

2023 NORTHERN VIRGINIA WORKFORCE INDEX

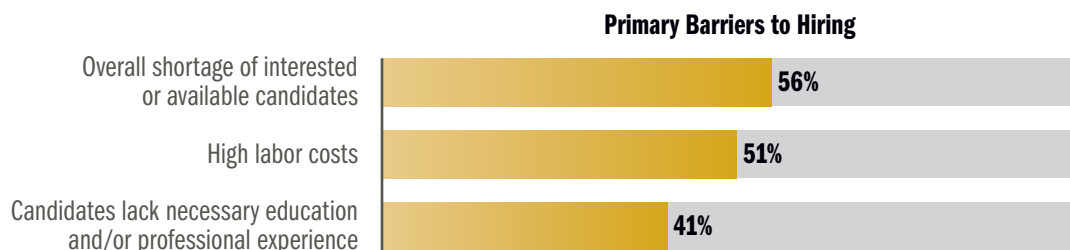
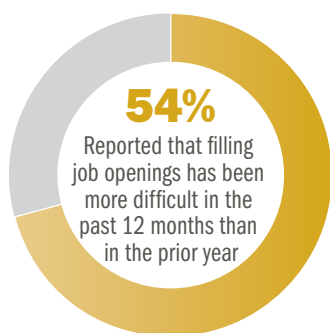


2023 NORTHERN VIRGINIA WORKFORCE INDEX

Executive Summary

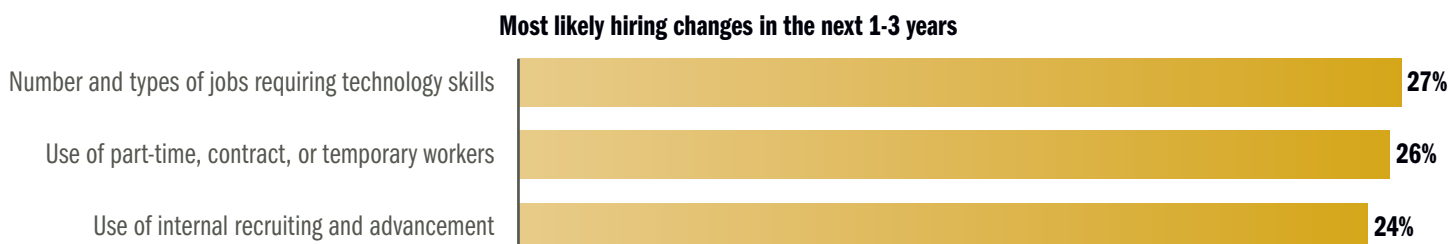
Our recent survey of over 250 regional business leaders found that...

A tight labor market and higher labor costs continue to make hiring and retaining talent an ongoing challenge for many businesses in Northern Virginia.



■ % reporting as a major or significant barrier

Some businesses anticipate turning to part-time/contract workers and internal recruitment to overcome these hiring challenges. Work-based learning approaches such as internships and apprenticeships continue to be underutilized and offer prime opportunities to expand recruitment.



■ % reporting likely to increase

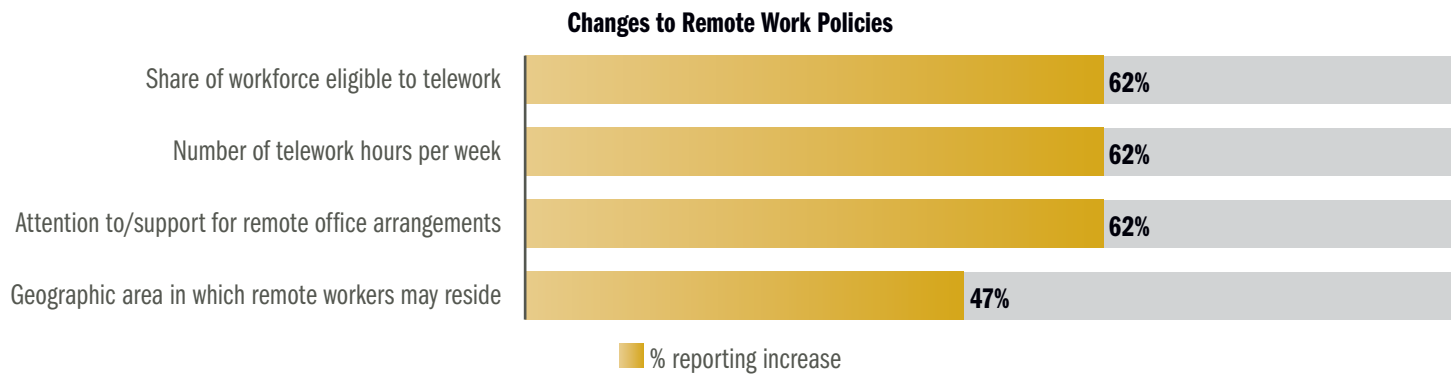
40%

Reported employing at least one intern over the past 12 months

16%

Recruit through apprenticeships

Though many large companies are requiring employees to return to the office, remote work is still top of mind.



Employers in Northern Virginia rely heavily on formal educational credentials as part of the hiring process.

21%

Consider level of education to be very important or essential when making hiring decisions

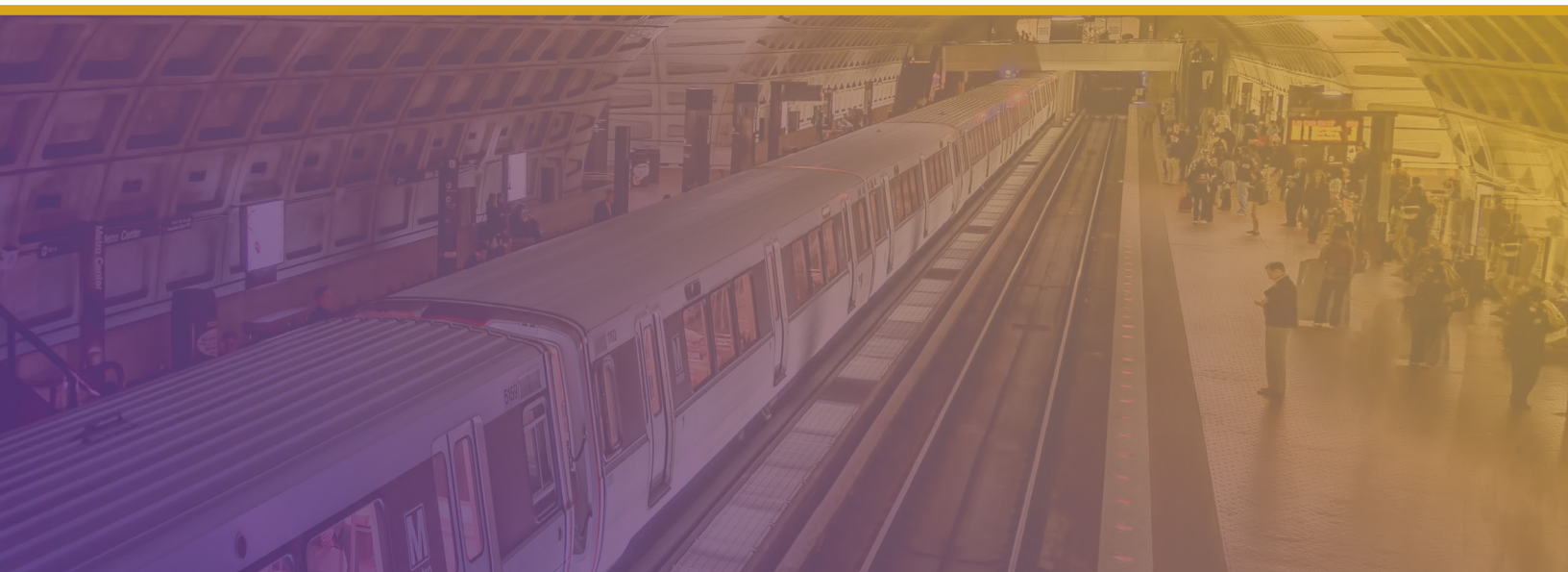
45%

Are rarely or never willing to accept equivalent professional experience

The *Northern Virginia Workforce Index*, originally developed in 2021 through a partnership between the Northern Virginia Chamber of Commerce and Northern Virginia Community College (NOVA), is an annual employer survey and report that provides data on employer sentiment and workforce practices specific to the Northern Virginia region.

To download a copy of the full 2023 Workforce Index Report, please visit:

www.novachamber.org/northern_virginia_workforce_index



INTRODUCTION

Despite fears that 2023 would be a continuation of 2022 — with high inflation, economic uncertainty, and even worries about an impending recession — the economy seems to have cooled. Unemployment has remained low, GDP has gone up, and inflation is falling.¹ However, experts predict that economic growth will be more moderate in the coming year.²

Whatever the coming year has in store, detailed and actionable intelligence on local labor market conditions, especially employer workforce needs, remains a vital component of understanding and planning for the future. *The Northern Virginia Workforce Index*, originally developed in 2021 through a partnership between the Northern Virginia Chamber of Commerce and Northern Virginia Community College (NOVA), is an annual employer survey and report that provides data on employer sentiment and workforce practices specific to the Northern Virginia region.

Among the results of this year's survey, we find that businesses in Northern Virginia...

- ▶ Are slightly more optimistic about the economy's near-term outlook than last year, though hiring and retaining talent continues to be a challenge.
- ▶ Continue to rely on word of mouth, internal hiring, and online job boards for talent. Some are also increasing their reliance on part-time or contract workers. Fewer businesses use work-based learning methods such as internships or apprenticeships.
- ▶ Are split on remote work options. Though many businesses are continuing to expand remote work opportunities, others are moving back toward pre-pandemic remote work patterns.
- ▶ Place a heavy emphasis on formal educational credentials. Few employers are regularly willing to substitute equivalent work experience for education requirements when hiring.

SURVEY OVERVIEW

Between August 22 and November 1, 2023, 270 regional business leaders responded to a series of 32 survey questions covering a range of workforce and talent-related topics. The topics covered in this year's survey remain the same as those covered last year. Updates to this year's survey included rewording certain questions and adding additional response options to several questions.

The survey was directed to the individual at each business who was most familiar with hiring, talent development, and human resources decisions. Among those individuals who responded on behalf of their business, over half (59%) were members of the C-suite/executive leadership, 20% were human resources managers/directors or other HR professionals, and 21% identified as some other type of manager or employee with requisite knowledge. Among these individuals, 71% have been employed at their responding business, in Northern Virginia, for more than five years.

The survey was administered using two different methods:

- ▶ **Probability-based:** survey invitations and questionnaires were distributed by mail to a random sample of Northern Virginia businesses by the UVA Center for Survey Research (CSR), with options to respond online or by return mail. Half of these businesses were randomly selected to receive a noncontingent incentive of a \$2 bill as part of the first questionnaire packet. CSR also conducted preliminary calling and internet searching to verify business contact information, as well as follow-up reminder calling and emailing of businesses to improve response rates.
- ▶ **Non-probability-based:** an online survey link was posted on the Northern Virginia Chamber of Commerce's website, emailed to their members, and posted on their social media pages.

For the purposes of this summary report, responses gathered using both methods have been pooled/aggregated (with a total of 246 probability-based responses and 24 non-probability-based responses). Businesses were included in the survey sample if they have a location/establishment or employees within Northern Virginia, which is defined as the nine Commonwealth of Virginia jurisdictions included under the Region 8 planning district commission, or as part of the NOVA service area.^I Among responding businesses, 61% have just one location, 33% have multiple locations, and 6% are fully remote.

Responses are weighted to account for sampling design as well as to adjust for differing rates of response and ensure that the combined sample is reflective of Northern Virginia’s employer landscape in terms of industry sector and business size. The random sample of businesses used in the probability-based data collection was provided by Dynata, Inc., a third-party reseller of listings from Dun & Bradstreet’s comprehensive business database. Post-stratification weights based on business industry and size reflect the distribution of Northern Virginia businesses in this database.

Table 1 compares the unweighted frequency of responses for each demographic characteristic to frequencies following application of these weights. From this comparison, it is apparent that businesses in the raw materials and business support categories were overrepresented in survey responses compared to the number of businesses in the region, while businesses in the financial/intellectual services category were underrepresented. Similarly, smaller businesses (between five and nine employees) were underrepresented in survey responses, while larger businesses were overrepresented.

Table 1: Business Establishment Demographics – Shares of Responses

Industry Category	Unweighted	Weighted	Size Category	Unweighted	Weighted
Raw Materials	13%	8%	5 to 9 employees	27%	48%
Business Support	18%	14%	10 to 19 employees	28%	25%
Financial/Intellectual Services	24%	34%	20 to 99 employees	26%	20%
Sales/Personal Services	27%	28%	100 to 499 employees	12%	5%
Social Services/Wellbeing	18%	16%	500+ employees	6%	2%

Note: Due to the survey’s focus on workforce issues like hiring and retention, sole proprietorships as well as businesses with four or fewer employees were excluded from both samples.

Results reported throughout the remaining sections of this report are based on these weighted responses. Any reported frequencies include only “valid” responses.^{II} That is, cases where a respondent did not answer a question, or where the answer was “Don’t know/not sure” or “Not applicable,” are not included in the totals when calculating percentages.

For additional details regarding the survey design and methodology, see the Appendix.

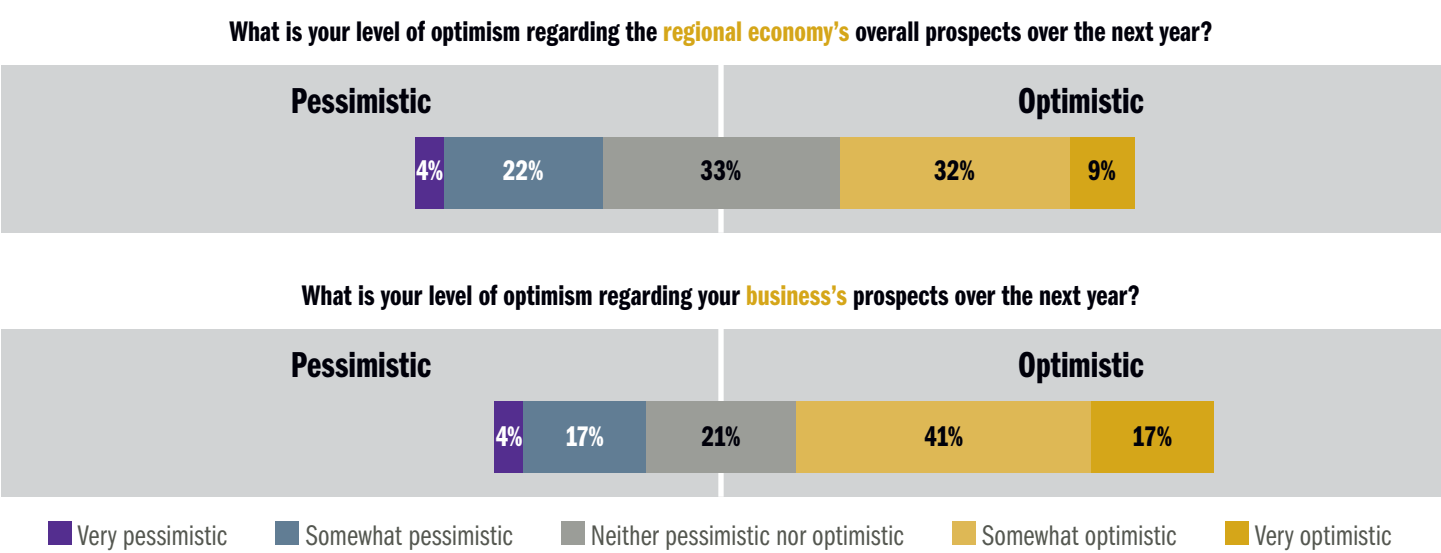
^I These include the cities of Alexandria, Fairfax, Falls Church, Manassas, and Manassas Park, as well as the counties of Arlington, Fairfax, Loudoun, and Prince William.
^{II} Note that cumulative frequencies may not sum due to rounding.

OVERALL BUSINESS/ECONOMIC OUTLOOK

Northern Virginia businesses' economic outlook was slightly more optimistic in 2023 than in 2022. Just over a quarter (26%) reported being either "somewhat pessimistic" or "very pessimistic" about the regional economy's prospects over the next year, while 41% reported feeling optimistic (*Figure 1*). In 2022, however, a third of Workforce Index respondents reported feeling pessimistic about the economy, with 6% reporting that they were "very pessimistic." Respondents' business outlook was even more optimistic than their economic outlook, with 58% reporting feeling at least somewhat optimistic (*Figure 1*). This is similar to last year's Index, where 57% of respondents reported feeling optimistic about their businesses' prospects over the next year.³

Respondents to this survey, however, had a decidedly more optimistic view about their businesses than respondents to the Census Bureau's Business Trends and Outlook Survey (BTOS), which collects data every two weeks from a sample of businesses nationwide.⁴ As of November 2023, only 39% of BTOS respondents in the Washington, D.C. metropolitan statistical area (MSA) said their business was doing above average or excellent.⁵

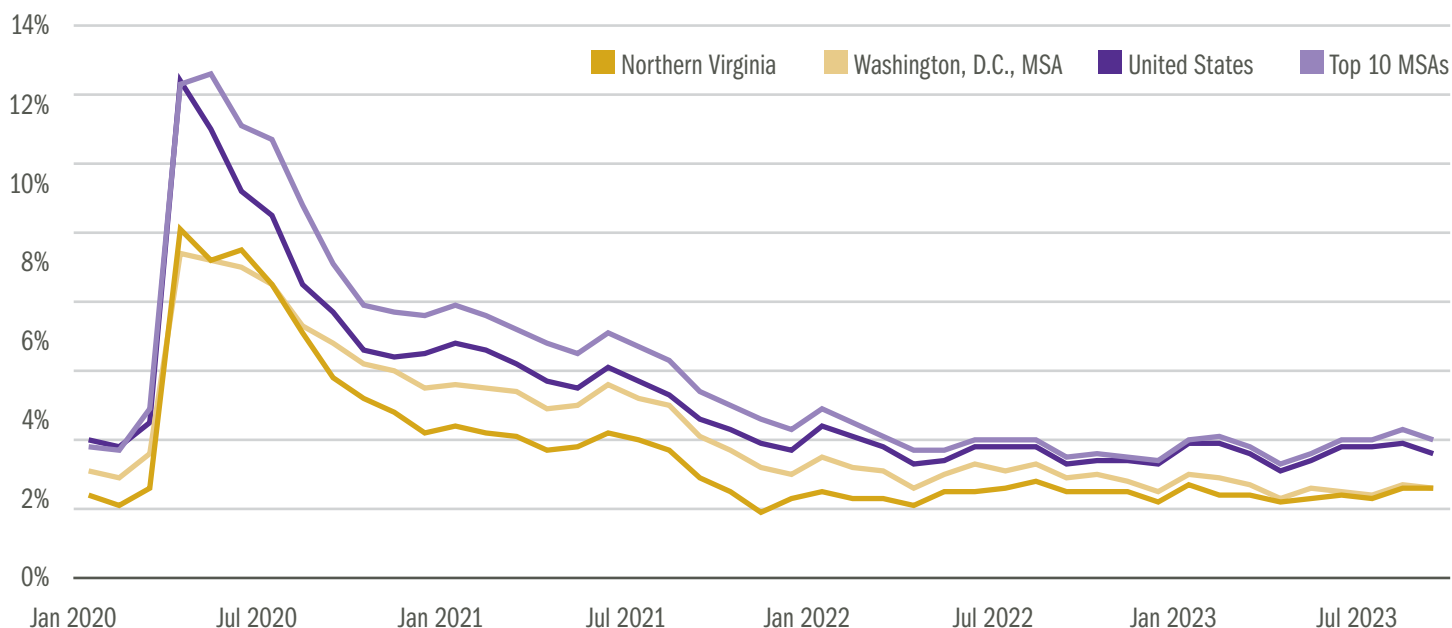
Figure 1: Business and Economic Outlooks Among Survey Respondents



This more optimistic view about the economy is unsurprising, given that unemployment has leveled out in Northern Virginia, hovering around 2.5% since early 2022. Unemployment has consistently been lower in Northern Virginia than in the top 10 MSAs and in the United States as a whole, both of which have seen unemployment rates of around 4% during the same time period (*Figure 2*).



Figure 2: Unemployment Rate

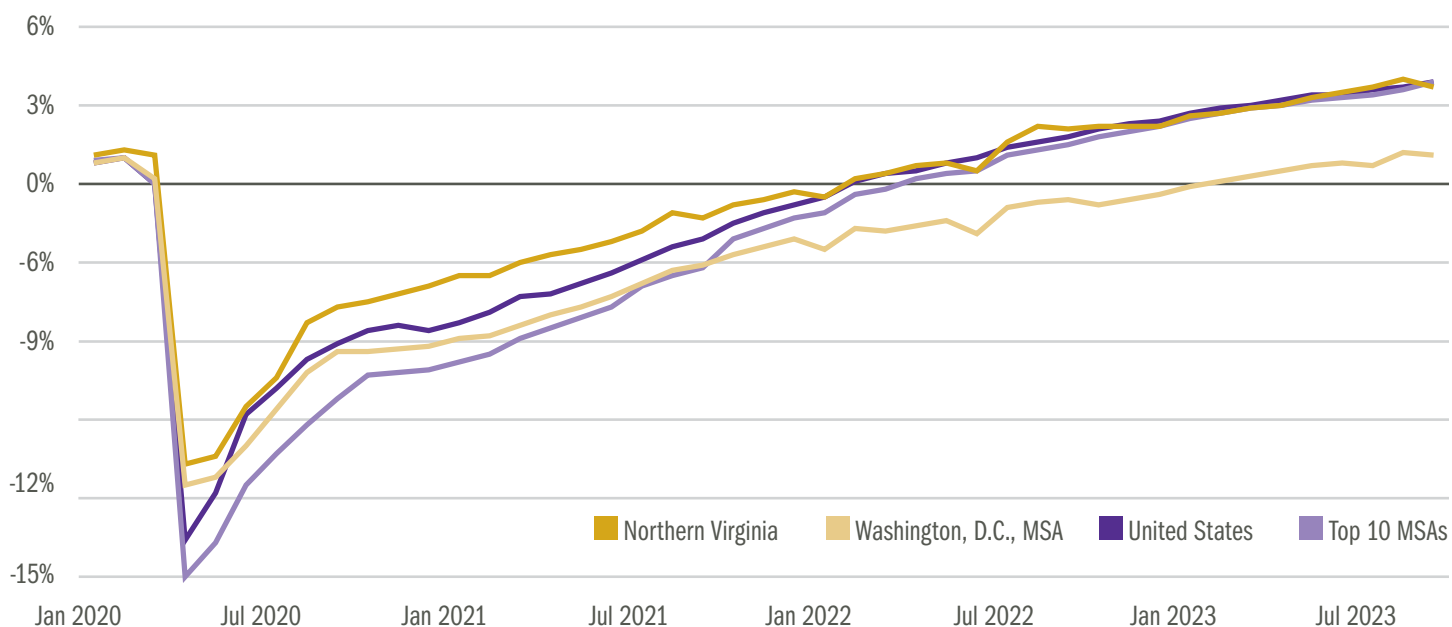


Source: U.S. Bureau of Labor Statistics, “Unemployment rates by county, not seasonally adjusted,” Local Area Unemployment Statistics, accessed November 29, 2023, www.bls.gov/lau/data.htm; U.S. Bureau of Labor Statistics, “Employment status of the civilian noninstitutional population, not seasonally adjusted,” Current Population Survey, accessed November 29, 2023, www.bls.gov/cps/data.htm.

Note: The top 10 MSAs in the United States, ranked by population as of the 2020 Census, are as follows: New York City; Los Angeles; Chicago; Dallas-Fort Worth; Houston; Washington, D.C.; Philadelphia; Miami; Atlanta; and Boston.

Employment in Northern Virginia has also continued to grow and was 3.5% higher than the 2019 average as of October 2023. Though employment growth in the Washington, D.C., MSA has been slower, employment surpassed the 2019 average in early 2023 and remains about 1% higher (Figure 3).

Figure 3: Employment – Percentage Change from 2019 Average

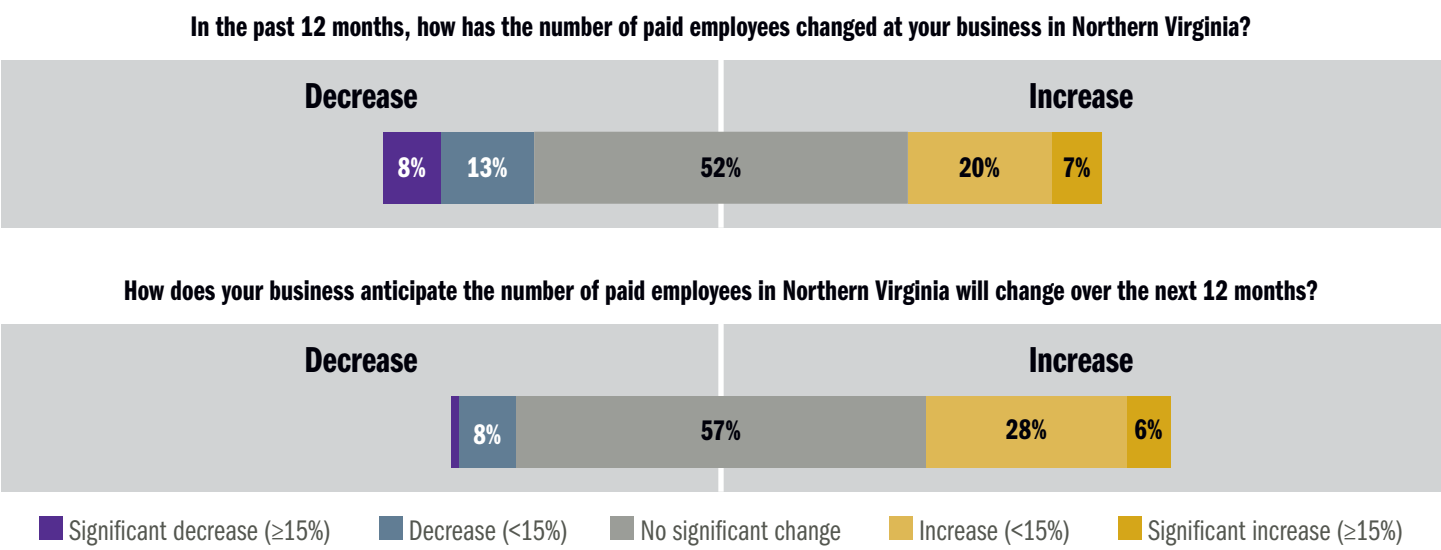


Source: U.S. Bureau of Labor Statistics, “Employees on nonfarm payrolls, seasonally adjusted,” Current Employment Statistics (State and Metro Area), accessed November 29, 2023, www.bls.gov/sae/data/.

Note: For the data in Figure 3, Northern Virginia is defined as the 18 Virginia jurisdictions that are included in the Washington, D.C., MSA.

In general, the number of paid employees has not changed significantly for most businesses (52%) in the past 12 months. Over a quarter (27%) have seen some sort of increase in employees, and a slightly smaller portion (21%) have seen a decrease (Figure 4). However, this percentage is higher than it was in last year's Workforce Index, where only 15% reported a decrease in the number of paid employees.⁶ About a third of businesses are expecting to see an increase in the number of paid employees over the next 12 months, but the majority anticipate no significant change (Figure 4).

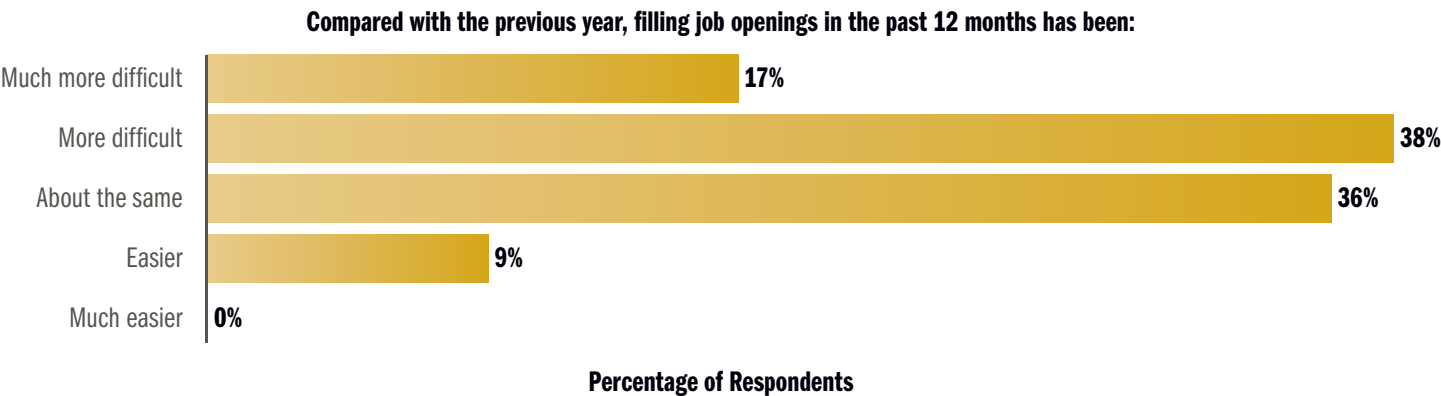
Figure 4: Past and Future Employment Changes Among Survey Respondents



HIRING TRENDS AND CHANGES

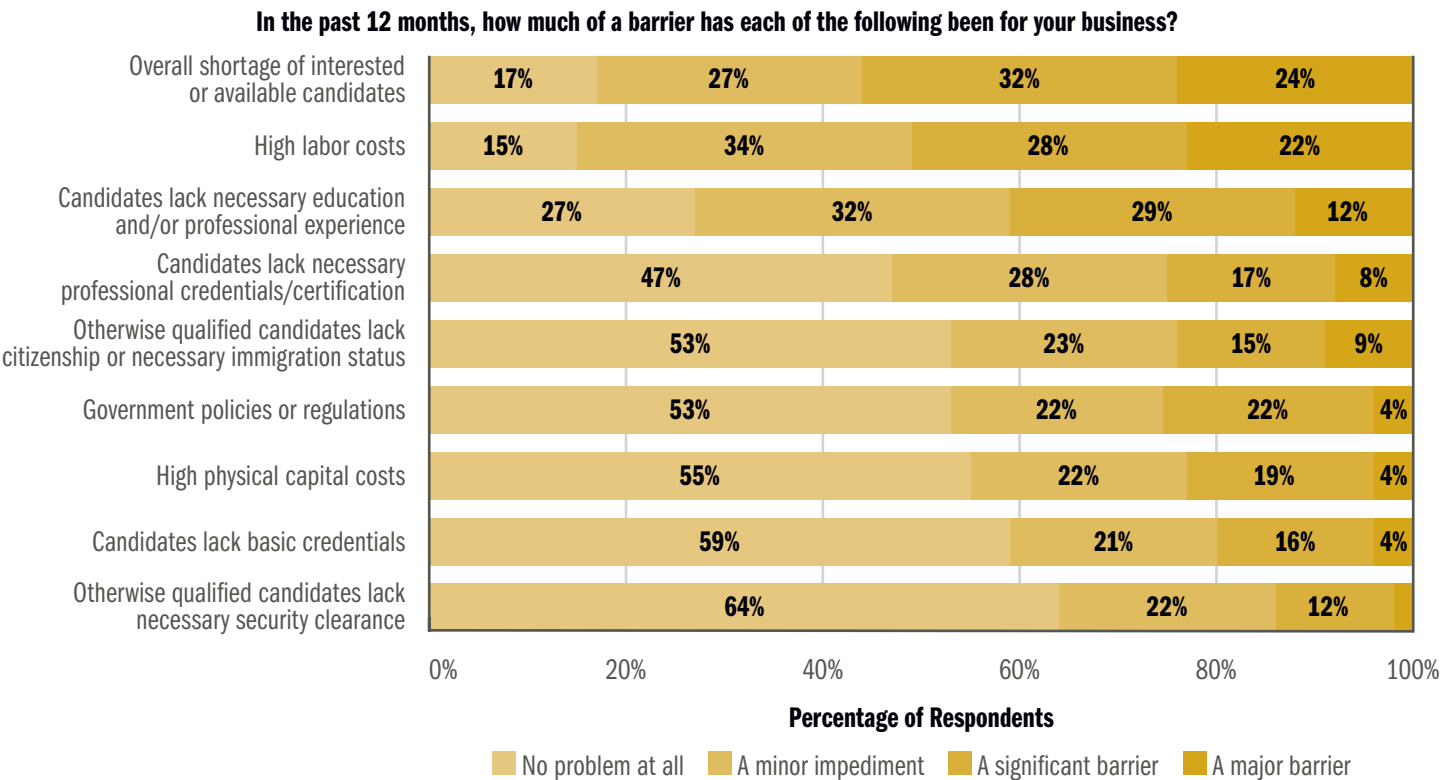
Over half (55%) of respondents reported that it was either more difficult or much more difficult to fill job openings in the last 12 months than it had been in the previous year (Figure 5). While this is far lower than in the 2022 Workforce Index — where nearly three-quarters of businesses reported increased difficulties filling job openings — over a third reported that filling job openings has been “about the same,” indicating that businesses in the region are still finding it difficult to hire (Figure 5).⁷

Figure 5: Difficulty Hiring



As was the case in 2022, the primary reasons for these hiring challenges were an overall shortage of candidates; higher labor costs; and, to a lesser extent, a lack of necessary education and/or professional experience (Figure 6). When given the chance to identify additional barriers not included among available responses, respondents frequently cited difficulties with keeping wages competitive, as well as candidates’ desire for remote work.

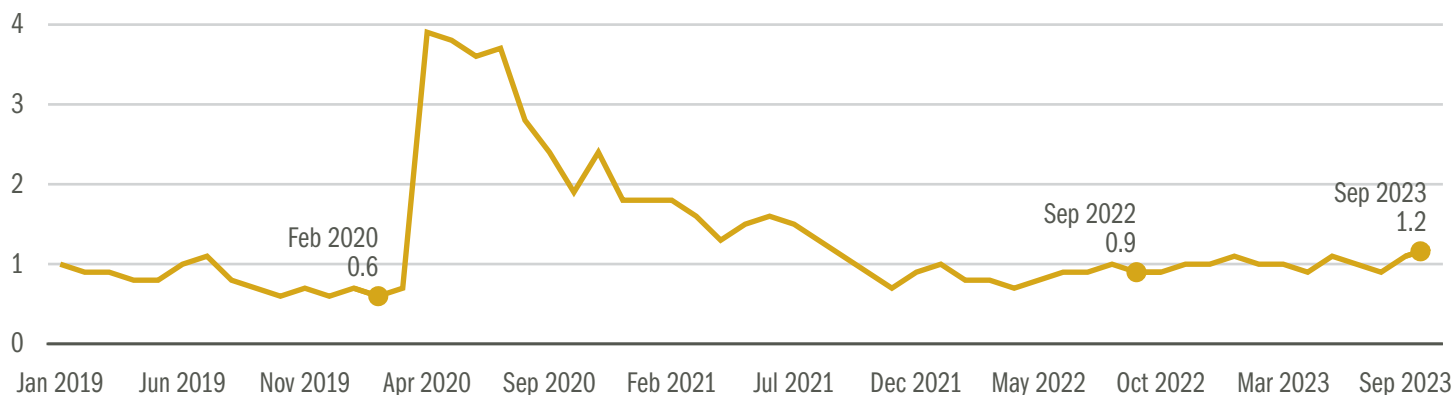
Figure 6: Barriers to Hiring



It is unsurprising that a shortage of candidates is the primary hiring barrier facing businesses in Northern Virginia, given the area's relatively tight labor market. The number of unemployed per job opening ratio is one way the U.S. Bureau of Labor Statistics measures the tightness of the labor market. A ratio of 1.0 means that there is one job opening for every unemployed person; values below 1.0 indicate a tight labor market, where there are more openings than individuals available to fill them (not accounting for skill or role); and values above 1.0 indicate a relatively slack labor market.⁸ The unemployment per job opening ratio, as of September 2023, was 0.7 for the United States and 0.4 for the state of Virginia.⁹ This indicates that there is a tight labor market nationwide, and even more so at the state level.

While this ratio is unavailable for geographies below the state level, we can approximate it by looking at the ratio of unemployment per job posting, where a ratio of 1.0 would indicate one job posting per unemployed person. In general, this ratio tends to be higher than the unemployment per opening ratio, as there are often more job openings than there are postings. However, the two metrics tend to follow the same trend over time. The unemployment per posting ratio, as of September 2023, was 1.2 for Northern Virginia, 1.6 for Virginia, and 1.9 for the United States (Figure 7).¹⁰ This suggests that the unemployment per opening ratio is likely even lower for our region than for Virginia as a whole.

Figure 7: Ratio of Unemployed per Job Posting in NOVA Region



Sources: U.S. Bureau of Labor Statistics, "Unemployment by county, not seasonally adjusted," Local Area Unemployment Statistics, accessed November 29, 2023, www.bls.gov/lau/data.htm; Lightcast™ Analyst, 2023.4 release.

However, it should be noted that the unemployment per job posting ratio in Northern Virginia has risen slightly over the past year (from 0.9 in September 2022 to 1.2 in September 2023), indicating that, while the labor market is still tight, it is slightly more slack than last year. That could help to explain why a smaller percentage of businesses indicated that a shortage of candidates was a major or significant barrier in this year's *Index* — in 2022, 63% of businesses indicated that this was a major or significant barrier to hiring, compared to only 56% in 2023 (Figure 6).¹¹

The three main changes in hiring and recruitment that businesses said are likely to become increasingly common over the next few years are the number and types of jobs requiring technology skills; the use of part-time, contract, or temporary workers; and the use of internal recruiting and advancement (Figure 8).

There were a few notable changes in the responses to this question from last year to this year. Most notably was an increase in the share of respondents anticipating the use of part-time, temporary, or contract workers to increase — over a quarter (26%) of businesses reported that their use of these workers is likely to increase, compared to only 18% in last year's *Workforce Index*. This could be a response to continued difficulties with hiring employees. In fact, when given a chance to identify additional hiring or recruitment changes expected in the next few years, respondents frequently cited recruitment outside the state or country and an increased usage of internships, indicating that businesses are turning to unique methods for filling open positions. However, it should be noted that, although the use of part-time, contract, or temporary workers was the second-highest practice anticipated to increase over the next few years, it was also the second-highest practice anticipated to decrease. This indicates that businesses seem to be split on how to solve their hiring challenges.

Figure 8: Changes and Trends in Hiring

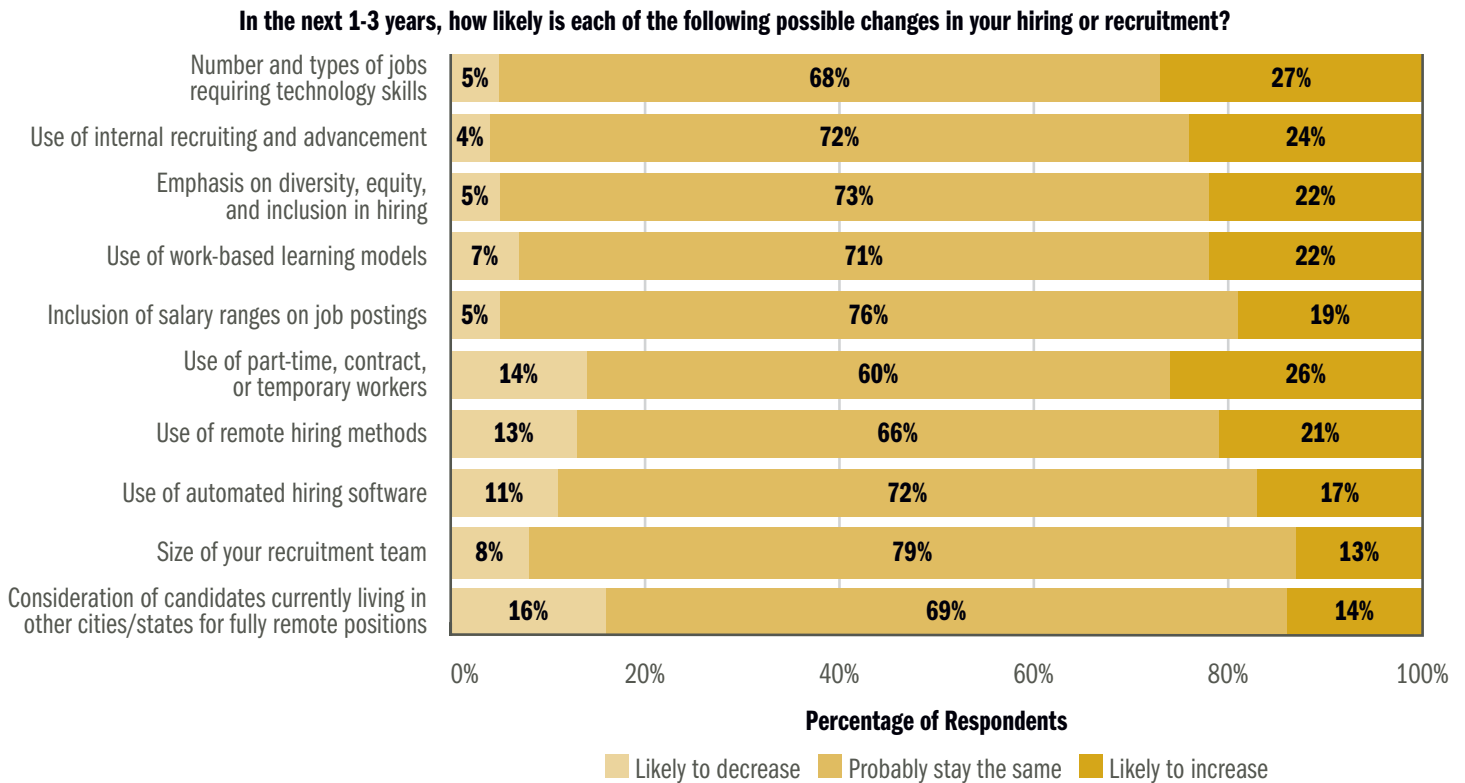
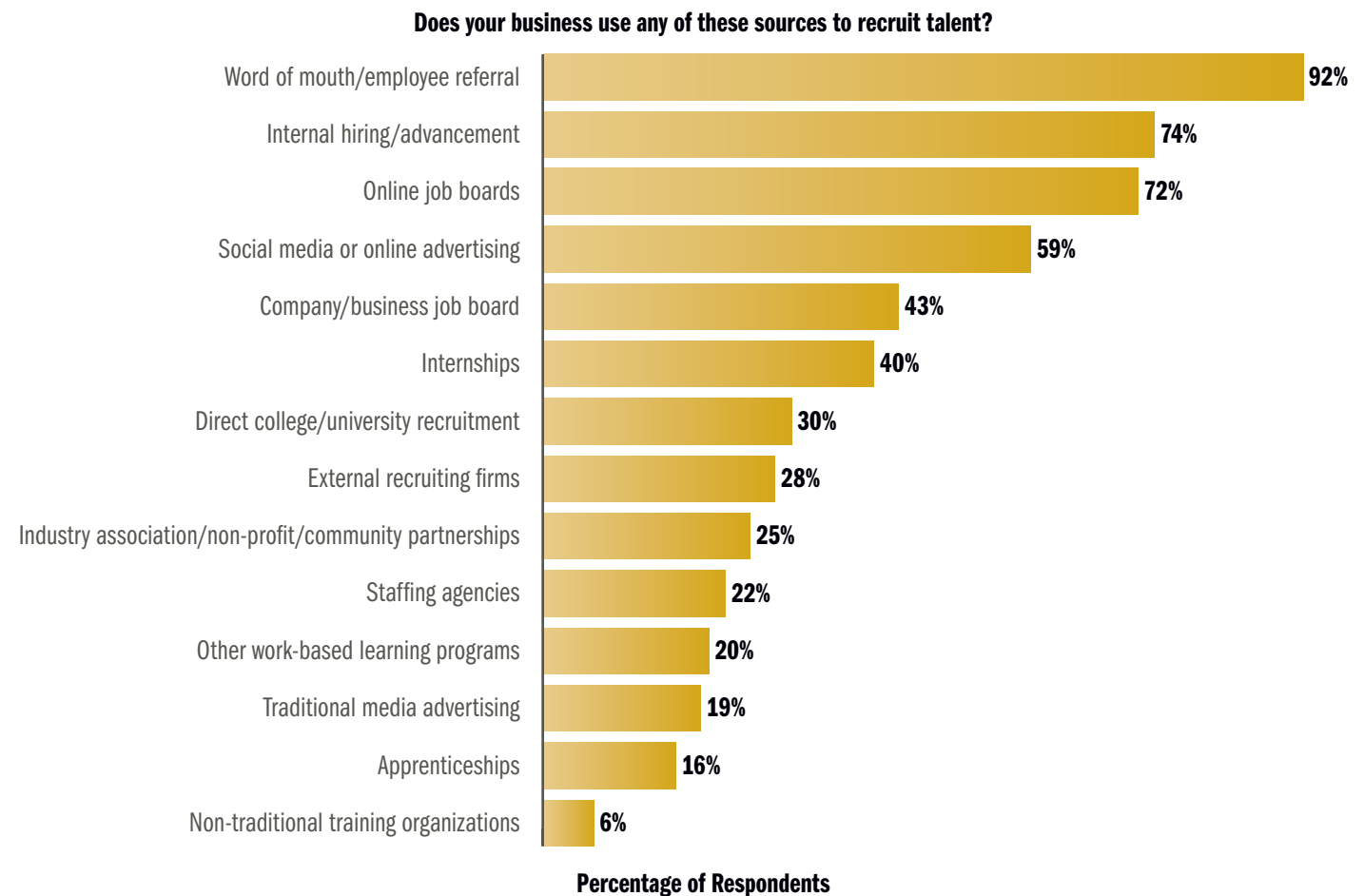


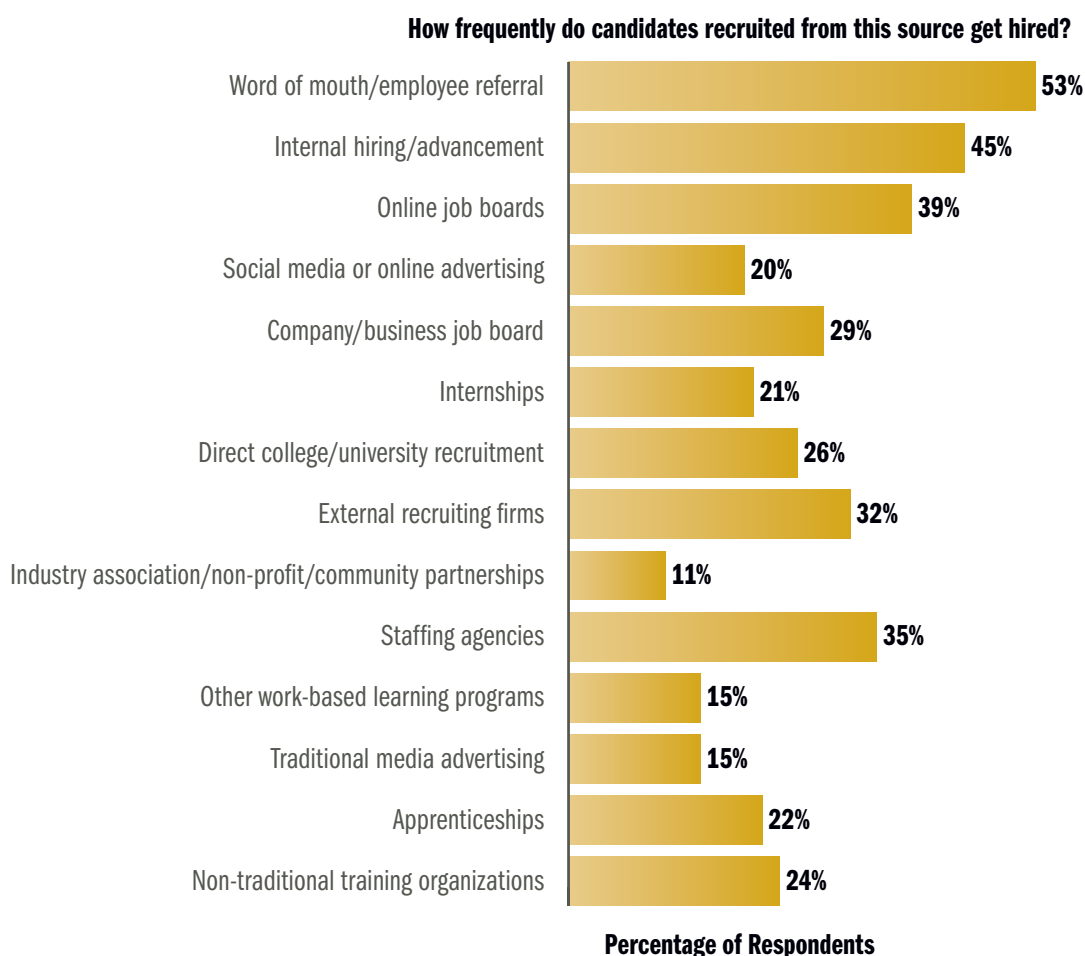
Figure 9a: Hiring Source Usage



Another notable change is the decrease in the percentage reporting an increased emphasis on diversity, equity, and inclusion (DEI) in hiring. While 29% of businesses in last year's *Workforce Index* reported that emphasis on DEI was likely to increase, only 22% of this year's respondents reported the same thing. In fact, emphasis on DEI was the top practice expected to increase in last year's *Workforce Index* but is only the fourth-highest this year.

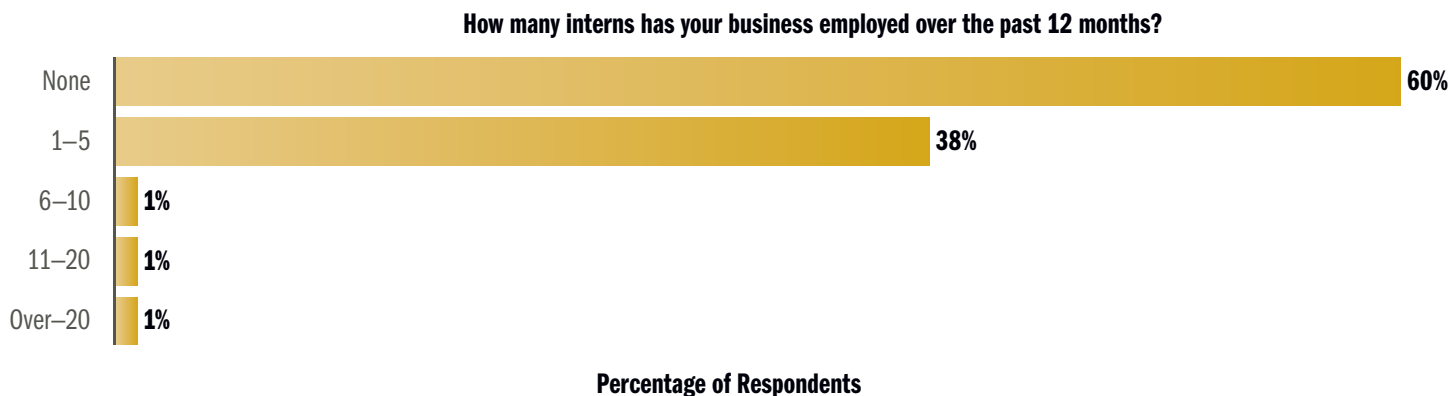
For Northern Virginia businesses recruiting new employees, word of mouth or employee referral is by far the most commonly used source (92%), while internal hiring and online job boards are also used by nearly three-quarters of businesses. Work-based learning methods, however, are used less frequently, with only 40% of businesses reporting that they use internships to recruit, and even smaller shares reporting that they use apprenticeships or other work-based learning programs — 16% and 20%, respectively (*Figure 9a*). In addition, less than a quarter of businesses reported that candidates recruited from internships, apprenticeships, or other work-based learning programs are either very often or nearly always hired. This is lower than many other sources, even some that are used less frequently, such as staffing agencies and non-traditional training organizations (*Figure 9b*).

Figure 9b: Candidates Very Often or Nearly Always Hired from Source



Only 40% of businesses reported employing any interns in the last year, and the vast majority of those that did employed only five or fewer (*Figure 10*). Even some of the largest businesses in the region employed very few interns; over half of businesses with 500+ employees had five or fewer interns over the past 12 months. However, when given a chance to cite additional changes anticipated in their hiring and recruitment practices, respondents frequently reported that they anticipate the use of internships increasing over the next few years.

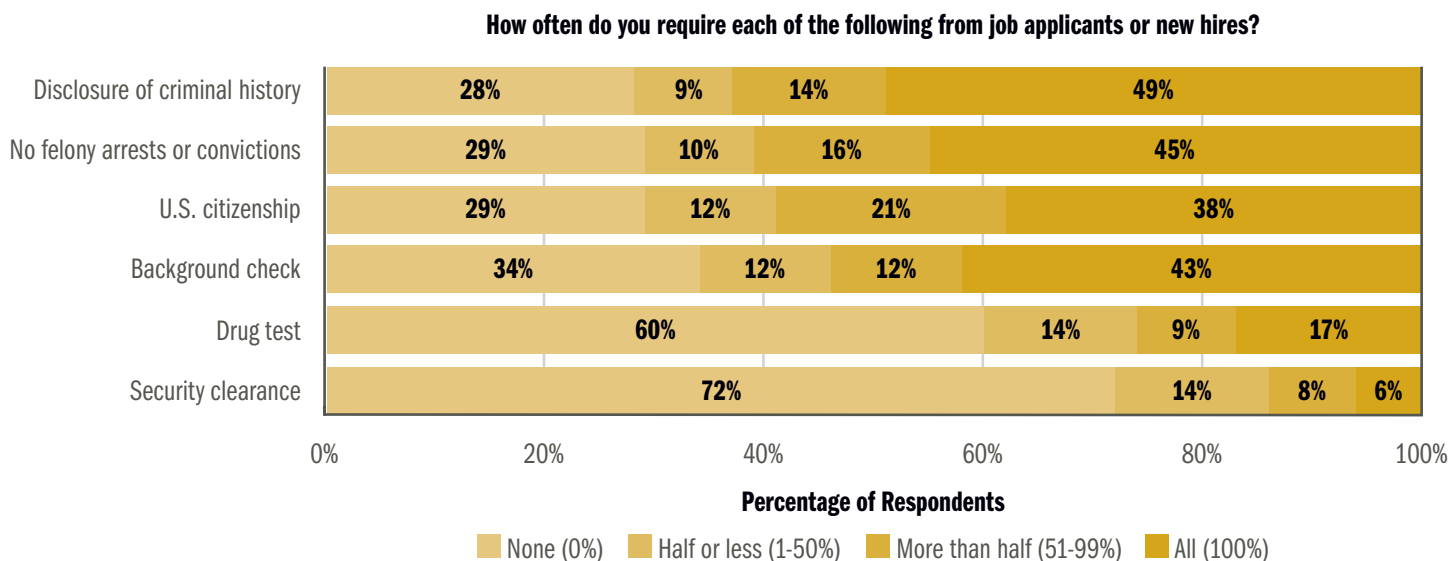
Figure 10: Recent Internship Employment



In general, hiring requirements have become less strict over the last year. While a majority of businesses require disclosure of criminal history, a background check, and U.S. citizenship for at least some employees, the share of businesses that require these has dropped significantly since the publication of last year's *Workforce Index*. U.S. citizenship is no longer the most common hiring requirement, and over a quarter of businesses indicated that they do not require citizenship for any of their new hires (*Figure 11*). Similarly, about a third of businesses said that they do not require background checks for any of their new hires, up from 25% last year.¹²

Drug tests are still uncommon, with only 40% of businesses requiring them of any new hires. Nearly three-quarters of businesses also indicated that they do not require any of their employees to have a security clearance (*Figure 11*). This is surprising, given the prevalence of government contracting in the region, and the fact that security clearances are by far the most requested certification on regional job postings.¹³

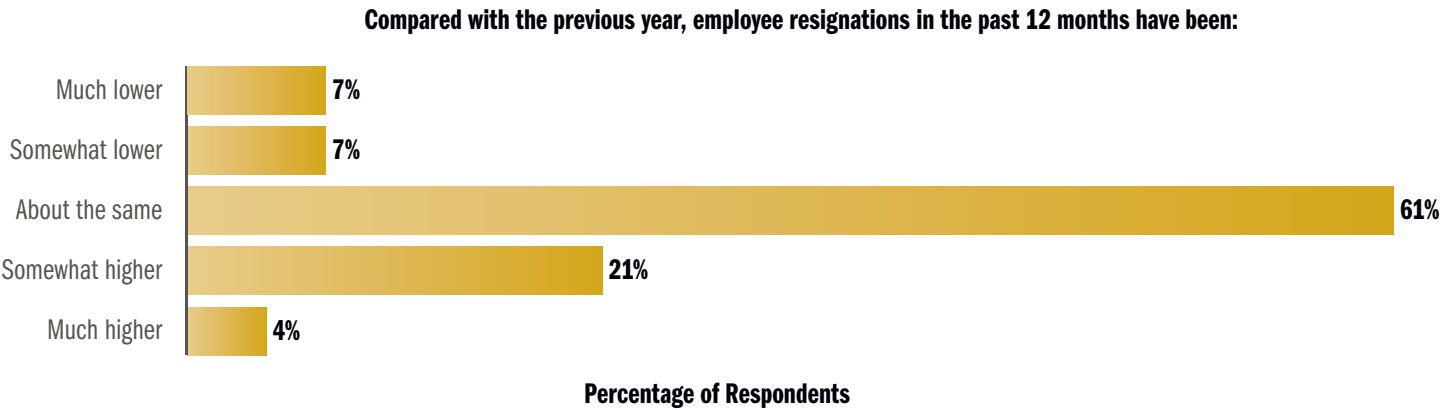
Figure 11: Hiring Requirements



RETENTION AND REMOTE WORK

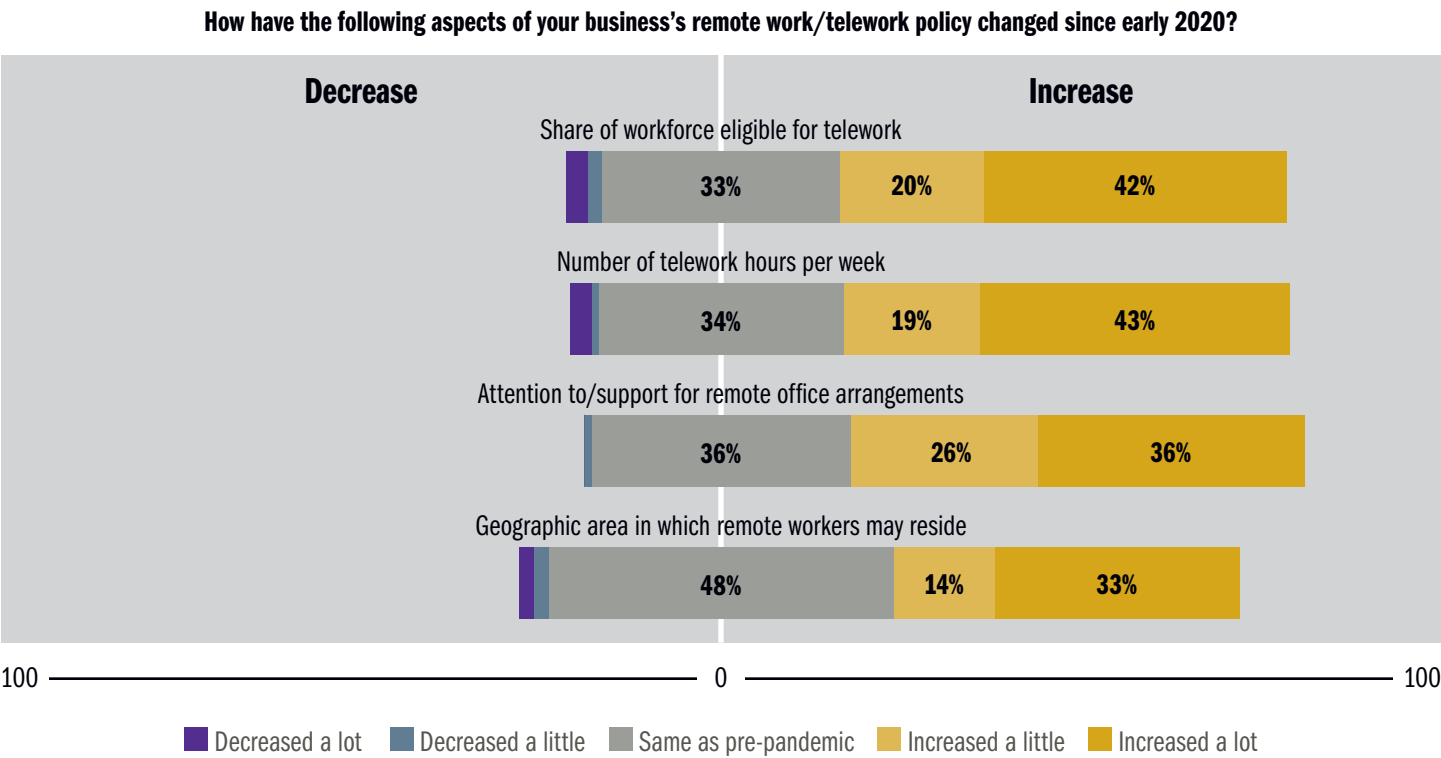
The majority of businesses reported that the number of employee resignations remained largely the same as the previous year (61%). However, a quarter of businesses reported that resignations were at least somewhat higher, compared to only 14% reporting a decrease (Figure 12).

Figure 12: Resignations



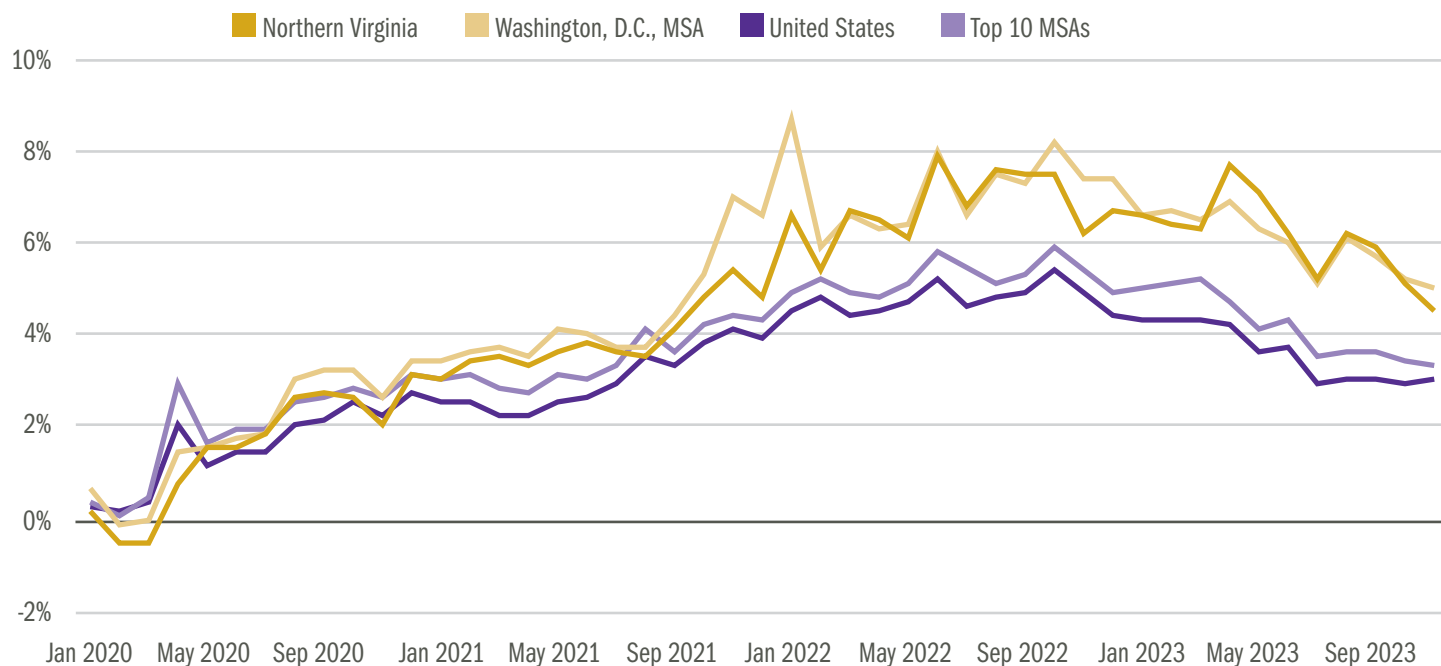
Among businesses in the region, 62% have increased the share of employees who are eligible for remote work since early 2020, and the same percentage have increased the number of telework hours for which employees are eligible per week (Figure 13). However, about a third of businesses report that the share of employees who are eligible for remote work and/or the number of telework hours for which employees are eligible per week is the same as it was pre-pandemic. This is higher than the percentage that reported the same in 2022 (26% and 29%, respectively). This change could reflect the push from many companies – including large companies like Amazon and Apple – for their employees to return to the office.¹⁴

Figure 13: Changes to Remote Work Policies

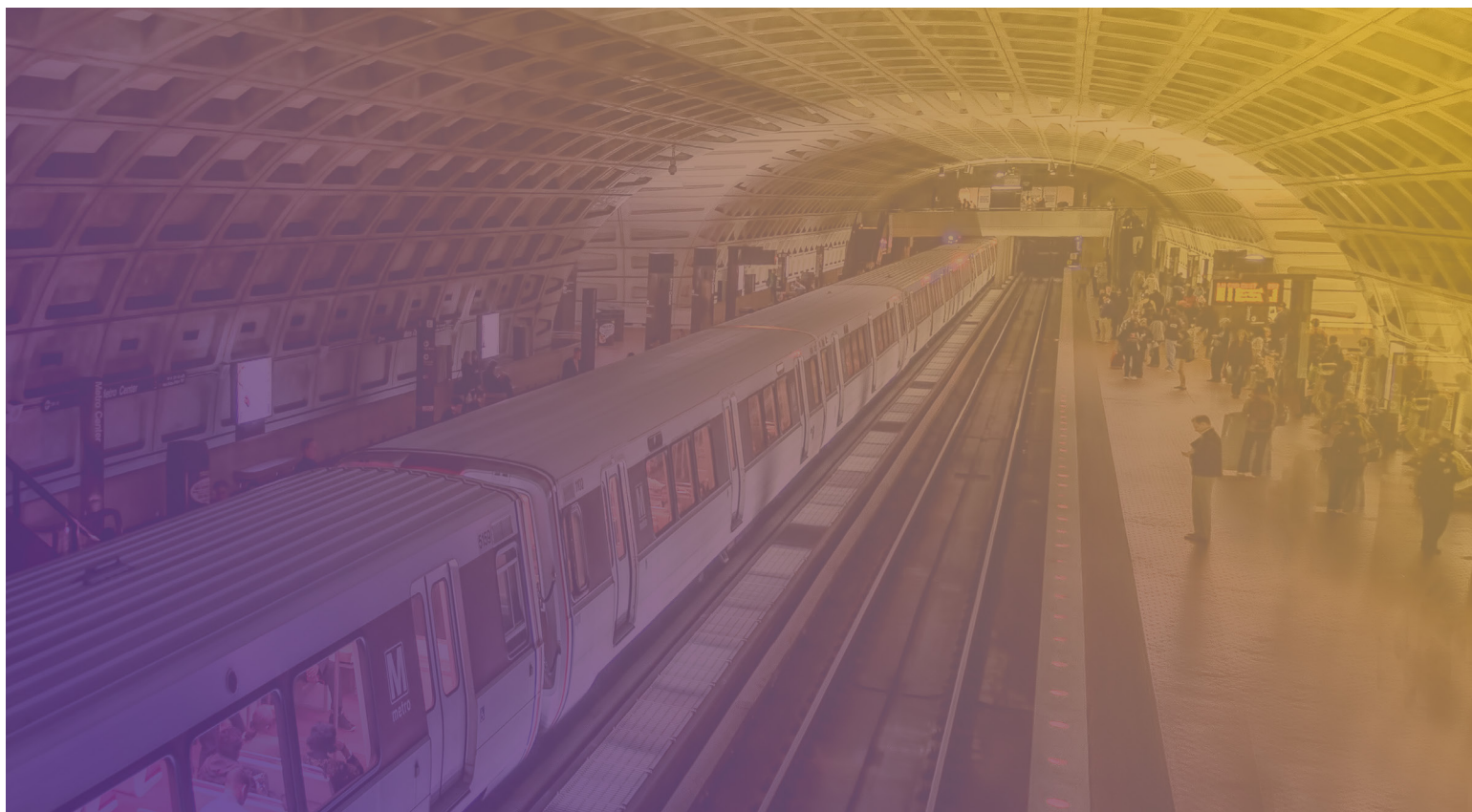


Regional job postings also reflect this trend. Though the share of job postings mentioning remote work is still significantly higher than the 2019 average, both in Northern Virginia and in the greater Washington, D.C., area, the share of remote postings has decreased by about 2 percentage points since the end of 2022 (Figure 14).

Figure 14: Percentage Point Change in Remote Job Posting Share from 2019 Average

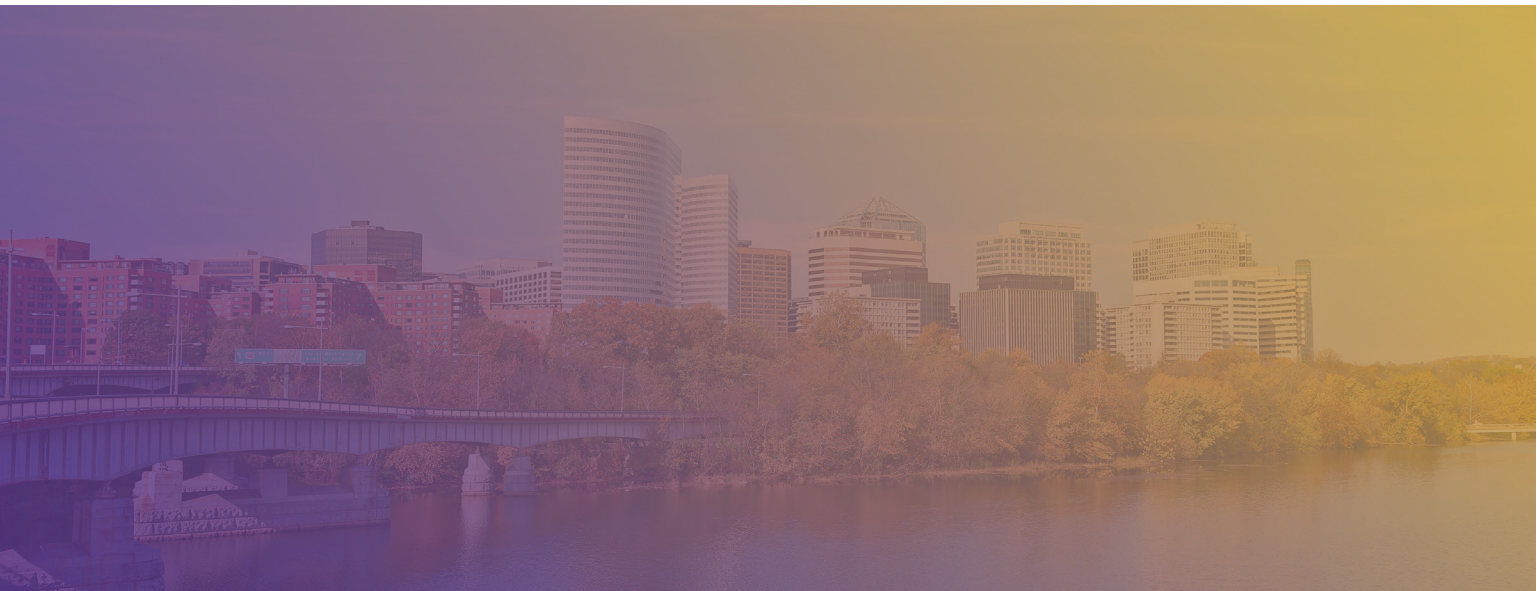
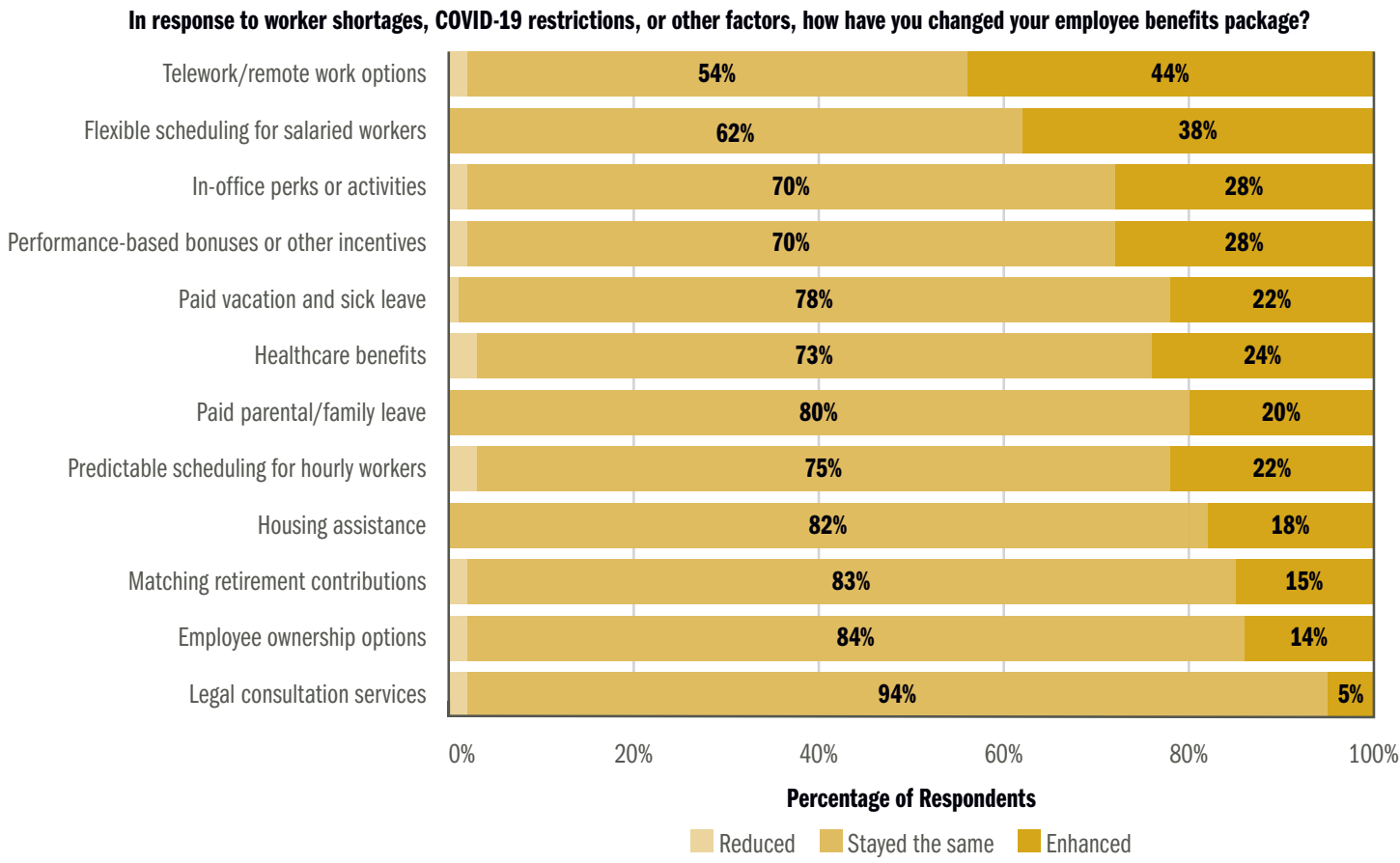


Source: Lightcast™ Analyst, 2023.4 release.



Despite the decrease in remote job postings in the region, telework/remote work options were the most frequently enhanced benefits, and flexible scheduling was the second-most frequently enhanced (*Figure 15*). However, the percentage of businesses that reported enhancing telework options decreased significantly from the 2022 *Workforce Index*, when over half of businesses reported the same thing.¹⁵ This, too, seems to indicate that businesses are decreasing their reliance on remote work.

Figure 15: Changes to Employee Benefits

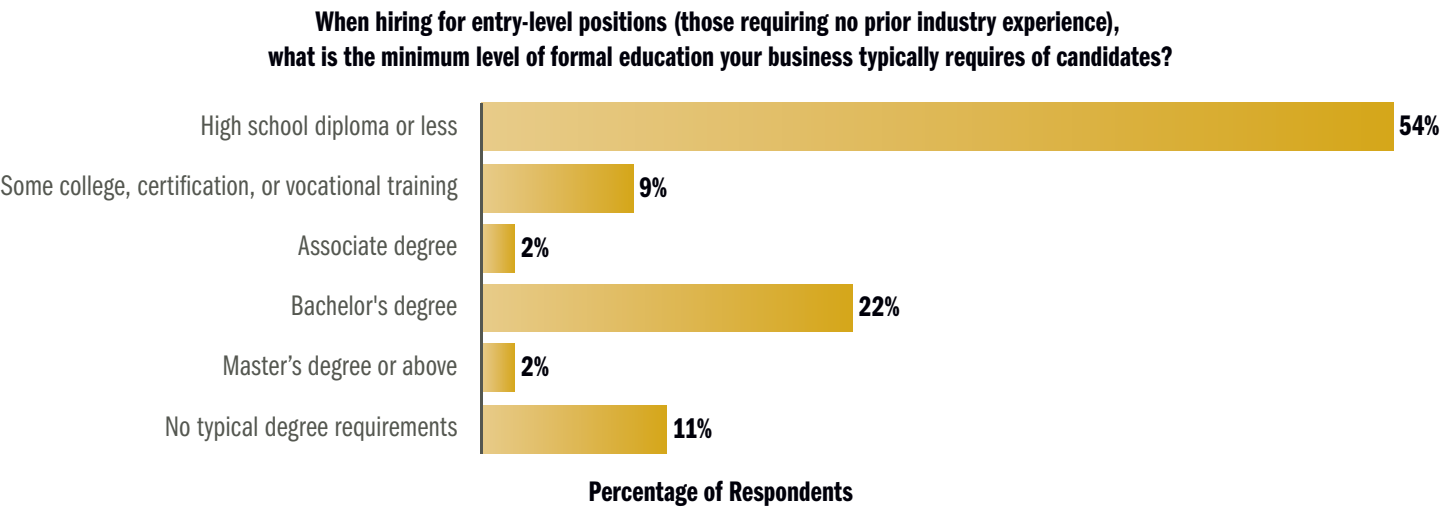


EDUCATION AND PROFESSIONAL DEVELOPMENT

In 2023, Virginia eliminated degree requirements for about 90% of state government jobs.¹⁶ This is the latest in a nationwide push away from degree requirements and toward skills-based hiring.

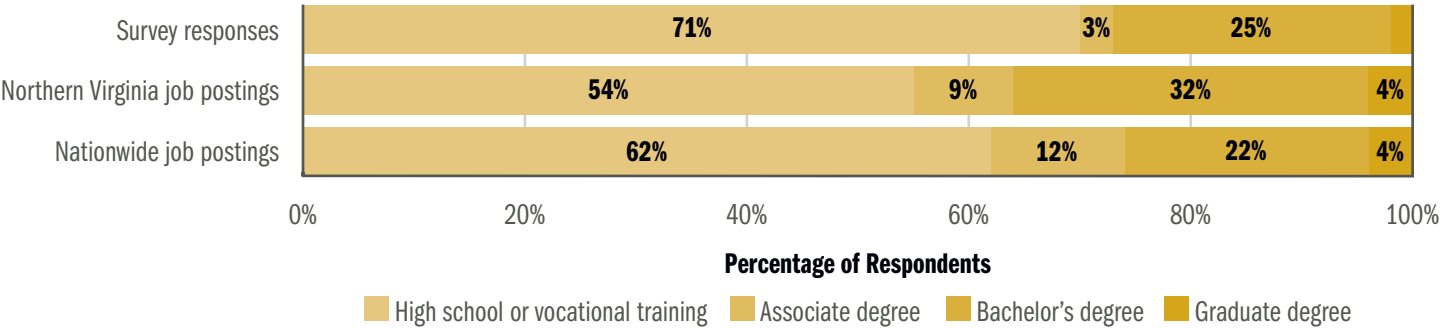
The majority of businesses in this year's *Workforce Index* (54%) indicated that they require only a high school diploma or less for entry-level positions (defined as those that require no prior industry experience). About a quarter require a bachelor's degree or above, and about 10% require some college, a certification, vocational training, or an associate degree (Figure 16). Another 11% indicated that they have no typical degree requirements for entry-level jobs. This distribution is relatively similar to last year's survey, though the addition of "no typical degree requirements" as an answer choice may have shifted some responses away from "high school diploma or less."

Figure 16: Minimum Education Required, Entry-Level Positions



Education requirements on job postings vary dramatically from survey responses. Of respondents who indicated that their business has a minimum education requirement, only a quarter said that they require a bachelor's degree; meanwhile, nearly a third of entry-level job postings in the region in the past 12 months required a bachelor's degree (Figure 17). However, it should be noted that Lightcast's Analyst tool, which aggregates job posting data across thousands of online job boards, is unable to determine minimum education requirements for around 40% of regional entry-level postings. It is possible that most of these unspecified postings would require a high school diploma or less. It may also be the case that businesses have different entry-level education requirements for different types of jobs, and survey respondents selected only the lowest of those education levels.

Figure 17: Minimum Required Education in Survey Responses vs. Entry-Level Job Postings



Source: Lightcast™ Analyst, 2023.4 release.

Note: Due to data source limitations, entry-level job postings are defined here as those requiring ≤1 year of experience. Only job postings with a minimum education level and experience level listed are included. Survey responses indicating "no typical degree requirements" have been excluded.

Among businesses in the region, 60% see formal education as not at all or only somewhat important when considering candidates for hire (Figure 18). However, the vast majority of these businesses report requiring just a high school diploma. Among businesses that consider formal education very important or essential in hiring, nearly three-quarters require some sort of formal education beyond a high school diploma (Figure 19). These results suggest that, regardless of a nationwide trend toward more skills-based hiring, formal education is still an important factor in hiring for the Northern Virginia region.

Figure 18: Importance of Education in Hiring

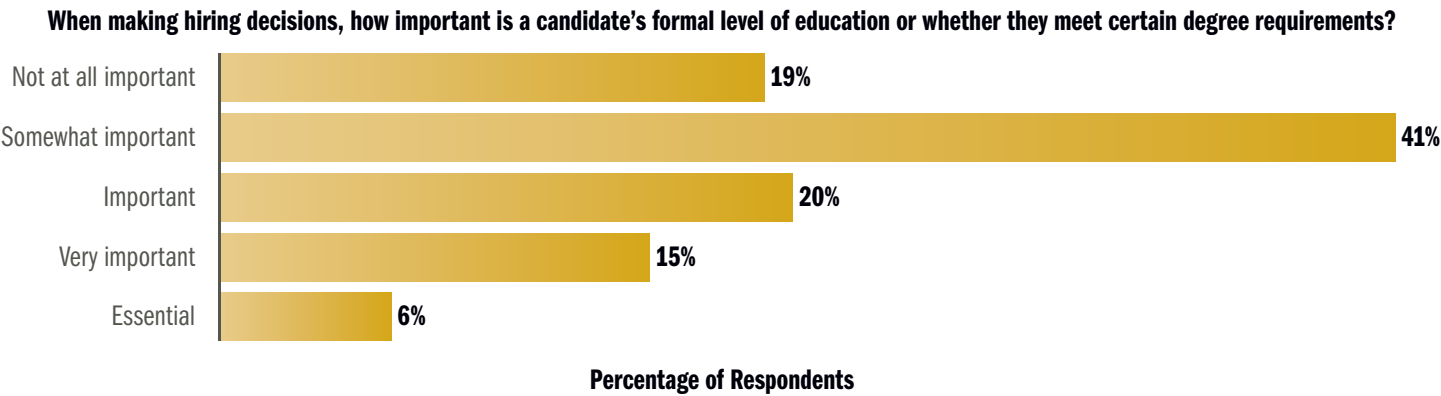
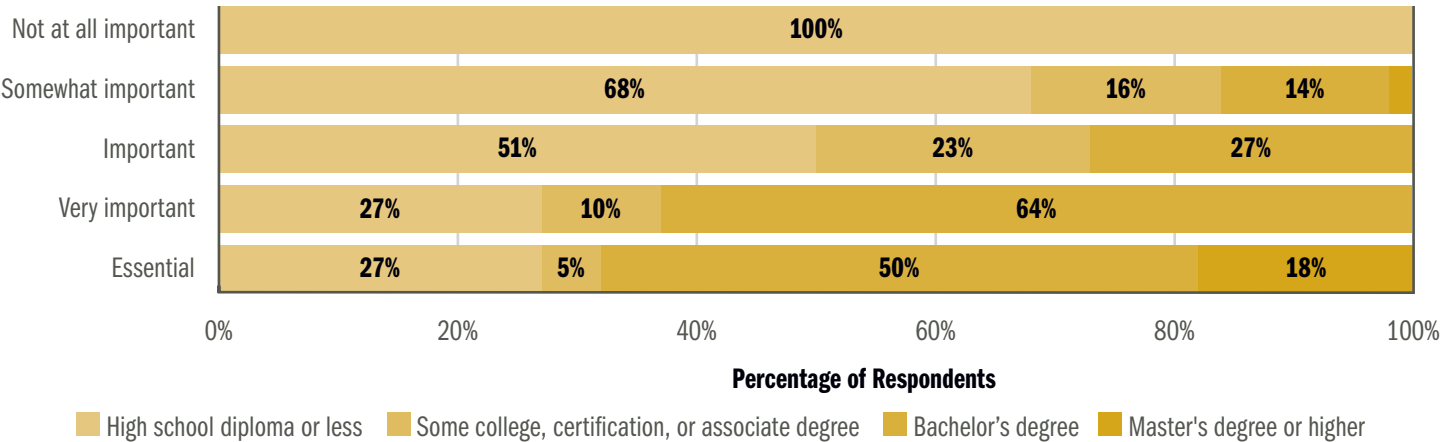


Figure 19: Importance of Education by Minimum Level Required for Entry-Level



Note: Chart excludes businesses with no typical degree requirements.

In addition, most businesses in Northern Virginia (62%) are only sometimes or rarely willing to accept equivalent professional experience in lieu of a degree or credential; over one-fifth are never willing to accept equivalent experience (Figure 20). Despite continued challenges with hiring and retaining talent, this percentage has increased slightly from last year's *Workforce Index*; in 2022, only 17% reported that they are never willing to accept equivalent experience.¹⁷

In-house training is the most commonly offered professional development benefit (Figure 21a), as well as the most frequently used by eligible employees (Figure 21b). Other types of training (on-demand/web-based and contracted) are also among the most commonly used by employees, though they are offered by a much smaller share of businesses. Continuing education benefits — including tuition reimbursement and flexible schedules — are offered by many businesses but are not commonly used.

These results are largely consistent with those of last year's survey, with one notable exception. While a similar share of businesses offer a formal mentoring process, employees' use of this benefit has increased dramatically; in 2023, 44% of businesses reported that over half of eligible employees use the formal mentoring process, compared to only 29% in 2022. It is also worth mentioning that the share of businesses offering each type of professional development has decreased slightly since publication of last year's *Workforce Index*.¹⁸

Figure 20: Willingness to Accept Equivalent Experience

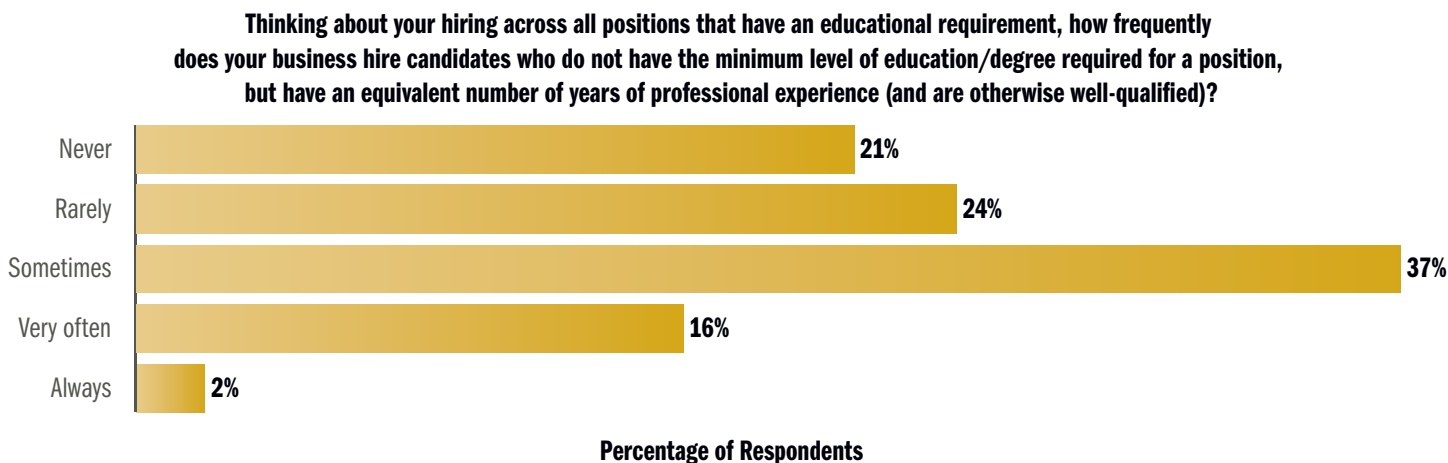


Figure 21a: Professional Development Offerings

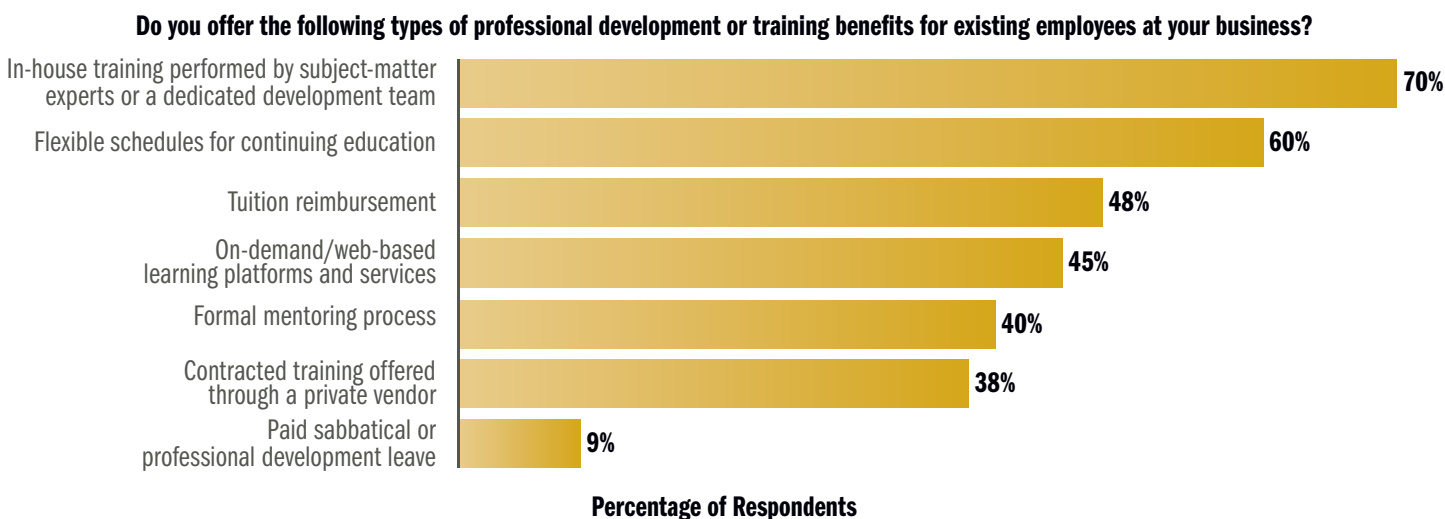
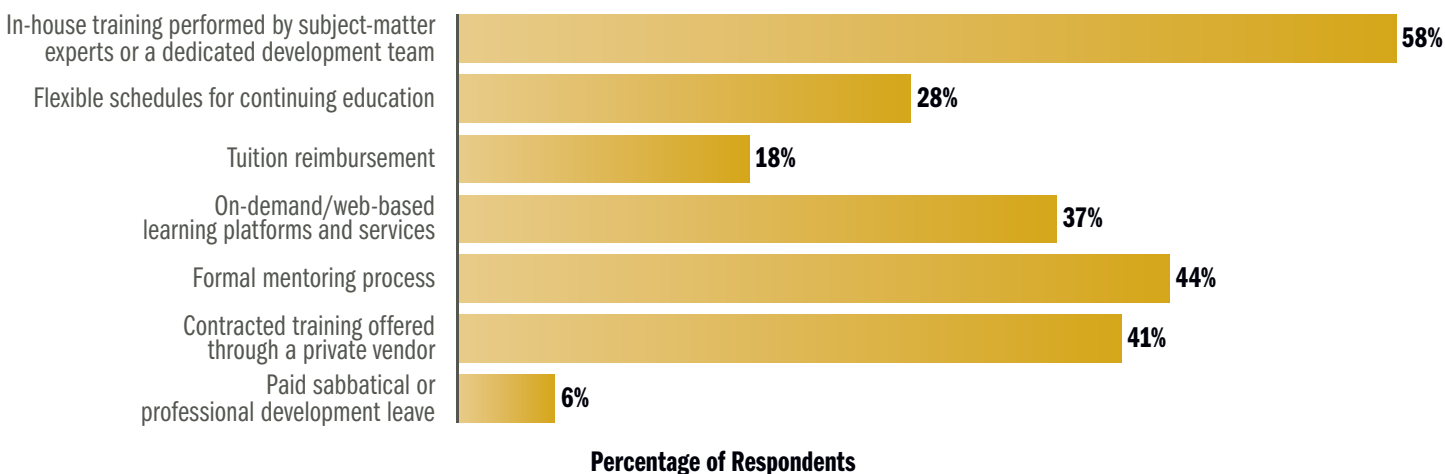


Figure 21b: Majority of Eligible Employees Using Benefits



CONCLUSION

Though the economy has cooled a bit, a tight labor market and high labor costs are still making it hard for Northern Virginia businesses to hire and retain talent. These continued difficulties are causing some businesses to turn to alternate methods of hiring, including the use of part-time, contract, or temporary employees. However, businesses are still primarily relying on traditional hiring methods, such as word of mouth, internal hiring and advancement, and online job boards. Work-based learning approaches, such as apprenticeships and internships, remain underutilized, and formal education continues to be an important factor in hiring decisions.

APPENDIX: SURVEY METHOD & DATA

This appendix includes a discussion of the general methodology for the *2023 Northern Virginia Workforce Index Survey*, conducted by the Center for Survey Research (CSR) at the University of Virginia's Weldon Cooper Center on behalf of Northern Virginia Community College and the Northern Virginia Chamber of Commerce.

Sampling: To support the representation of different types and sizes of businesses, the sample was stratified based on two factors: industry and size. NAICS codes were grouped into five industry categories, and businesses were grouped into five size categories based on number of paid employees (see *Table 1*). Businesses with four or fewer employees and businesses with an unknown number of employees were not sampled. The intersection of industry and size created the basis for the stratified sampling design, which contained 25 total strata.

The sample counts for each grouping were based on the known population in each sample stratum using power allocation and were adjusted for expected differences in response rates. The power allocation procedure sampled businesses in each industry-size stratum according to the square root of its category's population size, based on a target of 2,103 businesses to be sampled. The response rate adjustment, based on CSR's experience with the 2022 survey administration, adjusted sample sizes upwards for the largest size categories, as these businesses had lower rates of response in the prior survey cycle.

Any business that met the stratification criteria and had a valid postal address was eligible. To further ensure the reliability and accuracy of the listings, a sample verification process was conducted by CSR prior to data collection. For all cases, CSR conducted internet searches and made phone calls to verify eligibility for the study and update contact information, including identifying who at the business was best suited to complete the survey.

The 2023 survey included a design experiment to assess the efficacy of using a \$2 bill as a noncontingent incentive among the study population. To that end, 1,050 of the 2,103 businesses in our sample were randomly selected to receive the \$2 bill incentive and the remaining 1,053 did not receive the incentive.

Additionally, CSR hosted a non-probability instance of the survey so that businesses not sampled as part of the probability study could still participate. CSR shared an anonymous, reusable link for the non-probability survey, which Northern Virginia Community College and the Chamber of Commerce shared with their contacts, including members of the Chamber of Commerce and other known businesses in Northern Virginia.

Response Rate: The survey launched on August 22, 2023, with the advance mailing of an informational letter. The letter was followed by the first questionnaire packet, sent approximately one week later on August 28, 2023. As noted, half of the businesses were selected to receive a \$2 unconditional incentive with the first questionnaire packet. Following the first questionnaire packet, businesses were sent a thank-you/reminder postcard, a second questionnaire packet, and a closeout postcard. Shortly after the mailing of the first packet, CSR sent an email invitation, with a direct link to the survey, for all cases for which an email was on file. These same businesses were sent additional email communications, including two reminder emails and one closeout email. Reminder calling was conducted between September 15 and October 20, 2023. Data collection closed on November 1, 2023.

Data Preparation: In total, 246 businesses from the probability sample completed the survey; of these surveys, 130 were completed via the web, while 116 were completed via mail. An additional 239 cases were out of sample/ineligible, 302 had bad addresses and could not be reached, and another 90 cases refused to participate. The remaining cases were categorized as some form of non-response. Following the American Association for Public Opinion Research's (AAPOR) Response Rate 4 (RR4) calculation, the overall response rate for the probability sample was 14.1%. A response rate cannot be calculated for the non-probability sample.

When comparing response rates via AAPOR's RR4 calculation, the sample group of businesses that did not receive an incentive had a response rate of 12.4% with 116 total responses, whereas the sampled businesses that received a \$2 bill responded at a rate of 15.8% with 130 total responses. This is a marginal increase in response by approximately 27%. Further, the difference in response rate between those businesses that received the \$2 incentive and those that did not was found to be statistically significant at the 95% confidence interval.

Data Preparation: CSR carried out the data preparation, which required the labeling, cleaning, and merging of paper and online data across both the main probability-based sample and the supplemental non-probability sample. Responses from the probability sample were de-duplicated across the two modes of data collection to ensure only a single response per business was recorded. In instances where a business completed the questionnaire more than once, the most complete and/or first submission was accepted and subsequent entries were dropped from the data file. A variable within the file indicates if the response is from the probability or non-probability sample. All data preparation was carried out using SPSS software (version 28).

Weighting: As noted, the probability sampling design for the study included stratification across size and industry as a means to increase variation across these characteristics within the final sample. Certain strata were sampled at a higher rate while other strata were sampled at a lower rate. In addition, each stratum responded at different rates. The probability and non-probability samples were combined for weighting purposes. The total weights combine base (stratification weights) and post-stratification weights. Each respondent received a weight inverse to its combined probability of (1) being selected into the sample and (2) responding; that is, for each stratum the total weight is simply the total stratum population divided by the total number of responses in the stratum. Analysis of weighted data was carried out using the *survey* and *survyr* R software packages.

Margin of Error: The margin of error for the probability-based responses is approximately ± 6.5 percent at the 95 percent level of confidence. This means that if the survey was repeated with 100 different random samples, the results of the survey would be within 6.5 percentage points of these findings 95 of those 100 times. Further, if no other sources of error were present, the results of the survey would be within 6.5 percentage points of the population mean (that is, the mean of all businesses in Northern Virginia) in 95 of those 100 iterations of the survey. Note that every question on the survey has its own margin of error. The overall calculation presented here is for a question answered by all respondents with a 50-50 response distribution. Margins of error would be larger for questions answered by smaller numbers of respondents or for subgroups in the data. Questions with a lopsided response pattern (e.g., an 80-20 response pattern) and answered by all respondents will have a smaller margin of error.

This overview has been edited and condensed from the full sampling and methodology report prepared by Kara Fitzgibbon, Sean Johnson, and Jacob Moore at the University of Virginia's Center for Survey Research. For the full report as well as a copy of the survey questionnaire, visit:

www.nvcc.edu/about/offices/strategic-insights/lmi/research-insights.html



Weldon Cooper Center
for Public Service
Center for Survey Research

ENDNOTES

- 1 The White House, “As the U.S. Consumer Goes, So Goes the U.S. Economy,” October 30, 2023, www.whitehouse.gov/cea/written-materials/2023/10/30/as-the-u-s-consumer-goes-so-goes-the-u-s-economy.
- 2 Ginger Chambless, “2024 economic outlook: 10 considerations for the U.S. economy,” J.P. Morgan, December 22, 2023, www.jpmorgan.com/insights/outlook/economic-outlook/economic-trends.
- 3 Northern Virginia Community College, *2022 Northern Virginia Workforce Index*, January 2023, novachamber.org/northern_virginia_workforce_index.
- 4 U.S. Census Bureau, “About the Data,” *Business Trends and Outlook Survey*, last modified December 7, 2023, www.census.gov/hfp/btos/about.
- 5 U.S. Census Bureau, “Top 25 MSA,” *Business Trends and Outlook Survey*, accessed December 14, 2023, www.census.gov/hfp/btos/data_downloads.
- 6 Northern Virginia Community College, *2022 Northern Virginia Workforce Index*, January 2023, novachamber.org/northern_virginia_workforce_index.
- 7 Northern Virginia Community College, *2022 Northern Virginia Workforce Index*, January 2023, novachamber.org/northern_virginia_workforce_index.
- 8 Arthak Adhikari and Tamara Mickle, “What is the unemployed people per job openings ratio? A 21-year case study into unemployment trends,” *U.S. Bureau of Labor Statistics* (June 2022), www.bls.gov/opub/btn/volume-11/what-is-the-unemployed-people-per-job-openings-ratio-a-21-year-case-study-into-unemployment-trends.htm#.
- 9 U.S. Bureau of Labor Statistics, “Number of unemployed persons per job opening by state, seasonally adjusted,” *Job Openings and Labor Turnover Survey*, accessed November 29, 2023, www.bls.gov/charts/state-job-openings-and-labor-turnover/unemployed-persons-per-job-opening-by-state.htm.
- 10 U.S. Bureau of Labor Statistics, “Unemployment by state, not seasonally adjusted,” *Local Area Unemployment Statistics*, accessed December 1, 2023, www.bls.gov/lau/data.htm; U.S. Bureau of Labor Statistics, “Employment status of the civilian noninstitutional population, not seasonally adjusted,” *Current Population Survey*, accessed November 29, 2023, www.bls.gov/cps/data.htm.
- 11 Northern Virginia Community College, *2022 Northern Virginia Workforce Index*, January 2023, novachamber.org/northern_virginia_workforce_index.
- 12 Northern Virginia Community College, *2022 Northern Virginia Workforce Index*, January 2023, novachamber.org/northern_virginia_workforce_index.
- 13 Lightcast™ Analyst, 2023.4 release.
- 14 Shana Lebowitz et al., “Here’s a list of major companies requiring employees to return to the office,” *Business Insider*, July 19, 2023, www.businessinsider.com/companies-making-workers-employees-return-to-office-rto-wfh-hybrid-2023-1.
- 15 Northern Virginia Community College, *2022 Northern Virginia Workforce Index*, January 2023, novachamber.org/northern_virginia_workforce_index.
- 16 Laura Vozzella, “Virginia Gov. Youngkin scraps degree requirement for most state jobs,” *The Washington Post*, May 30, 2023, www.washingtonpost.com/dc-md-va/2023/05/30/youngkin-college-degree-state-workforce.
- 17 Northern Virginia Community College, *2022 Northern Virginia Workforce Index*, January 2023, novachamber.org/northern_virginia_workforce_index.
- 18 Northern Virginia Community College, *2022 Northern Virginia Workforce Index*, January 2023, novachamber.org/northern_virginia_workforce_index.

ACKNOWLEDGEMENTS

This report was authored by Marisa Lemma, Research Analyst, Northern Virginia Community College. Report design by NOVA Graphics, Northern Virginia Community College.

The Northern Virginia Chamber of Commerce, Northern Virginia Chamber Foundation, and Northern Virginia Community College would first like to thank the business leaders who took valuable time out of their day to respond to this survey and contribute to our collective understanding of this region's unique workforce.

We would also like to express our deep appreciation for the University of Virginia's Center for Survey Research, which guided invaluable improvements to the survey methodology, administered probability-based data collection, and carried out data cleaning and preparation. This project would not have been possible without the hard work of Kara Fitzgibbon, Sean Johnson, Jacob Moore, Adina Kugler, Beverley Kerr, Donna Friedman, Danial Butt, Louise Bibb, Ulises Verde, Christine Schueckler, Tom Guterbock, Victoria Cardinale, and Spot Etal.

Finally, we are grateful to all our colleagues who not only made this project possible through their support but took time to review and provide vital feedback on the survey and this report.

For more information about this project, or to be involved in the future of the Northern Virginia Workforce Index, contact Carmen Sevilla, Director, Member Engagement at the Northern Virginia Chamber of Commerce: csevilla@novachamber.org.

For additional data and insights on labor market trends in Northern Virginia, visit www.nvcc.edu/lmi, or contact NOVA's labor market intelligence team at novalmi@nvcc.edu.



