers can do about it.



Full charts and graphs in this data report:
tinyurl.com/NewLandsDL

Speak up for digital skills in Washington DC at NSC's 2023 Skills Summit!



The **Skills Summit** is our largest event of the year. Join education and workforce advocates from across the country as we:

- **Learn** about critical federal skills policy.
- **Meet** with legislators on Capitol Hill and members of the Biden Administration.
- Leave equipped to **fight** for investments in inclusive, high-quality skills training.



Register:

<https://www.nationalskillssummit.com/>