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2023 Value of IT Certification | Candidate Report

An analysis of the motivations for and impacts of IT certification on individuals and organizations around the globe.

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In the face of daunting change, a steadfast commitment to growth remains.

As the world continues moving forward from the bleakest days of the COVID-19 pandemic, it does so in a landscape significantly changed.

Businesses have shifted working models. Hybrid/remote working is a new normal for many. Tech skills continue to grow in demand, with machine-integration initiatives expected to generate 97 million new jobs by 2025, and with them, massive employee reskilling efforts.[1]

At the same time, global talent shortages are at a 16-year high, and 75% of employers face skills gaps.[2] The three trends accelerated by the pandemic — hybrid and remote work, e-commerce, and the automation of work processes — are expected to persist to varying degrees after the pandemic.[3]

But the future is bright. The data from this year's Value of IT Certification candidate survey shows that **the IT community is ready to meet the challenge head-on**, with coursework and credentialing as the predominant tools to do so.

Read on for a deeper look at who is pursuing certifications, the motivations behind it, and the benefits they're seeing for their efforts.

[1]The World Economic Forum, *Future of Jobs Report*, October 2020
[2]ManpowerGroup, *2022 Global Talent Shortage*
[3]McKinsey Global Institute (MGI), *The Future of Work After COVID-19*, February 2021
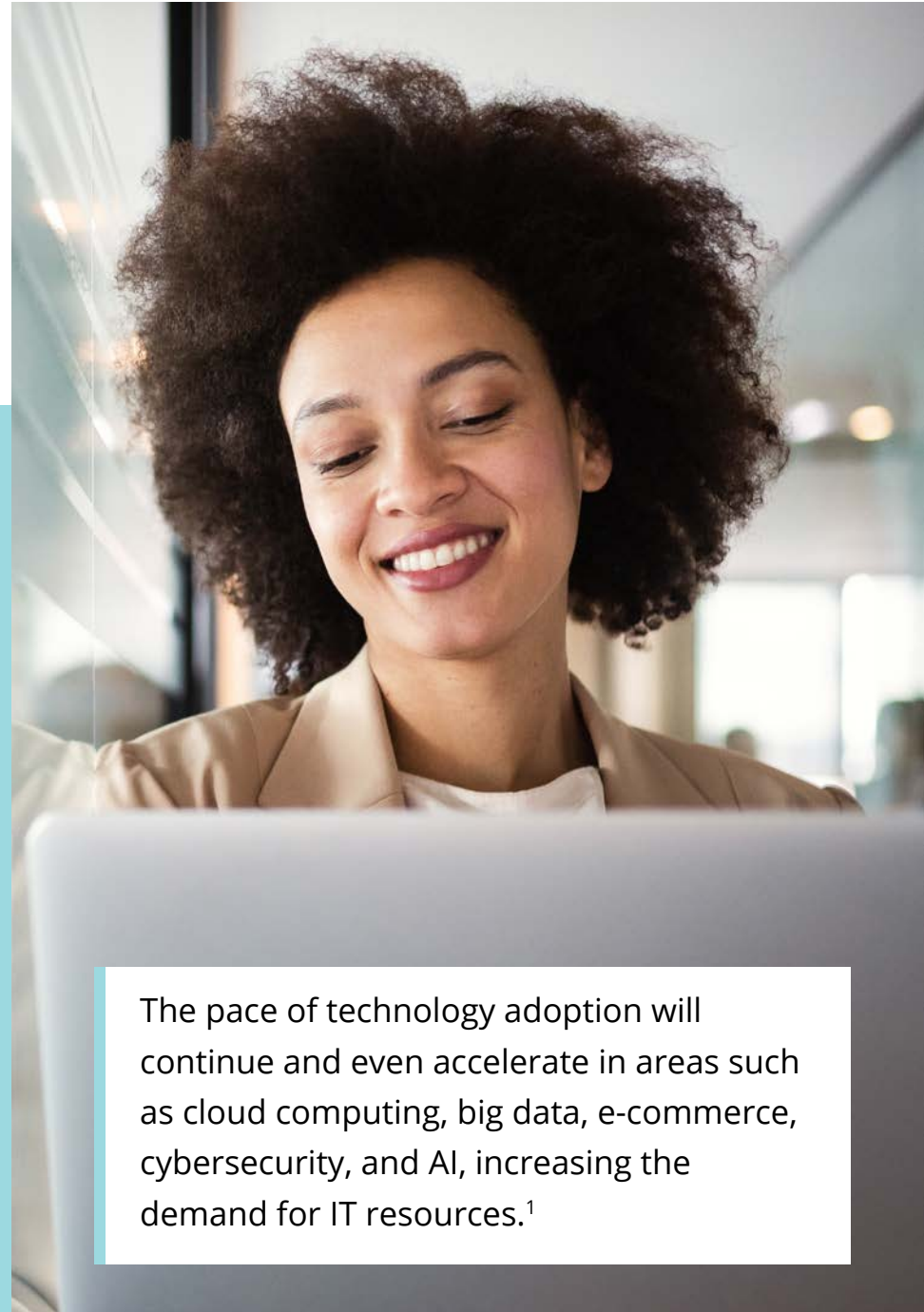
The pace of technology adoption will continue and even accelerate in areas such as cloud computing, big data, e-commerce, cybersecurity, and AI, increasing the demand for IT resources.[1]

Overview

The **2023 Value of IT Certification Candidate Report**, the eighth in an ongoing series, shares the perspectives and experiences of more than 21,000 professionals in 176 countries who prepared for and earned IT certifications with Pearson VUE amidst changing and challenging working conditions. It provides a view into why people seek certification, how they benefit, and how obtaining credentials impacts the bottom lines of their employers. This edition also reveals how certification dynamics have changed since our previous candidate-focused report, and what to expect over the next year. Survey respondents span the globe, representing Asia-Pacific; Europe and the UK, Middle East and Africa; Latin America; and North America regions. We're confident you'll find their perspectives and individual experiences compelling.

The perspectives and experiences of more than

21,000

PROFESSIONALS
who prepared for and earned IT certifications amidst changing and challenging working conditions

1. Candidates invest in certification to find better job opportunities — and many are rewarded for their efforts.

Certification enables the acquisition of new skills; qualifying candidates for better and more rewarding jobs.

- 37% received salary increases after earning their certifications, while an additional 36% still anticipate receiving one.

- 27% accepted job promotions.

35% EARNED A PAY INCREASE OF **20%** OR MORE.
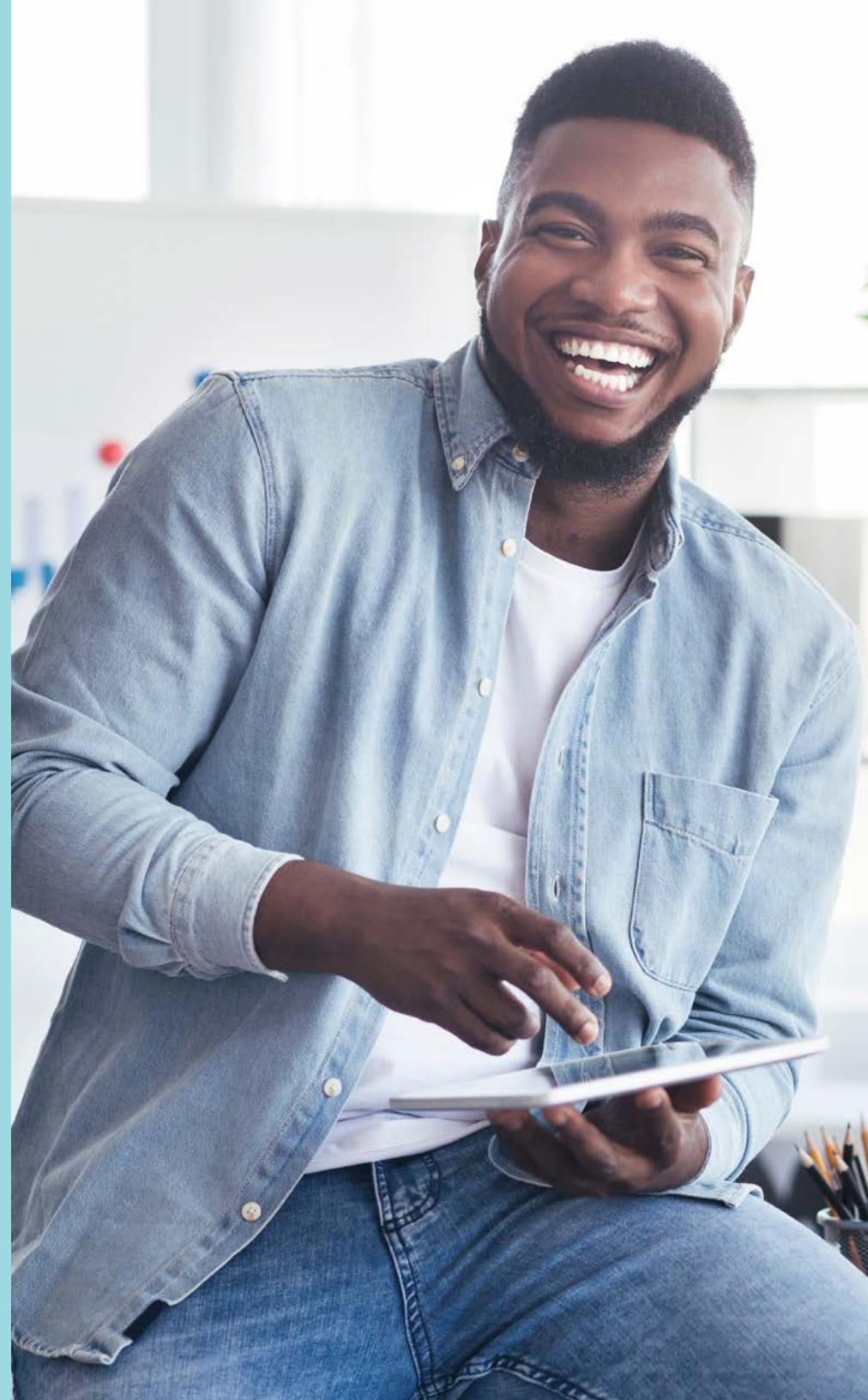
2. Credentialed employees are more empowered and contribute greater value.

Certification increases mobility for employees AND profitability for businesses.

- Certification not only enhances candidates' current work conditions, but also increases their ability to explore new job opportunities.

- Credentialed employees produce higher quality work and are more productive, which favorably impacts the bottom line.

92% OF CANDIDATES

are more confident in their abilities and **81%** have more confidence to explore new job opportunities.

3. Skills gaps will shrink faster, as younger people pursue certifications, and do so earlier in their learning journeys.

Younger generations are adopting certification at higher rates than their more mature counterparts.

- Gen Z and Millennials are more likely to consider IT certification as students compared to members of older generations, who typically wait until after beginning their careers.

- First-time certification seekers are getting younger. Proportions of first-time candidates 34 years and younger increased, while those 55 years and older decreased.

42% OF GEN Z

AND 15% OF MILLENNIALS

considered certification as students compared to 7% of Baby Boomers.

4. Once seen as disruptive and temporary, pandemic-driven technology demands have become the norm.

COVID-19 accelerated the arrival of the "future" workplace, where technology skills have become baseline requirements.

- IT certification has historically been viewed as a solution for "future-proofing" the workforce; enabling businesses to quickly respond to skills gaps by upskilling existing employees.

- As a result of COVID-19, the skills previously required to "future-proof" a business are now critical success factors.

65% OF CANDIDATES

AND **55%** OF THEIR EMPLOYERS

increased investments in IT skilling.
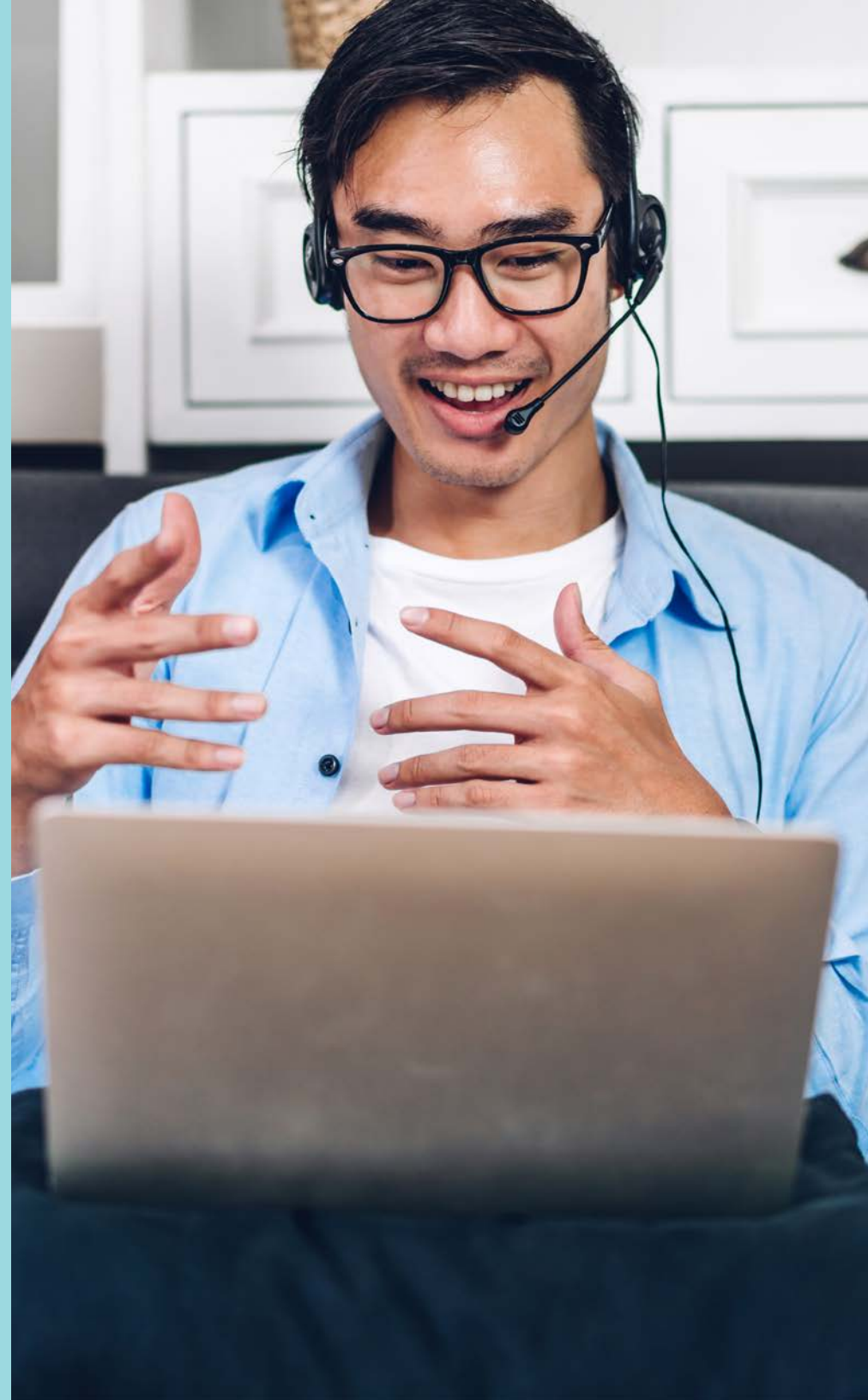
5. Convenience (and maybe COVID) influenced exam prep methods.

- Candidates preferred self-directed preparation methods over enrollment in training courses.

- Candidates relied more on online sources to prepare for and take exams.

86% OF RESPONDENTS

who enrolled in exam prep courses opted for online delivery of those courses.
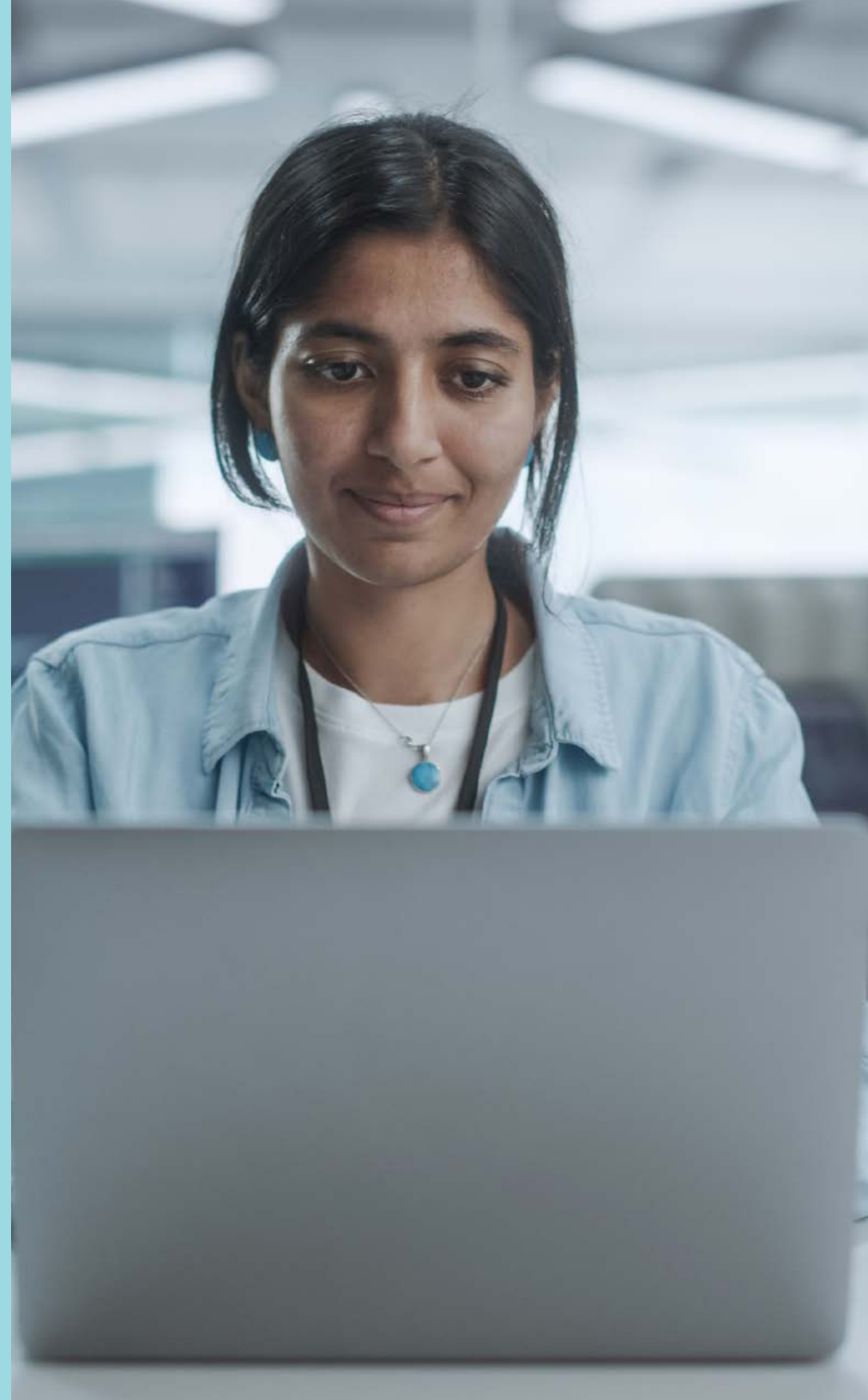
What's behind the pursuit of IT certifications?

THE NEED TO
RESKILL/UPSKILL **75%**

Once again, a desire to gain skills, knowledge, and competence to improve employment opportunities was the top reason most survey respondents pursue certifications. Interestingly, the top three motivations for certification were the same as those in the 2020 data, but the proportions of candidates mentioning them are notably higher this year. Gaining skills was the top motivation for 47% (Table 1), and one of several motivating factors for 75% (Table 2).

"A certification or recertification exam benefits both me and my employer by demonstrating to customers a continued dedication to improvement and innovation."

— Cisco certification holder, Bangladesh

What's behind the pursuit of IT certifications? (cont.)

The next most-mentioned reasons for certification were desires to elevate professional profiles and to advance or be promoted. 62% of candidates earned certifications to enhance their professional profiles and résumés, whereas 59% were seeking advancement (Table 2).

Changing jobs was the most important reason for earning certifications for 7% globally, down slightly from 2020, but the proportion of candidates transitioning into new jobs doubled in North America (15.7%) (Appendix 1).

TO ENHANCE
PROFESSIONAL
PROFILES

62%

TO ADVANCE
AND BE
PROMOTED

59%

TO MAKE
A JOB
CHANGE

25%

Table 1: MOST IMPORTANT REASON FOR CERTIFICATION	2020	2022
Desire to obtain skills, knowledge, or competence	44.3%	⬆ 47.3%
Desire to enhance my professional profile and résumé	14.4%	⬆ 15.4%
Desire to advance or be promoted in my current job	21.9%	21.6%
Desire to obtain a specific IT role	6.5%	5.2%
Desire to make a job change	7.6%	7.0%
Desire to find work (I was/am under or unemployed)	4.9%	3.2%

Table 2: ALL REASONS FOR CERTIFICATION	2020	2022
Desire to obtain skills, knowledge, or competence	72.5%	⬆ 74.8%
Desire to enhance my professional profile and résumé	56.8%	⬆ 61.5%
Desire to advance or be promoted in my current job	56.2%	⬆ 58.8%
Desire to obtain a specific IT role	32.4%	⬇ 27.3%
Desire to make a job change	26.2%	⬇ 24.8%
Need to fulfill a work or school requirement	19.7%	20.4%
Desire to find work (I was/am under or unemployed)	13.4%	⬇ 10.0%

*Arrows indicate a notable increase or decrease since the 2021 candidate-focused report.

Ongoing pandemic impacts

Three of every four candidates told us they experienced workplace changes because of the COVID-19 pandemic. For most, the changes were not positive and all of them required some element of reskilling or upskilling.

a) 48% took on heavier workloads
b) 46% took on new responsibilities in the same job
c) 24% found jobs in a different company or industry
d) 12% lost their jobs or were demoted

In response to these changes, 65% of candidates increased their investments in IT skilling.

a) 59% increased investments in IT skills training
b) 60% increased investments in IT certification

Did you experience any of the following as a result of the COVID-19 pandemic?	Global
Job loss or demotion	12%
Increased workload	48%
Decreased work morale	37%
Move from on-site to remote work three days a week or more	59%
New responsibility in the same job role or new role in the organization	46%
New job role or job in a different industry	24%
Need to delay or cancel academic studies	18%
Increased employability and new job opportunities	42%
Increased investment in IT skills training	59%
Increased investment in IT certification	60%

Ongoing pandemic impacts (cont.)

It's likely the pandemic continues to influence how people sit for exams as well. While we're beginning to see a return to test center-based exam appointments, it's clear online proctoring is here to stay.

Where was the certification exam administered?	2020	2022
School, college, or university	9%	8%
Event or conference	3%	2%
Commercial training center	34%	25%
Place of employment	8%	8%
Government agency or not-for-profit organization	1%	1%
Military installation	1%	1%
Remotely proctored by OnVUE	44%	⬆56%

Benefits for test-takers

From pay raises and job promotions to productivity gains and personal satisfaction, survey respondents benefited in a variety of ways. Of those who set a specific goal for certification, **80% successfully met those goals** and reaped direct and intrinsic benefits (Appendix 2).

Financial/monetary benefit of certification

Unsurprisingly, for many respondents, earning a salary increase was a key goal in the pursuit of certification. And more were successful than in our previous candidate-focused analysis.

37% of respondents received a salary increase after earning their credentials — a significantly higher number than the 28% who reported salary increases in our 2020 data set.

Did you receive a salary or wage increase?

	Yes	Not yet but still hoping to	No
2020	28%	42%	30%
2022	37%	36%	27%

■ 2020 ■ 2022
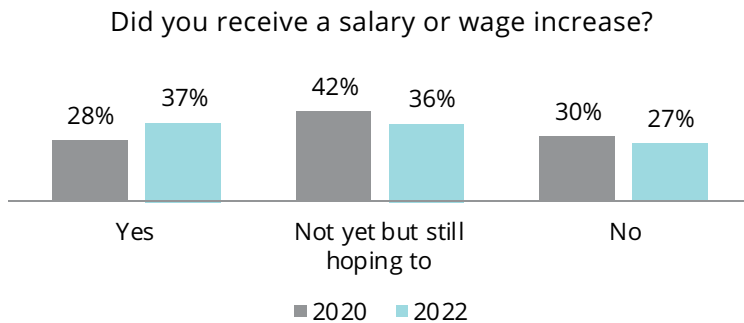
"My salary increased more than 51% and I was able to get promoted due to the certifications I took this year."

– Microsoft certification holder, India

Financial/monetary benefit of certification (cont.)

Of those who earned a pay increase, **58%** **were rewarded within three months** of receiving their certifications. That number jumped to **83%** **within six months**.

How long after earning your certification did you receive your pay increase?

Immediately	Within 1 month	Within 3 months	Within 6 months	Within 1 year	More than a year after certification
12%	15%	31%	25%	14%	4%
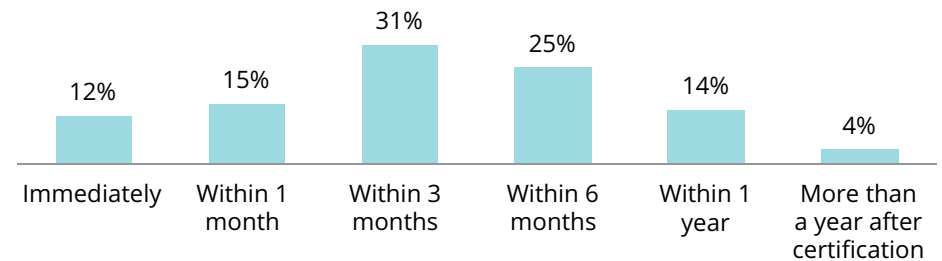
The amount of pay raises has increased steadily since 2018. This year, **35%** **received pay increases of more than 20%**, compared to just 20% in 2018 and 28% in 2020.

By what percent did your salary/wage increase?

	increased salary by 50%+	31-50%	21-30%	11-20%	6-10%	up to 5%
2018	4%	6%	10%	17%	24%	26%
2020	7%	9%	13%	23%	27%	22%
2022	8%	11%	16%	24%	24%	16%

■ 2018 ■ 2020 ■ 2022
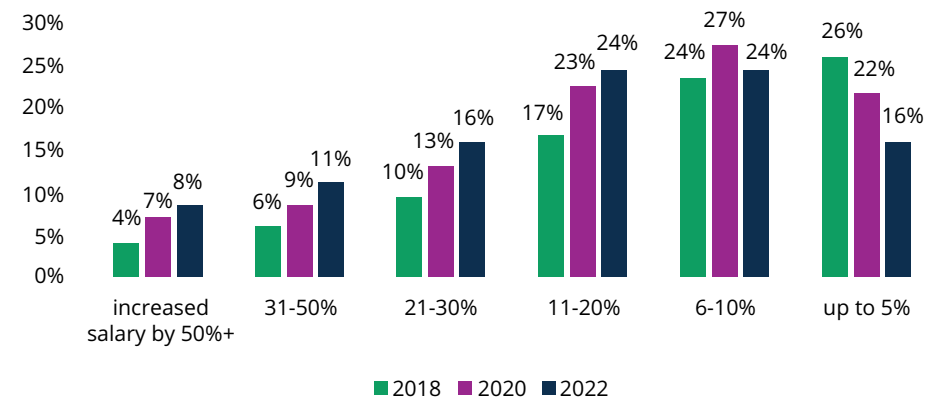
Other extrinsic (tangible) benefits

Besides more pay, after earning certification a growing number of respondents also received job promotions or new jobs, and many were accepted into programs they had applied to join.

- 27% received job promotions
- 25% were able to land a new job in the same industry thanks to earning new certifications
- 14% found a new job in a different industry or company
- 11% were accepted into the programs they applied for

Chart: Job promotion 21% (2020), 27% (2022); New job in same industry 23% (2020), 25% (2022); New job in different industry 13% (2020), 14% (2022); Program acceptance 10% (2020), 11% (2022)

■ 2020 ■ 2022
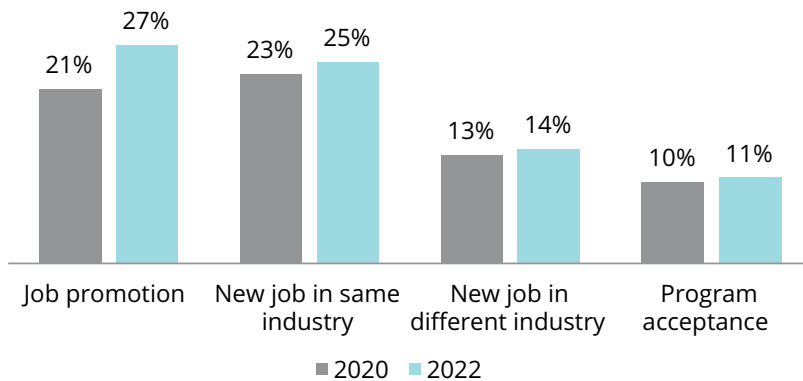
Benefits around the globe

There were some notable regional differences in the positive outcomes respondents experienced.
- Respondents in India had the highest success rates in obtaining new jobs in similar industries, as well as acceptance into programs.
- Latin American respondents received the most job promotions, and Asia-Pacific respondents were most likely to be appointed a new job in a different industry.
- Respondents from Japan were the least likely to report that they had experienced the benefit at the time of being surveyed.

	Global	Asia-Pacific	UK and Europe	India	Japan	Latin America	Middle East and Africa	North America
Job promotion	27%	30%	26%	35%	⬇10%	⬆ 37%	31%	20%
New job in same industry	25%	33%	21%	⬆37%	⬇ 5%	25%	30%	22%
New job in different industry	14%	⬆ 20%	11%	20%	⬇ 3%	14%	16%	15%
Program acceptance	11%	15%	6%	⬆19%	⬇ 4%	10%	13%	8%

"I received a great opportunity to work with a startup company. It's a dream job for me. And at the same time, being certified has been key in confidently promoting the quality of my work."

– Meta (Facebook) certification holder, Mexico

Intrinsic (personal) benefits

In addition to the tangible benefits noted above, most respondents linked certification with intrinsic benefits such as feeling more confidence and determination, enjoying greater respect from peers, and experiencing an increase in both job satisfaction and autonomy.

- 92% feel more confident in their abilities after earning certifications
- 84% are more determined to succeed professionally
- 79% feel more respected by their work peers
- 78% are more satisfied with their jobs
- 74% have greater work autonomy and independence

"After passing the certification exam, it was a game changer and a real confidence booster!"

– Tableau certification holder, Australia

Did you experience any of these additional benefits?

	Global	Asia-Pacific	UK and Europe	India	Japan	Latin America	Middle East and Africa	North America
Greater confidence in abilities	92%	92%	89%	↑97%	↓87%	95%	96%	89%
Greater determination to succeed professionally	84%	87%	78%	↑94%	↓71%	90%	94%	80%
Greater interest and confidence in exploring new job opportunities	81%	86%	74%	↑93%	↓53%	88%	91%	80%
Increased respect from my work peers	79%	80%	72%	↑90%	↓69%	84%	88%	72%
Greater satisfaction with my current job	78%	82%	73%	87%	71%	↑88%	83%	↓66%
Greater work autonomy and independence	74%	78%	66%	↑87%	↓63%	80%	85%	62%

Benefits for employers

As we've seen in previous surveys, the benefits of IT certification go beyond those who earn them, positively impacting their employers as well. So much so that employers are committing to upskilling their existing teams. In fact, according to Global Knowledge's *2021 IT Skills and Salary Report,* 56% of IT decision-makers plan to address skills gaps by training existing staff.[4] Our respondents provided valuable input into how that's unfolding.

For the direct employer perspective, see the insights provided in our *2021 Value of IT Certification Employer Report*.

Benefits for employers (cont.)

Employers will address IT skills gaps by increasing their commitment to training and supporting their existing staff. Many already are — 59% of respondents' employers invested more in IT skills training in the 12-month time period considered by the survey.

59% of respondents said their employers increased investments in IT skills training. The largest investments were seen in India, where 78% of those surveyed said their companies upped their investment.

Employers who increased investments in employee IT skilling

Global	Asia-Pacific	UK and Europe	India	Japan	Latin America	Middle East and Africa	North America
59%	62%	51%	78%	47%	65%	64%	45%
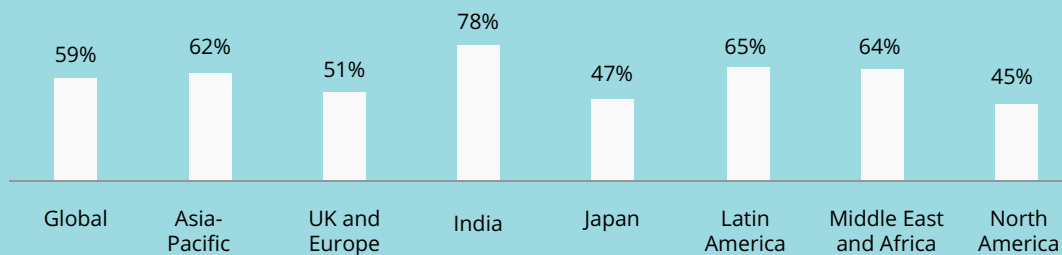
Benefits for employers (cont.)

53% of employers covered the training costs for exam preparation (Appendix 3).

55% of respondents' employers also covered exam fees, a significant increase from the 47% reported in 2020.

Who covered the costs for this certification?

	2020	2022
I did	35%	26%
My employer	47%	55%
School/college/university	3%	3%
Government program/grant	2%	2%
Third-party not-for-profit org.	3%	3%
I do not know	1%	1%
There was no charge	8%	8%
Prefer not to answer	3%	3%

Investing in IT certification impacts the bottom line for businesses.

The **ROI** per credentialed employee is estimated to be as high as

$30,000.

64% of IT decision makers estimate that each credentialed IT employee adds

$10,000

or more in the **additional value** of their contributions compared to their non-certified counterparts.[4]

Benefits for employers (cont.)

Certification increases the value of employee work contributions.

81% of candidates produce higher quality work.

72% are more efficient.

72% are more productive.

77% are better able to innovate after earning certifications.

Other benefits include a greater ability to mentor and support co-workers **(82%)** and increased work autonomy and independence **(74%)**.

Employer-facing candidate-reported benefits	
Increased quality and value of work contributions	81%
Greater work autonomy and independence	74%
Increased efficiency (I produce more in less time)	72%
Increased productivity (I produce more overall)	72%
Greater ability to mentor and support my co-workers	82%
Able to perform a task or fill a role that I was not able to before	74%
Increased ability to innovate and enhance work processes and outcomes	77%

Benefits for employers (cont.)

Certification strengthens confidence when considering new job opportunities.

81% of respondents said that earning certifications made them feel more confident to explore new job opportunities (Appendix 6).

Although some employers see this as a threat, most know what value certification brings to the workplace.[5]

Employers who invest in training and certification of their IT staff are more likely to retain them. Candidates are significantly less likely to feel interested in exploring new jobs when their employers covered their training and certification costs.

Interest in exploring new job opportunities, by investor (self or employer)

Employer-paid training	Self-paid training	Employer-paid certification	Self-paid certification
75%	83%	77%	88%

"*I was able to go into interviews and look for career advancement knowing I was qualified and could clearly demonstrate value.*"

– (ISC)[2] certification holder, USA

Certification dynamics: specializations

The five most common certification specialty areas were cloud computing, cybersecurity, networking and wireless, security, and virtualization.

Cloud computing was the most sought-out specialty area, comprising 16% of all exam specialties. In India, cloud computing certifications were 27%.

Cybersecurity, along with networking and wireless certifications, comprised just under 13% of all specialties and were the second-most popular specialty areas globally. In North America, however, cybersecurity was the leading specialization and represented 25% of certifications obtained.

What specialty did this certification cover?	Global	Asia-Pacific	UK and Europe	India	Japan	Latin America	Middle East and Africa	North America
Cloud Computing (IaaS, PaaS and SaaS)	16.1%	15.0%	13.5%	27.3%	21.5%	12.8%	12.0%	10.3%
Cybersecurity	12.8%	14.5%	9.9%	5.2%	11.4%	11.9%	12.6%	25.4%
Networking and Wireless	12.8%	15.5%	11.4%	9.6%	9.3%	13.0%	21.1%	11.2%
Security	9.8%	9.4%	9.9%	6.2%	7.1%	8.9%	13.0%	14.9%
Other	8.0%	6.6%	6.4%	10.1%	6.6%	10.9%	6.9%	8.7%
Virtualization	5.5%	6.8%	7.3%	4.4%	6.5%	5.0%	4.8%	2.9%
Application (Software) Development	4.1%	3.1%	4.9%	7.9%	5.4%	3.5%	2.2%	1.4%
CRM and ERP	3.9%	3.1%	7.3%	6.3%	1.4%	3.1%	3.5%	1.6%
Analytics, Big Data and Data Warehouse	3.4%	3.3%	3.8%	4.5%	2.8%	3.8%	1.9%	3.6%
Servers	2.8%	3.0%	2.6%	0.6%	6.1%	2.9%	2.4%	1.8%
Storage	2.5%	3.1%	2.1%	2.3%	2.6%	2.8%	3.3%	1.3%
Enterprise Architecture	2.2%	1.9%	3.4%	1.8%	0.5%	4.1%	2.4%	1.1%
Business Applications and Desktop Productivity	2.1%	1.8%	3.1%	1.5%	4.2%	1.3%	1.7%	0.9%
Help Desk	1.6%	0.8%	1.6%	0.1%	0.6%	1.1%	2.0%	5.7%

Certification dynamics: specializations (cont.)

What specialty did this certification cover?	Global	Asia-Pacific	UK and Europe	India	Japan	Latin America	Middle East and Africa	North America
Operating Systems	1.4%	1.1%	2.1%	0.1%	1.6%	1.2%	2.0%	1.6%
Business Skills	1.3%	1.7%	1.5%	0.9%	1.4%	1.9%	0.9%	1.0%
DevOps	1.3%	1.2%	1.6%	2.4%	0.5%	1.5%	0.8%	0.8%
Artificial Intelligence/Machine Learning	1.1%	1.3%	1.1%	1.7%	1.0%	1.2%	1.0%	0.5%
Collaboration, Telephony and Video/Web Conferencing	1.0%	0.6%	1.3%	0.5%	0.4%	2.1%	1.0%	0.8%
Database Administration and Development	0.9%	0.9%	1.0%	0.7%	1.7%	0.6%	0.4%	0.6%
e-Commerce/e-Business	0.8%	1.2%	1.2%	0.5%	0.1%	2.3%	0.3%	0.3%
IoT/Cloud Convergence	0.8%	0.9%	0.4%	1.4%	0.7%	0.9%	0.9%	0.3%
Project Management, Agile and/or Scrum	0.7%	0.5%	0.3%	0.7%	1.4%	0.3%	0.3%	1.2%
Web Development	0.6%	0.4%	0.6%	1.1%	0.8%	0.4%	0.5%	0.2%
Leadership and Management	0.5%	0.6%	0.2%	0.2%	0.5%	0.5%	0.7%	0.7%
Voice Engineering	0.5%	0.4%	0.5%	0.3%	0.4%	0.8%	0.7%	0.5%
Middleware	0.4%	0.1%	0.1%	0.6%	1.4%	0.1%	0.3%	0.0%
Mobile	0.3%	0.4%	0.4%	0.5%	0.1%	0.3%	0.2%	0.1%
Game Development	0.2%	0.5%	0.1%	0.0%	0.3%	0.0%	0.0%	0.2%
Open Source	0.2%	0.0%	0.2%	0.1%	0.7%	0.3%	0.1%	0.2%
Quality Assurance	0.2%	0.0%	0.0%	0.2%	0.7%	0.1%	0.1%	0.1%
3D Modeling/CAD	0.1%	0.0%	0.0%	0.0%	0.2%	0.0%	0.2%	0.1%
Extended Reality (VR, AR, MR)	0.1%	0.1%	0.1%	0.0%	0.0%	0.2%	0.1%	0.0%
Multimedia Production and Graphic Design	0.1%	0.1%	0.1%	0.0%	0.1%	0.1%	0.0%	0.0%

Certification dynamics:
Initial consideration (aka The Gen Z effect)

Among the most interesting trends revealed in this year's report is the time at which learners begin considering the pursuit of certifications.

IT certification has penetrated the academic market and students are getting an earlier start on their skilling journeys.

Globally, 73% of respondents first considered certification after starting their careers (i.e., professionals). 17% considered certification during their schooling years and 11% first considered it when seeking jobs.

The proportions of students considering certification is 24% in North America and 27% in the Middle East and Africa.
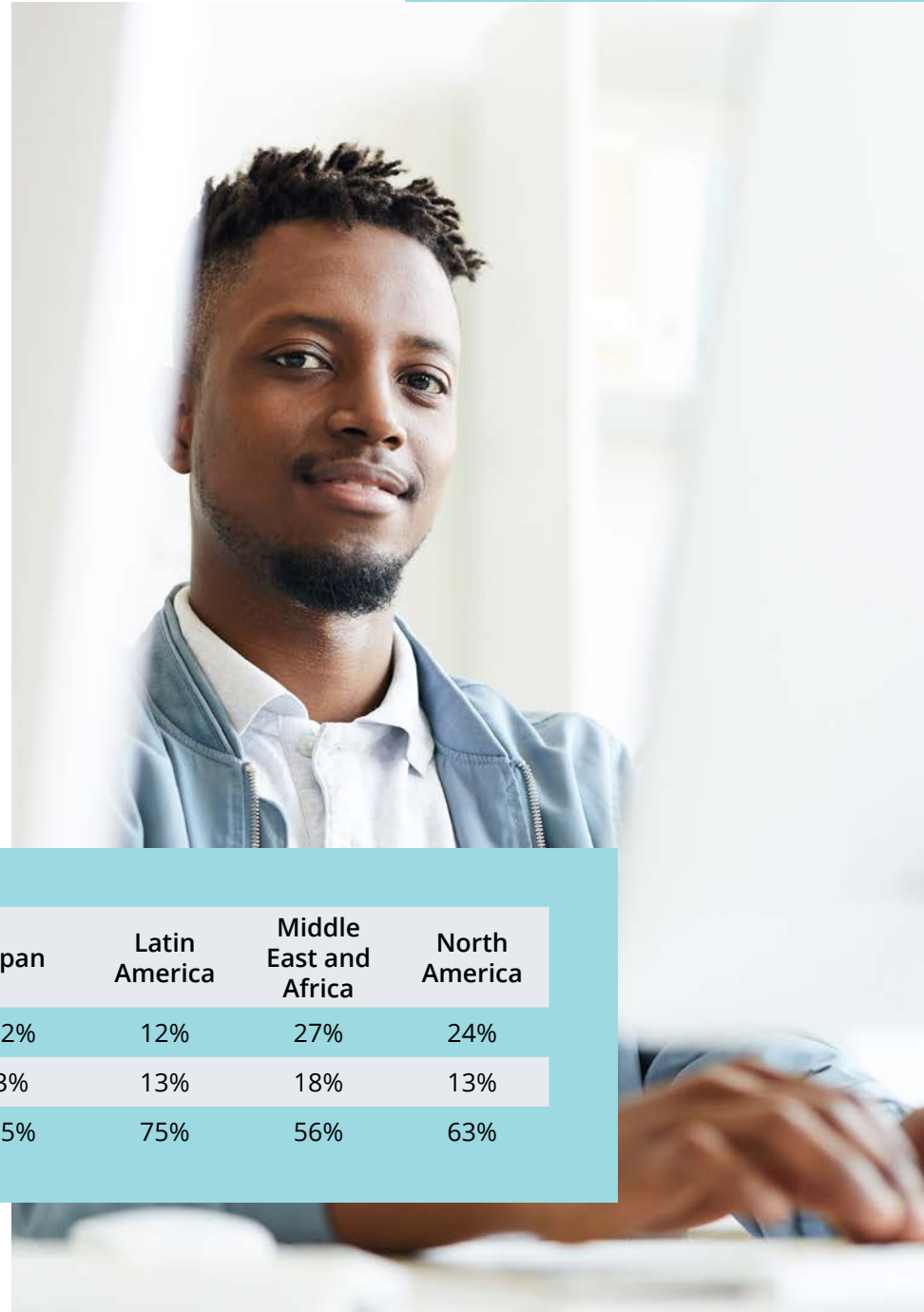
	Global	Asia-Pacific	UK and Europe	India	Japan	Latin America	Middle East and Africa	North America
Students	17%	18%	15%	13%	12%	12%	27%	24%
Job seekers	11%	12%	11%	6%	3%	13%	18%	13%
Professionals	73%	70%	74%	81%	85%	75%	56%	63%

Certification dynamics:
Initial consideration (cont.)

Of those who first considered certification as students, 5% were in high school, 4% were enrolled in a two-year college or vocational school, and 7% were attending a four-year college or university.

30% of professionals consider certification within two years after starting careers.

First consideration

	Global
High school/secondary school (grades 9-12)	5%
Post-secondary school (2-year college, vocational or technical school)	4%
Post-secondary school (4-year college)	7%
After completing schooling or training	9%
Upon losing employment	2%
0-2 years after starting a first job or career	30%
2-8 years after starting a job or career	24%
8-15 years after starting a job or career	10%
15+ years or more after starting a job or career	10%

Certification dynamics: Initial consideration (cont.)

The earlier certification is considered, the higher the number of certifications that are acquired.

Candidates who first considered certification in high school have the highest average of lifetime certifications, an impressive 9.2.

When did you first decide to pursue IT certification?								
High school/ secondary school (grades 9-11)	Post-secondary school (2-year college, vocational or technical school)	Post-secondary school (4-year college)	After completing schooling or training	Upon losing employment	0-2 years after starting a first job or career	2-8 years after starting a job or career	8-15 years after starting a job or career	15 years or more after starting a job or career
9.2	8.7	8.1	8.5	7.7	8.1	7.1	6.9	8.1

(Row label: Lifetime certifications)

Higher proportions of younger generations consider certification as students when compared to older generations.

14% of Gen Z considered certification in high school, compared to only 2% of Baby Boomers.

First consideration by generation

Legend: ■ Gen Z ■ Millenials ■ Gen X ■ Baby Boomers

	Gen Z	Millenials	Gen X	Baby Boomers
Year 9-12	14%	5%	3%	2%
Post-Secondary/2 YR. College	10%	4%	3%	3%
Post-Secondary/4 YR. College	19%	7%	4%	2%
After graduating	11%	9%	7%	4%
Upon losing employment	1%	2%	3%	5%
Within 0-2 years of tenure	43%	31%	23%	14%
Within 2-8 years of tenure	4%	28%	20%	22%
Within 8-15 years of tenure	0%	11%	11%	9%
15 years or more of tenure	0%	5%	28%	39%
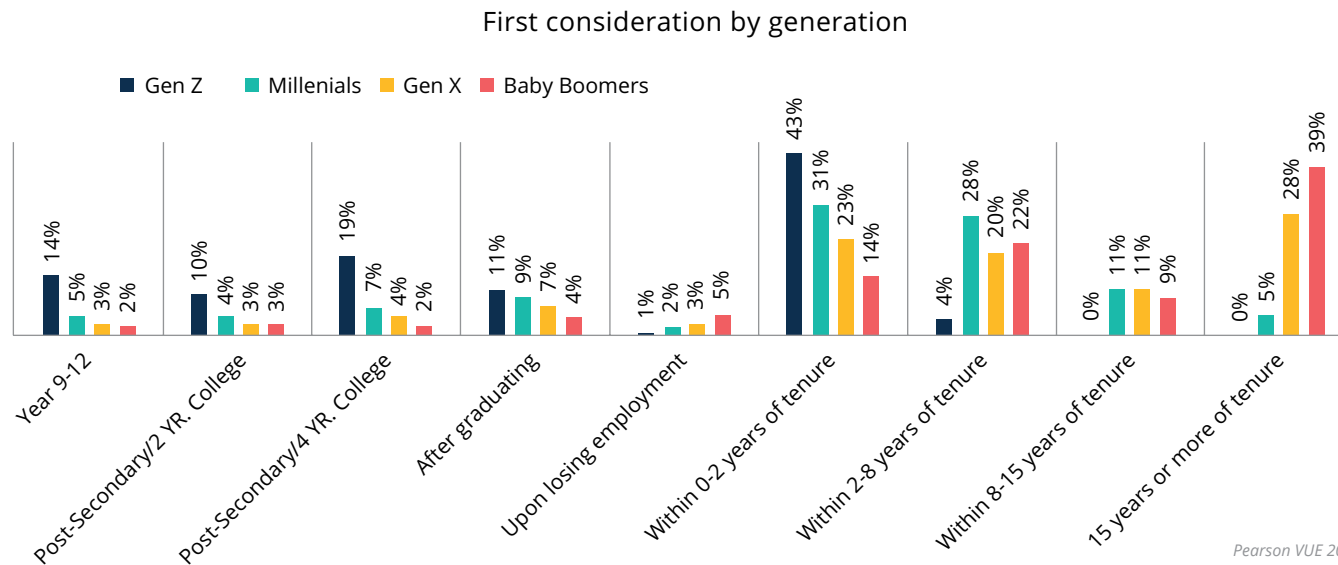
Certification dynamics:
Initial consideration (cont.)

More than any other generational cohort, members of Gen Z have the highest proportion looking for work and hoping to obtain an IT role. Millennials are most likely to be seeking job promotions and job changes. Gen Xers are least likely to be looking for work but are looking for job changes. Baby Boomers are least likely to be seeking job advancement and most likely to obtain certifications to fill a requirement.

Note: Given their young age, members of Generation Z are not included in the data for 8-15 years of tenure or 15+ years of tenure.

What was your most important reason for pursuing this certification?

	Gen Z	Millennials	Gen X	Baby Boomers
Job promotion	54%	↑**64%**	47%	↓**34%**
Job change	18%	↑**27%**	21%	15%
Find work	↑**19%**	9%	6%	9%
IT role	↑**30%**	28%	23%	↓**19%**
Skills, knowledge, competence	76%	75%	75%	71%
Enhance résumé	63%	63%	56%	57%
College/ program application	10%	5%	3%	3%
Work or school requirement	21%	18%	↑**26%**	↑**33%**

Certification dynamics:
First-timers versus multiple certification earners

First-time certification earners were more often female, between the ages of 18 and 34, enrolled as a student part or full-time, and in an entry-level position.
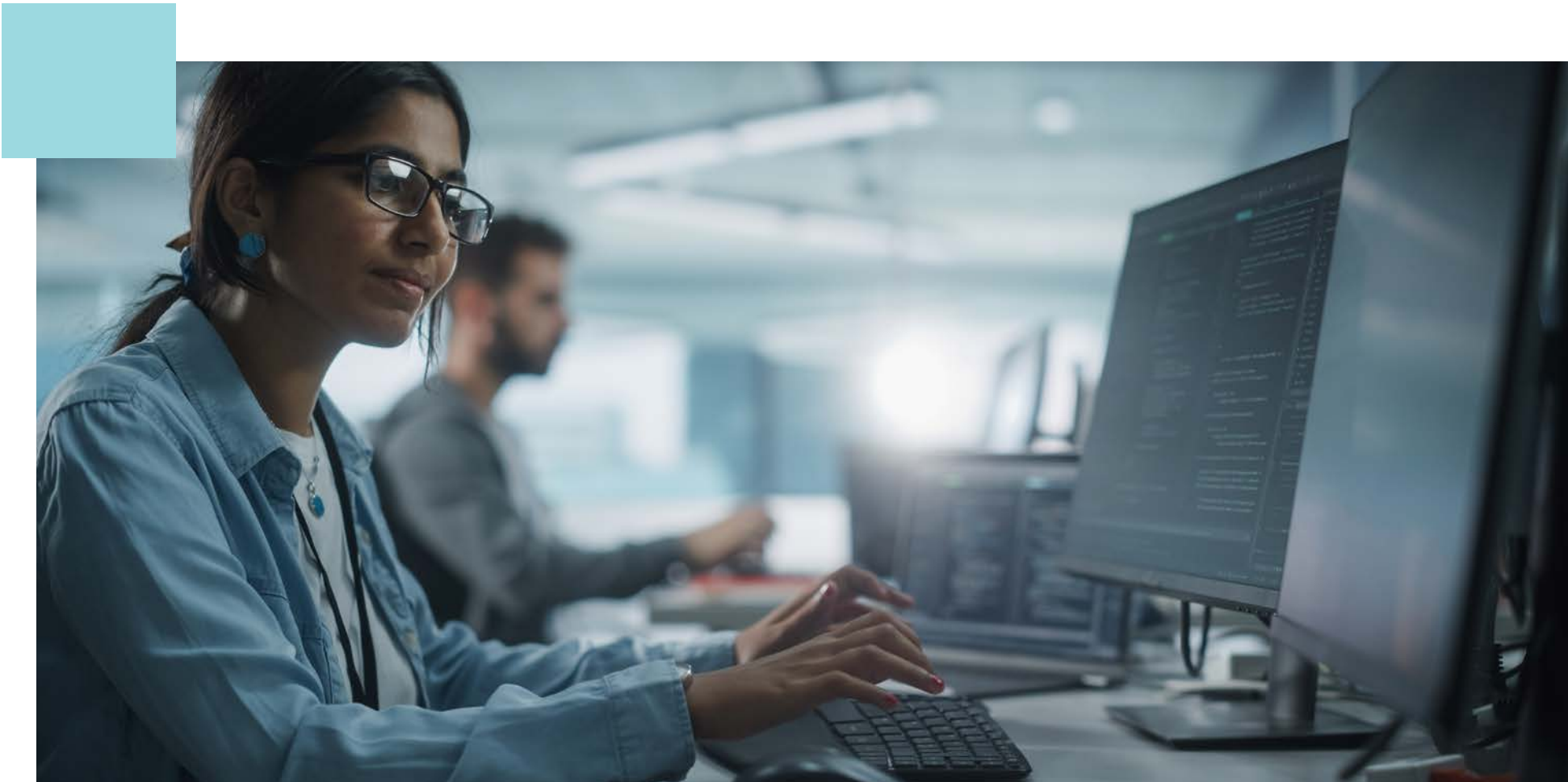
Certification dynamics: First-timers (cont.)

32% of candidates globally were first-time certification seekers. **Almost half of the certification earners in India were first-timers**.

Is this your first IT certification?

	Global	Asia-Pacific	UK and Europe	India	Japan	Latin America	Middle East and Africa	North America
Yes	32%	32%	26%	46%	21%	34%	33%	35%
No	68%	68%	74%	54%	79%	66%	67%	65%

27% of first-time certification earners were women, which is significantly higher than the 14% of women with more than one certification. **Representation of women versus men increased by 22% in 2022. The proportion of female candidates increased from 15% in 2020 to 18% this year.**

What is your gender?

	First-timers	Multiple certification holders
Male	70%	↑ 83%
Female	↑ 27%	14%
Prefer not to say	3%	3%

What is your preferred gender?

	2020	2022
Males	83%	79%
Females	15%	18%
Prefer not to say	3%	3%

See Appendix for responses to all gender options.

Certification dynamics:
First-timers (cont.)

Women were less likely than men to earn credentials in pursuit of a job promotion and more likely to be seeking employment. In the Middle East and Africa, 11% of women earned credentials to find work (Appendix 5).

Men were more likely than women to be interested in landing an IT position, and the proportion of men seeking IT positions was 8% in Asia-Pacific and 7% in the Middle East and Africa.

What was your most important reason for pursuing this certification?

	Male	Female
Job promotion	22%	20%
Job change	7%	7%
Find work	3%	4%
IT role	5%	4%
Skills, knowledge, competence	47%	48%
Enhance résumé	15%	16%
College/program application	0%	0%

Certification dynamics:
First-timers (cont.)

First-time certification earners are more likely to be 34 years old or younger, compared to multiple certification holders.

What is your age?

Age	First-time certification holders	Multiple certification holders
Under 18	0.7%	0.1%
18-24	23%	5%
25-34	45%	34%
35-44	22%	36%
45-54	8%	19%
55-64	2%	5%
65+	0.2%	0.3%

■ First-time certification holders   ■ Multiple certification holders
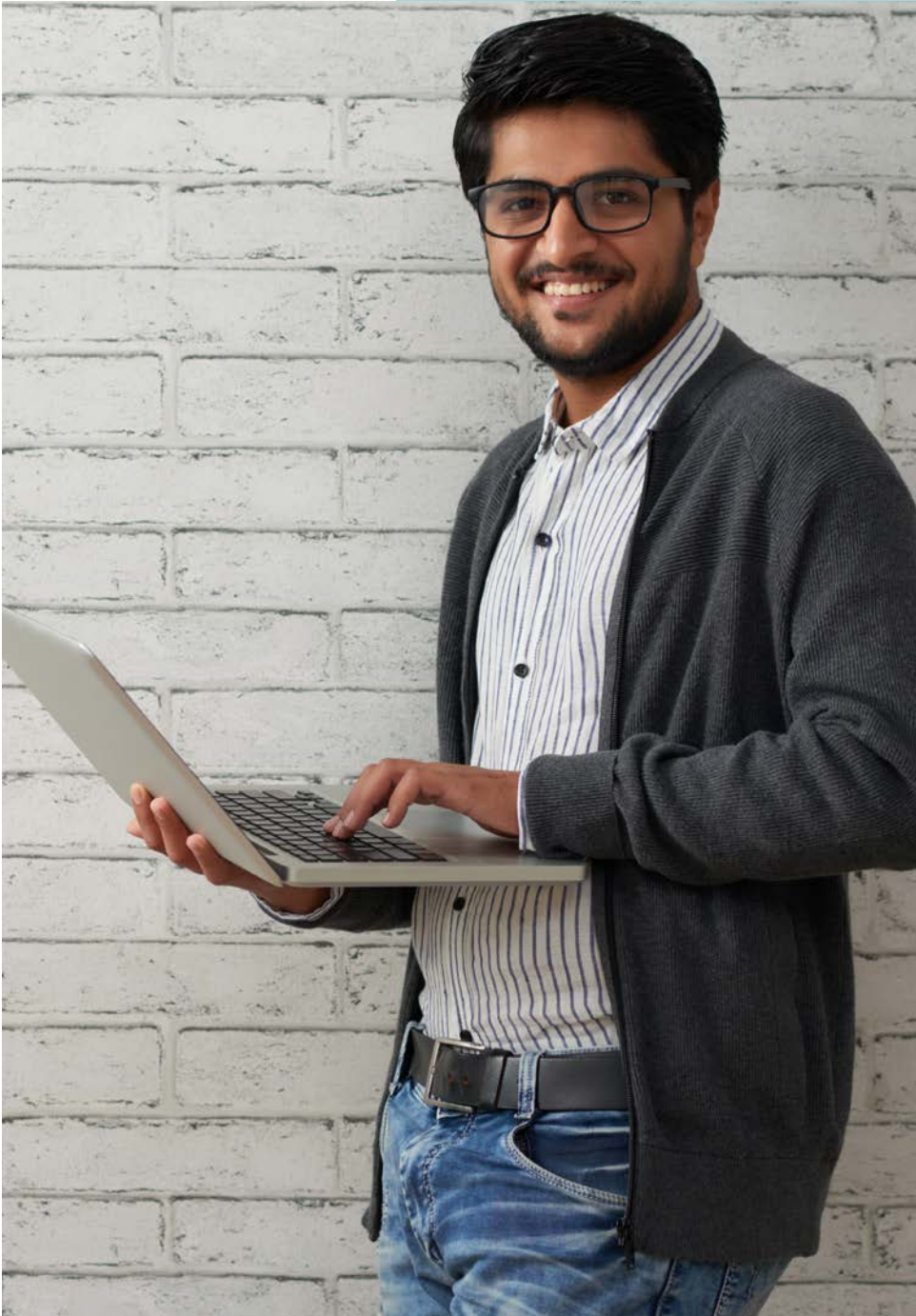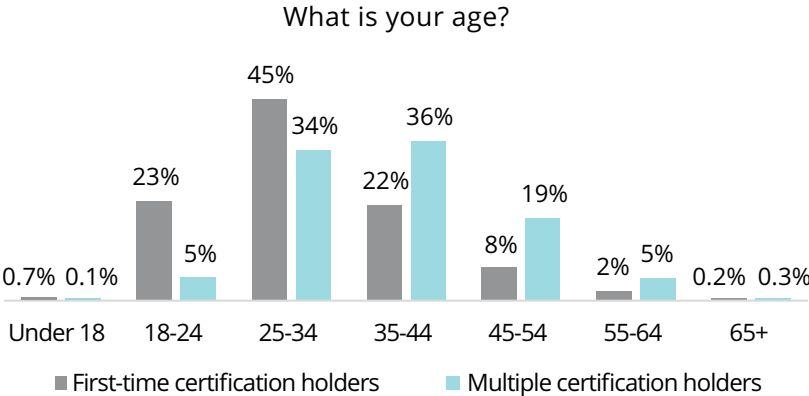
Certification dynamics:
First-timers (cont.)

25% of first-time certification earners were either part or full-time students.

Were you enrolled as a student when you earned this IT certification?

	First-timers	Multiple certification holders
No	75%	90%
Yes, I was/am a full-time student	16%	5%
Yes, I was/am a part-time student	9%	6%

26% of first-time certification earners filled entry-level positions.

What best describes your career level?

	First-timers	Multiple certification holders
Not currently employed or a student	8%	2%
Entry-level (0-2 years avg.)	26%	6%
Professional or intermediate level (2-8 years avg.)	34%	26%
Mid-level (8-15 years avg.)	17%	31%
Senior level (15+ years avg.)	11%	33%
Not applicable: my current job is not a career	3%	1%
Prefer not to say	3%	2%

Certification dynamics:
First-timers (cont.)

First-time certification earners were more often seeking a job change or hoping to find employment, compared to those with more than one certification.

Reasons for certification: first-time candidate versus repeating candidates

	First-timers	Multiple certification holders
To advance or be promoted in my current job	21%	22%
To make a job change	10%	6%
To find work (I was/am under or unemployed)	6%	2%
To obtain a specific IT role	5%	5%
To obtain skills, knowledge, or competence	42%	49%
To enhance my professional profile and résumé	14%	16%
To supplement my application for program or college admittance	1%	0%

Preparation methods

When it comes to exam preparation, the survey data shows a clear trend: candidates are taking more ownership for their prep, both in terms of location and method.

Candidates opted for self-directed preparation methods over enrollment in training courses.

Overall, enrollment in commercial training center courses dropped dramatically, from 28% to 14%. Regional data reflects that participation in employer-sponsored training courses decreased in Japan and North America (Appendix 6).

Preparation method used

	2020	2022
Commercial training center course	28%	14%
Employer-sponsored course	25%	25%
Academic or career development course	15%	16%
Self-directed materials (free)	53%	54%
Self-directed materials (purchased)	32%	28%
Textbooks or subscriptions	16%	28%
Practice tests	37%	46%
Practice lab	25%	29%

Preparation methods (cont.)

Additionally, candidates relied more on online sources to prepare for and take exams.

Candidates preferred online over in-person coursework, either in real-time or self-paced. **86% of those who enrolled in courses opted for online delivery formats. This preference was highest in Latin America (92%) and Japan (90%).**

Course delivery method

	Global	Asia-Pacific	UK and Europe	India	Japan	Latin America	Middle East and Africa	North America
Onsite	14%	18%	13%	12%	11%	8%	26%	12%
Online	86%	82%	87%	88%	90%	92%	74%	88%

Use of practice tests and labs increased despite declines in their integration in course materials. This demonstrates greater use of these materials by self-directed learners.

Practice test incorporation in course training materials dropped from 47% to 36%, yet usage increased from 37% to 46%.

Which learning materials and activities were provided as part of the training course?

	2020	2022
Text content developed by teacher or someone else at the institution	42%	34%
Printed published textbook or study guide	21%	20%
Digital published textbook or study guide (e.g., eBook)	34%	39%
Interactive media (online or software-based)	37%	28%
Instructional videos	43%	36%
Practice tests	47%	36%
Simulated work environment/practice lab	38%	24%
Work-based learning/co-operative education	15%	11%

"Preparing for the exam gave me a holistic understanding of the subject, which really helped me in performing my job role."

– Microsoft certification holder, Sri Lanka

Future plans

IT certifications continue to prove valuable for those who pursue them. Most survey respondents plan to obtain additional credentials and also recommend the pursuit of certifications to others in the IT field.

Most respondents are likely to recommend certification and plan to recertify in the next 12 months.

89%
are likely to recommend certification.

84%
are likely to recertify in the next 12 months.

Likely to recommend certification

	Global	Asia-Pacific	UK and Europe	India	Japan	Latin America	Middle East and Africa	North America
Very likely	65%	61%	63%	77%	32%	77%	80%	66%
Likely	24%	28%	26%	18%	44%	17%	15%	20%
Somewhat likely	9%	9%	8%	4%	22%	4%	4%	9%
Not very likely	2%	1%	3%	1%	2%	1%	1%	3%
Not at all likely	1%	1%	1%	0%	1%	0%	0%	3%

Future plans (cont.)

Likely to recertify

	Global	Asia-Pacific	UK and Europe	India	Japan	Latin America	Middle East and Africa	North America
Very likely	64%	57%	62%	71%	45%	77%	76%	60%
Likely	21%	25%	21%	21%	32%	16%	15%	16%
Somewhat likely	11%	13%	12%	6%	18%	6%	7%	13%
Not very likely	4%	5%	5%	2%	3%	1%	2%	7%
Not at all likely	1%	1%	1%	1%	2%	0.4%	1%	4%

Among respondents who plan to recertify, cloud computing, cybersecurity, and security certifications yielded the highest interest. Regionally, interest in cloud computing is a significant 48% in India and 44% in Japan (Appendix 7). Virtualization certifications, together with networking and wireless, were of interest for 21% of candidates.

Cloud computing and cybersecurity certifications will continue to be in high demand over the next 12 months, while interest in networking and wireless may be surpassed by the security and virtualization specialties.

"Obtaining my AZ-900 Certification spurred me on to pursue even more certifications and has given me the motivation to look for better employment. This little confidence boost is exactly what I needed in my life right now."

– Microsoft certification holder, South Africa

Future plans (cont.)

Specialty areas by year and of future interest

	2022	Intent to certify within 12 months
Cloud Computing (IaaS, PaaS and SaaS)	16.1%	38%
Cybersecurity	12.8%	34%
Security	9.8%	26%
Virtualization	5.5%	21%
Networking and Wireless	12.8%	21%
Servers	2.8%	16%
Artificial Intelligence/Machine Learning	1.1%	16%
DevOps	1.3%	15%
Analytics, Big Data and Data Warehouse	3.4%	14%
Storage	2.5%	12%
Application (Software) Development	4.1%	12%
IoT/Cloud Convergence	0.8%	10%
Business Skills	1.3%	10%
Operating Systems	1.4%	10%
Project Management, Agile and/or Scrum	0.7%	9%
Web Development	0.6%	8%
Database Administration and Development	0.9%	8%

	2022	Intent to certify within 12 months
Leadership and Management	0.5%	7%
CRM and ERP	3.9%	7%
Enterprise Architecture	2.2%	7%
Business Applications and Desktop Productivity	2.1%	6%
Open Source	0.2%	4%
e-Commerce/e-Business	0.8%	4%
Help Desk	1.6%	3%
Mobile	0.3%	3%
Collaboration, Telephony and Video/Web Conferencing	1.0%	3%
Game Development	0.2%	3%
Voice Engineering	0.5%	3%
Quality Assurance	0.2%	2%
3D Modeling/CAD	0.1%	2%
Extended Reality (VR, AR, MR)	0.1%	2%
Middleware	0.4%	2%
Multimedia Production and Graphic Design	0.1%	2%

Conclusion

In our *2021 Value of IT Certification Report*, we surmised that nascent trends emerging from the COVID-19 pandemic — remote working and learning, demands for the skills certifications help develop — would in time become more permanent.

Nearly two years on, we're confident our theory was on point. Talent shortages abound. Many team operations have remained remote, or at least hybrid. And more than ever, employers are seeking certified employees to fill crucial skills gaps.

This year's survey proves even further that the value of IT certifications is understood and appreciated by both those pursuing them and their employers.

Certification candidates are investing in building their knowledge and skills, starting to pursue credentials earlier in their careers, and enjoying benefits such as earning more money, finding more fulfilling jobs, and feeling more confident in their capabilities.

Likewise, their employers are supporting employee upskilling efforts and as a result, seeing higher quality work output and improving employee retention rates.

We remain convinced that these are no longer trends but new realities, and that IT certifications will continue to demonstrate value across industries, on a global scale.

We remain convinced that these are no longer trends but new realities, and that IT certifications will continue to demonstrate value across industries, on a global scale.

Appendix

Methodology

For the *2023 Value of IT Certification Candidate Report*, we sent an online survey to a random sample of 399,998 candidates who took an exam with Pearson VUE either virtually or at a test center between February 28, 2021, and February 28, 2022. To encourage participation, the first 75 candidates who completed surveys in four regions were offered a $15 (USD) or equivalent gift card. Responses from 21,715 candidates in 176 countries are included in this report.

The candidates surveyed were located in four regions: Asia-Pacific; Europe, Middle East and Africa; Latin America; and North America. For a more specific perspective on the data, these regions were further segmented to split out India and Japan in Asia-Pacific, as well as the UK and Europe from the Middle East and Africa. Language localizations in Korean and French were added to existing translations in Chinese, Japanese, and British English. Due to rounding, some results may reflect totals slightly higher than 100%.

Demographics

Age of respondents

	Global	Asia-Pacific	UK and Europe	India	Japan	Latin America	Middle East and Africa	North America
Under 18	0%	0%	0%	0%	0%	0%	0%	2%
18-24	11%	10%	7%	26%	8%	8%	10%	8%
25-34	38%	40%	33%	48%	30%	38%	50%	26%
35-44	31%	34%	34%	21%	32%	36%	31%	32%
45-54	15%	13%	21%	4%	24%	14%	7%	21%
55-64	4%	2%	6%	0%	6%	4%	1%	10%
Over 64	0%	0%	0%	0%	0%	0%	0%	1%

Gender of respondents

	Global	Asia-Pacific	UK and Europe	India	Japan	Latin America	Middle East and Africa	North America
Male	78%	79%	79%	74%	80%	80%	81%	74%
Female	18%	15%	16%	23%	18%	18%	17%	20%
Non-conforming	0.4%	0.7%	0.4%	0.2%	0.3%	0.3%	0.3%	0.6%
Prefer not to say	3%	5%	4%	3%	2%	1%	3%	5%
Other	0.2%	0.2%	0.3%	0.0%	0.1%	0.1%	0.1%	0.5%

Gender of respondents by year

Gender	Global		Asia-Pacific		India		Japan		Latin America		Middle East and Africa		North America	
	2020	2022	2020	2022	2020	2022	2020	2022	2020	2022	2020	2022	2020	2022
Male	83%	79%	82%	80%	82%	74%	85%	80%	85%	81%	83%	81%	76%	75%
Female	15%	18%	15%	15%	16%	23%	13%	18%	14%	18%	16%	17%	19%	20%
Prefer not to say	3%	3%	3%	5%	2%	3%	2%	2%	1%	1%	1%	3%	5%	5%

Demographics (cont.)

Education level

	Global	Asia-Pacific	UK and Europe	India	Japan	Latin America	Middle East and Africa	North America
Graduate or professional degree	46%	35%	45%	79%	19%	72%	36%	32%
Tertiary education/bachelor's degree	31%	47%	22%	15%	57%	12%	38%	32%
Associate degree or technical, trade, or vocational school completion	11%	10%	13%	4%	14%	10%	8%	20%
High school/secondary school diploma or equivalent	11%	7%	18%	3%	10%	6%	17%	15%
Less than high school/secondary school	1%	1%	2%	0%	0%	1%	1%	2%

Career level

	Global	Asia-Pacific	UK and Europe	India	Japan	Latin America	Middle East and Africa	North America
Senior level (15+ years avg.)	26%	25%	36%	12%	26%	31%	16%	32%
Mid-level (8-15 years avg.)	26%	28%	23%	25%	36%	26%	25%	21%
Professional or intermediate level (2-8 years avg.)	29%	28%	26%	35%	27%	31%	34%	21%
Entry-level (0-2 years avg.)	12%	12%	10%	23%	7%	7%	15%	14%
Not currently employed or a student	4%	4%	2%	3%	1%	1%	8%	7%
Not applicable: my current job is not a career	2%	1%	1%	0%	2%	3%	2%	3%
Prefer not to say	2%	3%	2%	2%	2%	1%	2%	2%

Demographics (cont.)

Employer size

	Global	Asia-Pacific	UK and Europe	India	Japan	Latin America	Middle East and Africa	North America
Fewer than 10 employees	8%	7%	7%	4%	3%	10%	12%	12%
10 to 49	10%	13%	11%	4%	5%	13%	17%	8%
50-99	8%	10%	9%	3%	5%	13%	12%	5%
100-199	8%	10%	10%	3%	7%	11%	9%	6%
200-499	10%	12%	11%	4%	10%	11%	11%	8%
500-999	8%	9%	8%	4%	10%	8%	9%	7%
1000-1999	8%	8%	7%	4%	13%	7%	8%	8%
2000-4999	8%	7%	7%	4%	15%	7%	7%	8%
5000-9999	6%	6%	6%	5%	9%	5%	4%	7%
10,000 or more	27%	19%	24%	64%	24%	15%	12%	32%

Certification programs represented

Exam candidates from the following 50 certification programs participated in this survey:

- Arcitura
- Avaya
- Baidu
- Broadcom Software (Symantec)
- CA Technologies
- Certitrek Group
- CertNexus
- Check Point
- Cisco
- Citrix

- CompTIA
- CrowdStrike
- Dell EMC
- DPtech
- Ericsson
- Esri
- ETEC
- F5 Networks
- Fortinet
- GIAC

- Hitachi
- HPE
- IBM
- Intuit
- (ISC)[2]
- Juniper Networks
- Kinaxis
- Kintone
- Lenovo
- LPI

- LPI Japan
- Meta (Facebook)
- Microsoft
- NetApp
- OMG
- Palo Alto Networks
- Pegasystems
- Ping Identity
- Qlik
- Ruijie

- SAS
- Snowflake
- Tableau
- Tanium
- UiPath
- UMTP
- Unity
- Veritas
- VMware
- ZTE

Reason for certification

1. What was your most important reason for pursuing this certification? (Select only one).

	Global	Asia-Pacific	UK and Europe	India	Japan	Latin America	Middle East and Africa	North America	First-timers	Multiple cert holders	Gen Z	Millenials	Gen X	Boomers
Job promotion	22%	23%	20%	20%	23%	25%	20%	20%	21%	22%	19%	24%	17%	11%
Job change	7%	6%	6%	6%	4%	5%	8%	16%	10%	6%	4%	8%	6%	4%
Find work	3%	3%	2%	2%	1%	1%	7%	7%	6%	2%	7%	3%	2%	4%
IT role	5%	8%	5%	5%	4%	4%	7%	5%	5%	5%	5%	5%	6%	4%
Skills, knowledge, competence	47%	43%	51%	54%	58%	45%	43%	35%	42%	49%	49%	45%	53%	56%
Enhance résumé	15%	17%	16%	14%	10%	20%	15%	16%	14%	16%	14%	15%	16%	20%
College/program application	0.5%	1%	0%	0%	0%	1%	1%	1%	1%	0%	1%	0%	0%	1%

2. Did you accomplish this goal?

	Global	Asia-Pacific	UK and Europe	India	Japan	Latin America	Middle East and Africa	North America	Male	Female
Yes	80%	76%	86%	85%	77%	82%	73%	77%	80%	81%
No	2%	2%	2%	1%	3%	2%	2%	4%	2%	2%
Not yet but still hoping to	18%	22%	12%	14%	20%	16%	25%	19%	18%	17%

2. Did you accomplish this goal? (cont.)

	First-timers	Multiple cert holders	Desire to advance or be promoted in my current job	Desire to make a job change	Desire to find work (I was/ am under or unemployed)	Desire to obtain a specific IT role	Desire to obtain skills, knowledge, or competence	Desire to enhance my professional profile and résumé	Desire to supplement my application for program or college admittance
Yes	76%	81%	70%	53%	44%	66%	89%	87%	76%
No	3%	2%	4%	7%	9%	2%	1%	1%	2%
Not yet but still hoping to	21%	17%	26%	40%	47%	32%	11%	12%	22%

Exam preparation

3. Training costs

	Global		Asia-Pacific		India		Japan		Latin America		Middle East and Africa		North America	
	2020	2022	2020	2022	2020	2022	2020	2022	2020	2022	2020	2022	2020	2022
I did	21%	24%	21%	28%	30%	21%	14%	21%	19%	19%	23%	37%	25%	27%
My employer	53%	53%	50%	48%	47%	63%	61%	59%	64%	54%	41%	39%	40%	40%
School/college/university (though I may have paid indirectly via tuition or student fees)	4%	4%	2%	3%	3%	2%	1%	2%	1%	1%	4%	4%	14%	11%
Government program/grant	4%	4%	6%	4%	1%	1%	0%	2%	2%	8%	6%	3%	11%	9%
Other third-party organization (e.g., not-for-profit organization)	4%	3%	4%	3%	5%	2%	1%	1%	3%	5%	9%	7%	3%	5%
I don't know	1%	2%	2%	3%	1%	2%	1%	1%	1%	1%	1%	2%	1%	1%
There was no charge	11%	8%	10%	8%	6%	4%	20%	13%	8%	9%	9%	5%	4%	5%
Prefer not to answer	4%	3%	5%	4%	7%	6%	1%	1%	2%	3%	6%	4%	2%	3%

4. Preparation method used

	Global		Asia-Pacific		India		Japan		Latin America		Middle East and Africa		North America	
	2020	2022	2020	2022	2020	2022	2020	2022	2020	2022	2020	2022	2020	2022
Commercial training center course	28%	14%	30%	21%	26%	10%	24%	16%	23%	8%	29%	17%	25%	11%
Employer-sponsored course	25%	25%	28%	27%	35%	43%	19%	17%	26%	30%	21%	23%	23%	16%
Academic or career development course	15%	16%	14%	18%	17%	18%	7%	8%	17%	18%	16%	20%	17%	19%
Self-directed materials (purchased)	32%	28%	27%	28%	24%	19%	42%	30%	30%	27%	29%	29%	37%	36%
Textbooks or subscriptions	16%	14%	14%	34%	11%	32%	17%	33%	18%	8%	16%	39%	21%	12%
Self-directed materials (free)	53%	54%	58%	11%	52%	7%	35%	5%	64%	37%	60%	10%	58%	41%
Practice tests	37%	46%	43%	47%	38%	49%	14%	23%	38%	42%	46%	48%	52%	60%
Practice lab	25%	29%	29%	30%	27%	27%	10%	10%	26%	34%	34%	37%	30%	33%

Benefits of certification

5. Benefits received, by gender

	Global		Asia-Pacific		UK and Europe		India		Japan		Latin America		Middle East and Africa		North America	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Job promotion	22%	20%	22%	22%	21%	19%	22%	16%	22%	29%	26%	22%	20%	20%	20%	18%
Job change	7%	7%	6%	6%	6%	7%	7%	3%	5%	4%	5%	5%	8%	6%	16%	16%
Find work	3%	4%	3%	4%	2%	3%	2%	2%	1%	1%	1%	2%	6%	11%	7%	9%
IT role	5%	4%	8%	4%	5%	4%	5%	3%	4%	4%	4%	2%	7%	4%	5%	5%
Skills, knowledge, competence	47%	48%	44%	43%	51%	50%	52%	60%	59%	54%	44%	48%	43%	44%	35%	35%
Enhance résumé	15%	16%	17%	21%	16%	17%	13%	16%	10%	8%	19%	20%	15%	15%	16%	18%
College/program application	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	0%	1%

6. Greater interest and confidence in exploring new job opportunities

	Global	Asia-Pacific	UK and Europe	India	Japan	Latin America	Middle East and Africa	North America	Male	Female
Yes	81%	86%	74%	⬆ 93%	⬇ 53%	88%	91%	80%	81%	82%
No	19%	14%	26%	7%	47%	12%	9%	20%	19%	18%

7. Specialty areas of interest in the next 12 months

	Global	Asia-Pacific	UK and Europe	India	Japan	Latin America	Middle East and Africa	North America
Cloud Computing (IaaS, PaaS & SaaS)	38%	39%	35%	⬆ 48%	⬆ 44%	40%	40%	36%
Cybersecurity	34%	40%	34%	⬇ 21%	⬇ 30%	37%	⬆ 45%	⬆ 55%
Networking and Wireless	26%	27%	29%	⬇ 16%	28%	27%	37%	35%
Security	21%	25%	24%	⬇ 13%	22%	28%	⬆ 27%	22%
Virtualization	21%	24%	20%	⬇ 13%	19%	24%	31%	25%
Application (Software) Development	16%	18%	17%	⬆ 7%	18%	22%	22%	17%
CRM and ERP	16%	15%	13%	22%	22%	18%	15%	⬇ 11%
Analytics, Big Data and Data Warehouse	15%	16%	17%	23%	9%	⬆ 17%	17%	13%
Servers	14%	16%	13%	⬇ 17%	12%	21%	13%	12%
Storage	12%	15%	13%	⬇ 7%	14%	17%	17%	10%
Enterprise Architecture	12%	10%	11%	18%	15%	12%	12%	9%
Business Applications and Desktop Productivity (e.g., Microsoft Office, Adobe Creative Cloud, Autodesk Design & Creation)	10%	12%	9%	10%	10%	10%	13%	11%
Help Desk	10%	10%	9%	11%	12%	15%	9%	8%
Operating Systems	10%	12%	12%	5%	6%	13%	13%	12%
Business Skills	9%	9%	8%	10%	8%	11%	11%	10%
DevOps	8%	7%	7%	12%	8%	11%	10%	8%
Artificial Intelligence/Machine Learning	8%	8%	7%	6%	11%	8%	10%	8%
Collaboration, Telephony and Video/Web Conferencing	7%	7%	7%	7%	7%	11%	8%	10%
Database Administration and Development	7%	8%	11%	11%	3%	8%	9%	4%
e-Commerce/e-Business	7%	8%	10%	6%	3%	10%	9%	6%
IoT/Cloud Convergence	6%	5%	9%	5%	10%	7%	7%	5%
Project Management, Agile and/or Scrum	4%	5%	4%	4%	5%	5%	4%	5%
Web Development	4%	5%	4%	4%	2%	10%	4%	3%
Leadership and Management	3%	2%	3%	1%	2%	4%	7%	8%
Voice Engineering	3%	3%	4%	3%	3%	4%	5%	4%
Middleware	3%	3%	4%	2%	2%	6%	5%	3%
Mobile	3%	3%	2%	2%	3%	3%	2%	4%
Game Development	3%	2%	2%	1%	1%	4%	6%	2%
Open Source	2%	3%	1%	3%	5%	2%	2%	3%
Quality Assurance	2%	3%	1%	1%	4%	2%	3%	3%
3D Modeling/CAD	2%	2%	2%	2%	3%	2%	1%	2%
Extended Reality (VR, AR, MR)	2%	2%	1%	2%	4%	2%	1%	1%
Multimedia Production and Graphics Design	2%	2%	1%	1%	1%	3%	2%	2%

Specialty areas: exams taken in 2020

2020	Global	Asia-Pacific	India	Japan	Latin America	Middle East and Africa	North America
3D Modeling/CAD	0.1%	0.0%	0.0%	0.2%	0.0%	0.0%	0.2%
Analytics, Big Data and Data Warehouse	3.3%	3.4%	3.9%	2.0%	2.9%	2.4%	4.9%
Application (Software) Development	3.9%	3.0%	10.7%	4.4%	3.5%	2.3%	2.1%
Artificial Intelligence/Machine Learning	1.0%	1.0%	0.8%	1.5%	0.8%	1.1%	0.7%
Business Applications and Desktop Productivity (e.g., Microsoft Office, Adobe Creative Cloud, Autodesk Design & Creation)	1.5%	1.2%	1.1%	2.1%	1.4%	1.5%	1.4%
Business Skills	2.1%	2.1%	1.7%	2.6%	3.1%	1.4%	1.3%
Cloud Computing (IaaS, PaaS & SaaS)	28.2%	33.2%	22.6%	34.2%	33.4%	28.2%	25.7%
Collaboration, Telephony and Video/Web Conferencing	0.8%	0.7%	1.1%	0.2%	1.5%	0.7%	0.5%
CRM and ERP	2.0%	2.3%	3.1%	1.5%	3.0%	2.2%	1.1%
Cybersecurity	6.5%	4.5%	2.7%	2.7%	3.4%	4.8%	12.8%
Database Administration and Development	2.8%	3.0%	2.9%	4.6%	2.6%	2.7%	2.8%
DevOps	1.8%	1.5%	2.6%	1.2%	2.8%	1.7%	1.3%
e-Commerce/e-Business	0.6%	0.9%	0.6%	0.4%	1.4%	0.3%	0.3%
Enterprise Architecture	2.6%	2.6%	2.0%	0.8%	4.1%	3.4%	2.3%
Extended Reality (VR, AR, MR)	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Game Development	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Help Desk	1.4%	0.6%	0.4%	0.7%	0.7%	3.3%	3.7%
IoT/Cloud Convergence	1.3%	1.6%	1.0%	1.6%	2.1%	1.4%	0.8%
Leadership and Management	0.5%	0.5%	0.4%	0.2%	0.7%	0.4%	0.4%
Middleware	0.2%	0.1%	0.2%	0.9%	0.3%	0.0%	0.1%
Mobile	0.4%	0.2%	0.5%	0.1%	0.3%	0.2%	0.3%
Multimedia Production and Graphics Design	0.1%	0.1%	0.0%	0.1%	0.2%	0.1%	0.1%
Networking and Wireless	14.6%	15.5%	16.8%	11.7%	11.1%	19.3%	11.2%
Open Source	0.2%	0.1%	0.6%	0.4%	0.1%	0.1%	0.3%
Operating Systems	2.0%	1.8%	1.0%	2.0%	1.9%	2.9%	2.2%
Project Management, Agile and/or Scrum	1.0%	0.8%	1.9%	0.9%	0.6%	0.7%	1.0%
Quality Assurance	0.3%	0.3%	0.2%	0.3%	0.5%	0.1%	0.4%
Security	5.8%	5.0%	4.1%	3.5%	5.0%	5.7%	12.7%
Servers	4.6%	5.0%	3.5%	7.4%	4.4%	5.9%	3.3%
Storage	1.7%	2.0%	2.7%	1.0%	1.9%	1.6%	1.0%
Virtualization	6.7%	5.6%	9.2%	7.8%	4.8%	3.7%	4.5%
Voice Engineering	0.3%	0.3%	0.5%	0.1%	0.6%	0.3%	0.2%
Web Development	1.3%	1.1%	1.5%	2.8%	1.0%	1.4%	0.8%

Specialty areas: exams taken in 2022

2022	Global	Asia-Pacific	India	Japan	Latin America	Middle East and Africa	North America
3D Modeling/CAD	0.1%	0.0%	0.0%	0.2%	0.0%	0.2%	0.1%
Analytics, Big Data and Data Warehouse	3.4%	3.3%	4.5%	2.8%	3.8%	1.9%	3.6%
Application (Software) Development	4.1%	3.1%	7.9%	5.4%	3.5%	2.2%	1.4%
Artificial Intelligence/Machine Learning	1.1%	1.3%	1.7%	1.0%	1.2%	1.0%	0.5%
Business Applications and Desktop Productivity (e.g., Microsoft Office, Adobe Creative Cloud, Autodesk Design & Creation)	2.1%	1.8%	1.5%	4.2%	1.3%	1.7%	0.9%
Business Skills	1.3%	1.7%	0.9%	1.4%	1.9%	0.9%	1.0%
Cloud Computing (IaaS, PaaS & SaaS)	16.1%	15.0%	27.3%	21.5%	12.8%	12.0%	10.3%
Collaboration, Telephony and Video/Web Conferencing	1.0%	0.6%	0.5%	0.4%	2.1%	1.0%	0.8%
CRM and ERP	3.9%	3.1%	6.3%	1.4%	3.1%	3.5%	1.6%
Cybersecurity	12.8%	14.5%	5.2%	11.4%	11.9%	12.6%	25.4%
Database Administration and Development	0.9%	0.9%	0.7%	1.7%	0.6%	0.4%	0.6%
DevOps	1.3%	1.2%	2.4%	0.5%	1.5%	0.8%	0.8%
e-Commerce/e-Business	0.8%	1.2%	0.5%	0.1%	2.3%	0.3%	0.3%
Enterprise Architecture	2.2%	1.9%	1.8%	0.5%	4.1%	2.4%	1.1%
Extended Reality (VR, AR, MR)	0.1%	0.1%	0.0%	0.0%	0.2%	0.1%	0.0%
Game Development	0.2%	0.5%	0.0%	0.3%	0.0%	0.0%	0.2%
Help Desk	1.6%	0.8%	0.1%	0.6%	1.1%	2.0%	5.7%
IoT/Cloud Convergence	0.8%	0.9%	1.4%	0.7%	0.9%	0.9%	0.3%
Leadership and Management	0.5%	0.6%	0.2%	0.5%	0.5%	0.7%	0.7%
Middleware	0.4%	0.1%	0.6%	1.4%	0.1%	0.3%	0.0%
Mobile	0.3%	0.4%	0.5%	0.1%	0.3%	0.2%	0.1%
Multimedia Production and Graphics Design	0.1%	0.1%	0.0%	0.1%	0.1%	0.0%	0.0%
Networking and Wireless	12.8%	15.5%	9.6%	9.3%	13.0%	21.1%	11.2%
Open Source	0.2%	0.0%	0.1%	0.7%	0.3%	0.1%	0.2%
Operating Systems	1.4%	1.1%	0.1%	1.6%	1.2%	2.0%	1.6%
Project Management, Agile and/or Scrum	0.7%	0.5%	0.7%	1.4%	0.3%	0.3%	1.2%
Quality Assurance	0.2%	0.0%	0.2%	0.7%	0.1%	0.1%	0.1%
Security	9.8%	9.4%	6.2%	7.1%	8.9%	13.0%	14.9%
Servers	2.8%	3.0%	0.6%	6.1%	2.9%	2.4%	1.8%
Storage	2.5%	3.1%	2.3%	2.6%	2.8%	3.3%	1.3%
Virtualization	5.5%	6.8%	4.4%	6.5%	5.0%	4.8%	2.9%
Voice Engineering	0.5%	0.4%	0.3%	0.4%	0.8%	0.7%	0.5%
Web Development	0.6%	0.4%	1.1%	0.8%	0.4%	0.5%	0.2%

Lifetime certifications

Age of first certification

First consideration	Global	Asia-Pacific	UK and Europe	India	Japan	Latin America	Middle East and Africa	North America
High school/secondary school (grades 9-12)	5%	5%	6%	2%	4%	3%	10%	8%
Post-secondary school (2-year college, vocational or technical school)	4%	4%	3%	3%	3%	4%	7%	8%
Post-secondary school (4-year college)	7%	9%	6%	8%	6%	5%	10%	8%
After completing schooling or training	9%	10%	9%	6%	1%	12%	16%	8%
Upon losing employment	2%	2%	2%	1%	1%	1%	2%	5%
0-2 years after starting a first job or career	30%	31%	31%	39%	29%	32%	29%	18%
2-8 years after starting a job or career	24%	23%	23%	28%	26%	27%	17%	21%
8-15 years after starting a job or career	10%	9%	10%	10%	12%	9%	6%	10%
15 years or more after starting a job or career	10%	7%	10%	5%	18%	8%	4%	14%

Number of certifications earned

	When did you first decide to pursue IT certification?									
How many IT certifications have you earned in total?	Global average, 2022	High school/ secondary school (grades 9-11)	Post-secondary school (2-year college, vocational or technical school)	Post-secondary school (4-year college)	After completing schooling or training	Upon losing employment	0-2 years after starting a first job or career	2-8 years after starting a job or career	8-15 years after starting a job or career	15 years or more after starting a job or career
	8.01	9.45	8.82	8.37	8.63	8.02	8.20	7.13	7.09	8.11

Number of certifications earned (cont.)

	Generation				What is your age?						
How many IT certifications have you earned in total?	Gen Z	Millenials	Gen X	Baby Boomers	Under 18	18-24	25-34	35-44	45-54	55-64	65+
	4.87	7.45	9.98	11.11	6.23	4.85	5.96	8.87	9.98	11.23	8.60

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