

An (ISC)² Cybersecurity Workforce Report

Women in Cybersecurity

YOUNG, EDUCATED AND READY TO TAKE CHARGE



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Introduction

Even though men outnumber women in cybersecurity by three to one, more women are joining the field – and they are gunning for leadership positions. Buoyed by higher levels of education and more certifications than their male counterparts, women cybersecurity workers are asserting themselves in the profession.

Compared to men, higher percentages of women cybersecurity professionals are reaching positions such as chief technology officer (7% of women vs. 2% of men), vice president of IT (9% vs. 5%), IT director (18% vs. 14%) and C-level/ executive (28% vs. 19%), based on findings in the 2018 (ISC)² Cybersecurity Workforce Study. The figures show that women are forging a path to management.

They are generally more educated and younger. While 44% of men in cybersecurity hold a post-graduate degree, the number of women is 52%. Nearly half of women cybersecurity professionals surveyed are millennials – 45% compared to 33% of men. By contrast, Generation X men make up a bigger percentage of the workforce (44%) than women (25%).

According to the survey, women working in cybersecurity currently account for about one quarter (24%) of the overall workforce. This is a significantly higher finding than from 2017, when only 11% of study respondents were women. It should be noted that this study used a revised research methodology, which likely accounts for the larger representation of women.

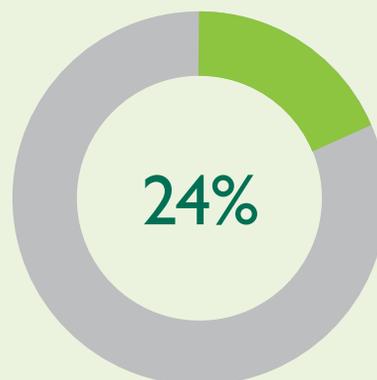
Why the Big Shift?

Past iterations of the (ISC)² Cybersecurity Workforce Study (formerly the Global Information Security Workforce Study) found the number of women in cybersecurity was a mere 11%. However, with the most recent study, we have taken a more holistic look at who is truly doing the work of cybersecurity. We talked to certified cybersecurity professionals in official cybersecurity functions as well as IT/ICT professionals who spend at least 25% of their time working on cybersecurity responsibilities. Through this new approach to defining the cybersecurity workforce, our goal is to get a more accurate picture of the people doing the work – which, in turn, will provide more insight into the challenges we are facing and help us find solutions. One of the most significant differences we found, through this improved, more inclusive methodology, is that the number of women with cybersecurity responsibilities who responded to our survey is now up to 24%. Previous methodologies focused heavily on traditional cybersecurity roles and sectors in which many cybersecurity practices and functions originated, like the U.S. federal government. By broadening the scope of our research to encompass the men and woman doing the work in organizations of all sizes across public and private sectors, and around the globe, we found a significant increase in the number of women in the cybersecurity workforce.

Women at Work in Cybersecurity

With a more accurate approach to surveying the cybersecurity workforce, (ISC)² found that nearly one quarter of respondents to our workforce study were female.

 Women  Men



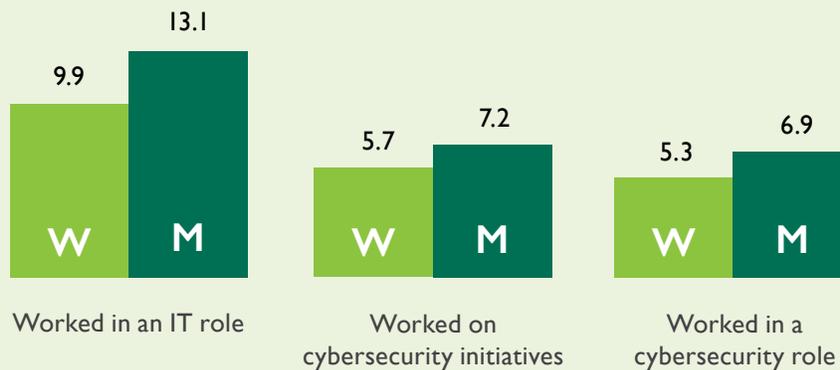
Salaries Still Lagging

Our research suggests women cybersecurity professionals still face an uphill climb in some areas, specifically in compensation. When asked about their previous year's salaries, 17% of women said they earned U.S. \$50,000 to \$99,999, a full 12 percentage points less than men (29%). Women are somewhat closer in representation within the \$100,000+ range (16% vs. 20% of men) but of course that still means proportionally fewer women earn that level of compensation.

Some of this inequity may be explained by age and tenure. If women cybersecurity professionals as a group are younger than men, fewer have worked in the field as long as most male counterparts, so that may be a cause for some discrepancy. But this doesn't erase the reality revealed in previous research that women in cybersecurity managerial positions earn about \$5,000 less than men, indicating there is still an issue that needs to be addressed'.

The inequity may also explain what compels women to proportionally earn more degrees and certifications than men. Women place more value than men (28% vs. 20%) on cybersecurity or related college graduate degrees, according to the Cybersecurity Workforce Study. On average, women also earn more cybersecurity certifications.

Average Number of Years in Roles



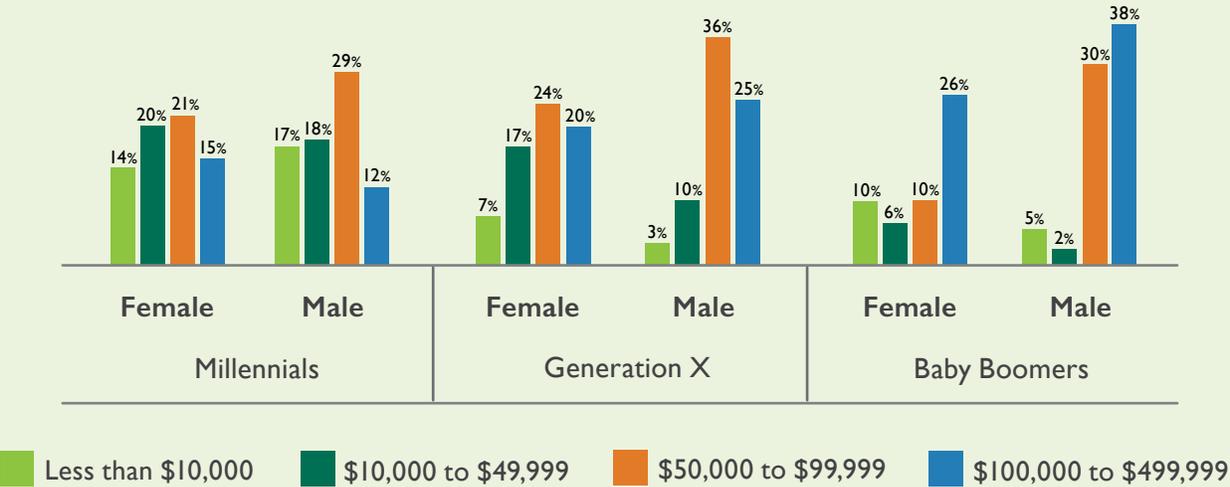
Overall, women have been working in IT and cybersecurity roles for less time than men.

By placing more emphasis on education and certification, women cybersecurity workers may be forging a path to career advancement and earning the qualifications to fill leadership roles. With this leadership comes more responsibility and credibility among peers, as well as a boost in salary.

So as women continue to contend with obstacles they've historically faced, including pay disparity, our research suggests that their efforts are paying off. Proportionately, they fill more leadership roles than men and sit higher on the corporate hierarchy. For example, 11% of women report to the vice president of IT vs. 6% of men, and 19% report to the IT security director vs. 14% of men.

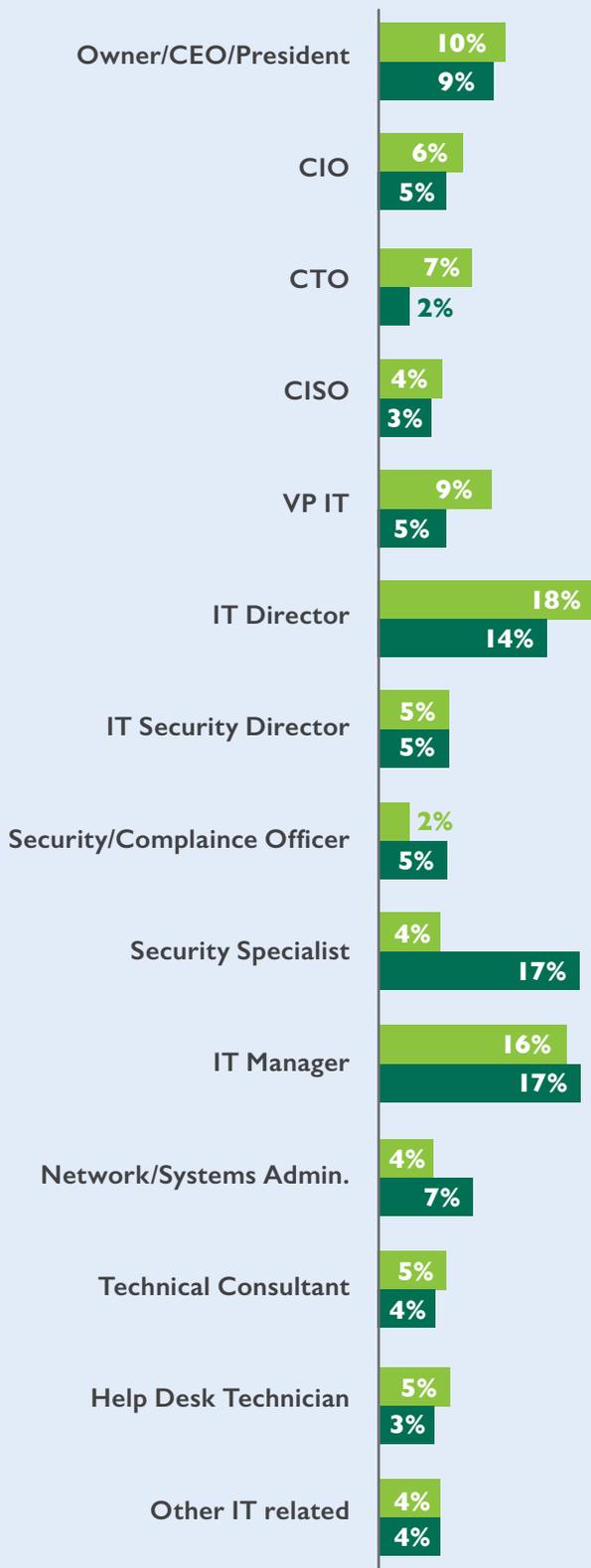
These gains are important not only for current women cybersecurity professionals but also for future generations. The more women who succeed in cybersecurity, the more likely they are to attract other women into the field. This would fill an acute need since the cybersecurity skills shortage has reached nearly 3 million worldwideⁱⁱ.

Younger Women Experience Less Pay Inequity



Globally, younger women face less severe pay discrepancy than older women. 21% of Millennial women earn between \$50,000 and \$99,999 compared to 29% of men of the same generation. Meanwhile only 10% of women Baby Boomers earn this much compared to 30% of Baby Boomer men. There was a 12% gap in the number of Generation X women earning \$50,000 to \$99,999 compared to men of the same generation, and another 12% gap in the number of Baby Boomer women earning more than \$100,000 compared to Baby Boomer men. One of the narrowest gaps in pay was the 3% lead Millennial women hold over Millennial men earning more than \$100,000.

Climbing the Leadership Ladder



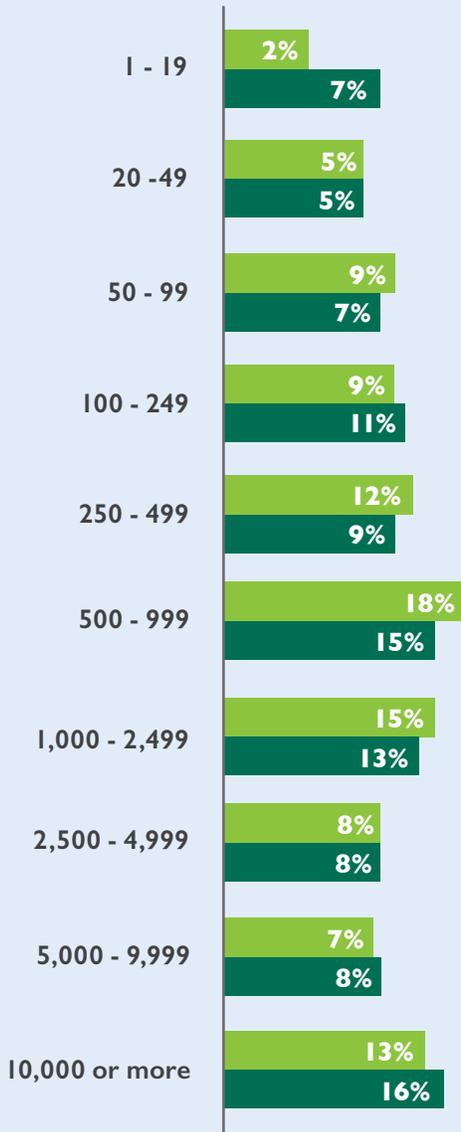
■ Women
 ■ Men



Proportionately, women fill more leadership roles than men and sit higher on the corporate hierarchy. While the numbers are close, our research finds slightly higher percentages of women than men are earning roles in management and the C-Suite.

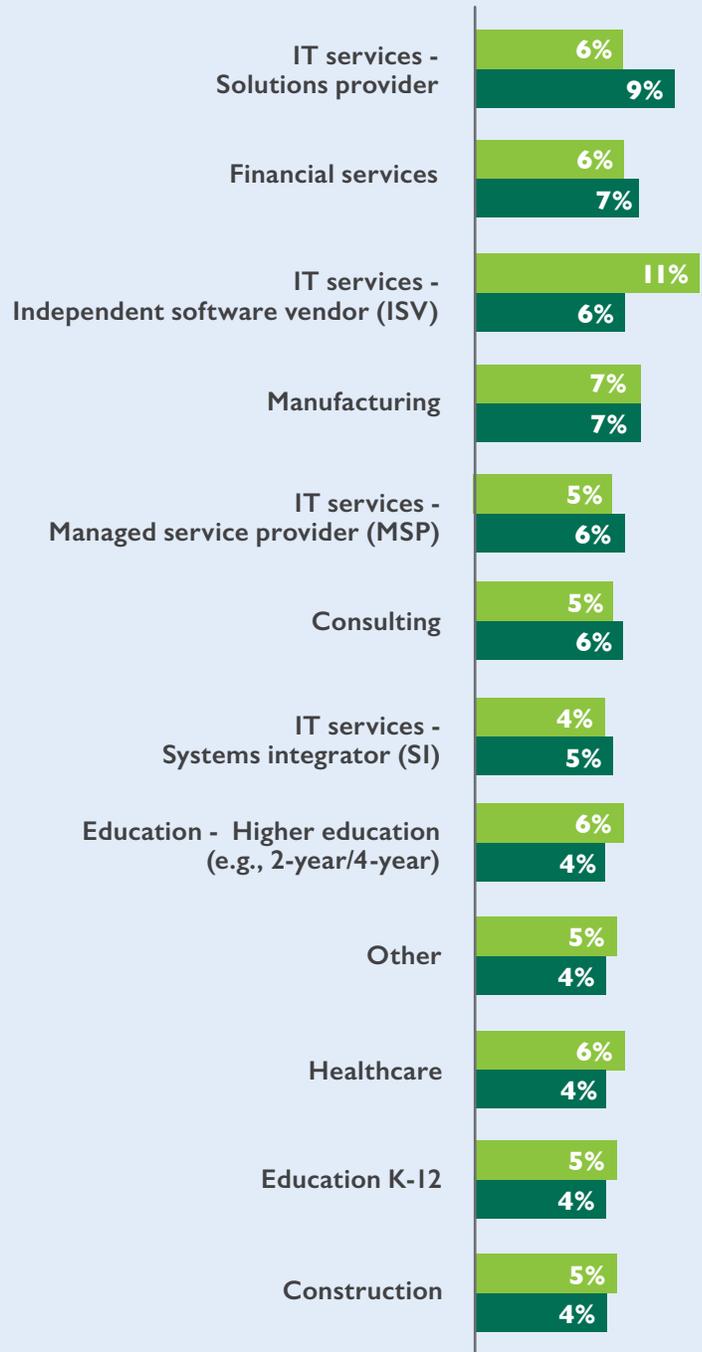
Representation of Women Across Sectors and Organizations by Size

Company Size by Employee Count



From small business to big enterprise, the proportional representation of women and men in cybersecurity roles is very similar.

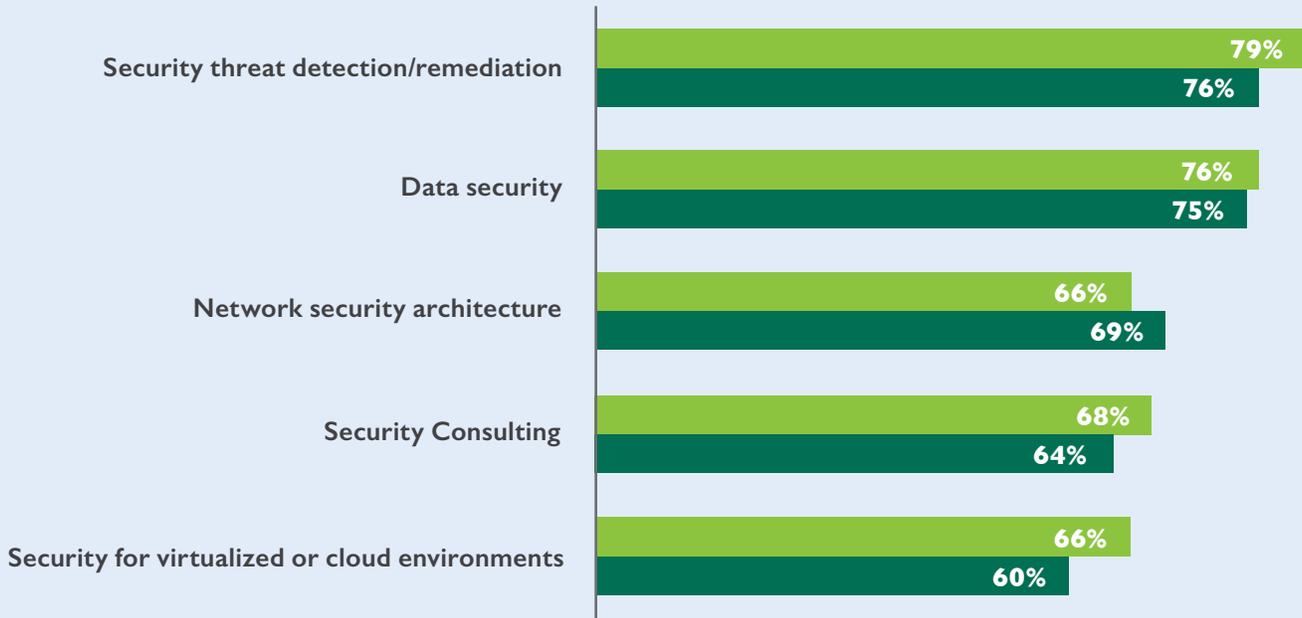
Top Industries Represented



With the exception of software vendors, women and men are equally drawn to a diverse slate of industries and economic sectors.

Women Men

Women and Men Do the Same Work



When asked about specific cybersecurity tasks they are assigned, women and men identified nearly identical responsibilities.

 Women  Men

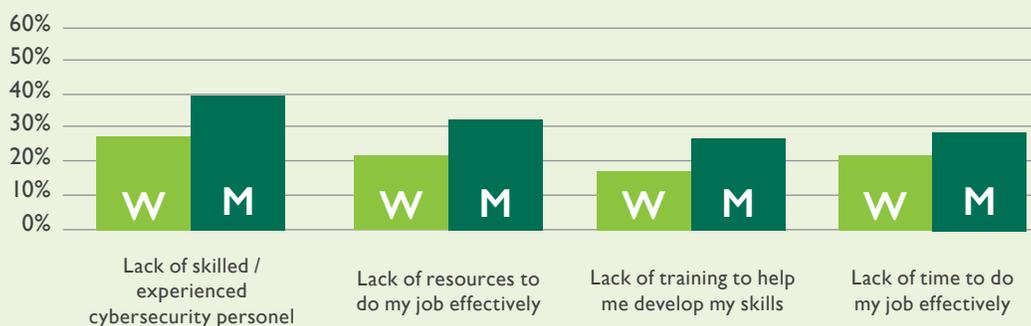


Priorities and Concerns

As revealed in previous (ISC)² researchⁱⁱⁱ, women and men cybersecurity workers share many priorities in fulfilling their job obligations. They share a lot of the same concerns, including lack of commitment from upper management, the reputation of their organization, risk of seeing their job outsourced, lack of work/life balance, the threat of artificial intelligence (AI) reducing the need for cybersecurity workers and a lack of standardized cybersecurity terminology to effectively communicate within their organizations.

In these areas, the gap between women and men is never that wide. For instance, the gap in the level of concern related to employers not listening to their input is only 2% (16% of women vs. 18% of men). And when it comes to concern over lack of work-life balance, again, the gap is a mere 2% (28% of women vs. 26% of men).

Top Concerns Where Women and Men Differ



When asked how they would use the time if more were available in their workday, women focused on three main areas:

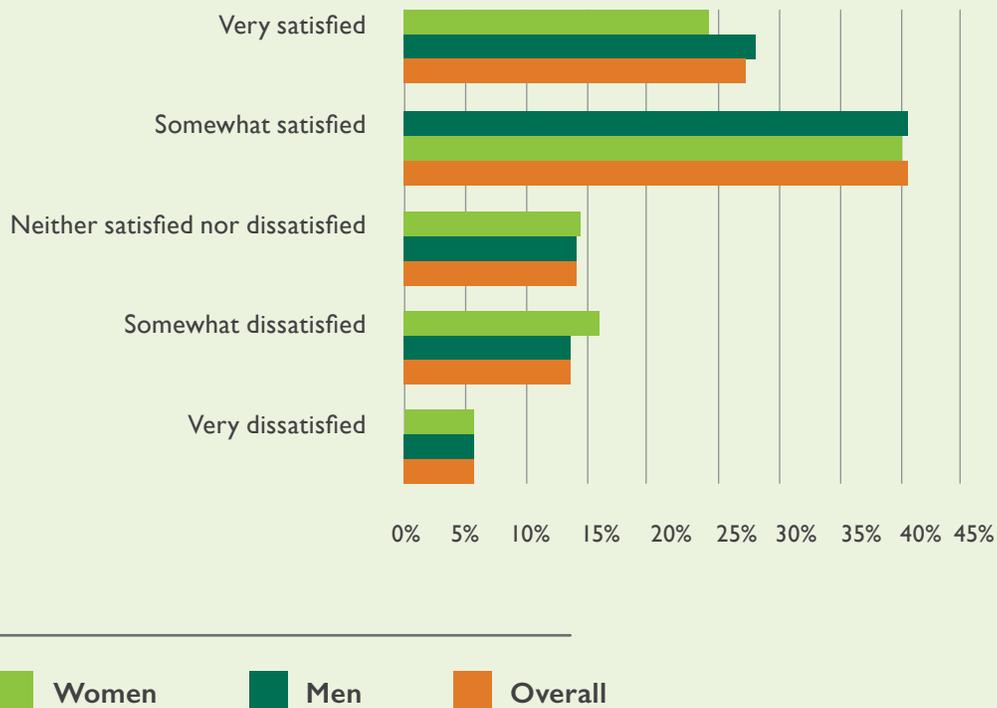
- Risk analysis and management
- Threat intelligence analysis
- Security engineering

Threat intelligence analysis seems to be a focus among women cybersecurity workers, with almost one third (31%) saying the task consumes a significant amount of their time. This compares with 25% of men.

More in Common Than Not

There isn't much difference between what women and men cybersecurity professionals value about their jobs, (ISC)² research has revealed. Women and men have pretty much the same workplace values, priorities and aspirations. Both place a similar level of importance on salary and working close to home and use the same skills at work. Past (ISC)² research, including our report on Hiring and Retaining Top Cybersecurity Talentⁱⁱⁱⁱ, had similar findings in terms of what women and men cybersecurity professionals valued about their jobs, and what they looked for in an employer.

Women and Men Share Similar Job Satisfaction Rates



Challenges

All cybersecurity workers face challenges in their day-to-day work. While some companies make it easier for them by adopting a strong cybersecurity culture through a serious commitment by top management, many still view it as more of a chore or do not realize how critical the need for cybersecurity really is. In a recent report, the World Economic Forum ranked cybersecurity attacks as the fifth highest risk to doing business around the world – and No. 1 in North Americaⁱⁱ.

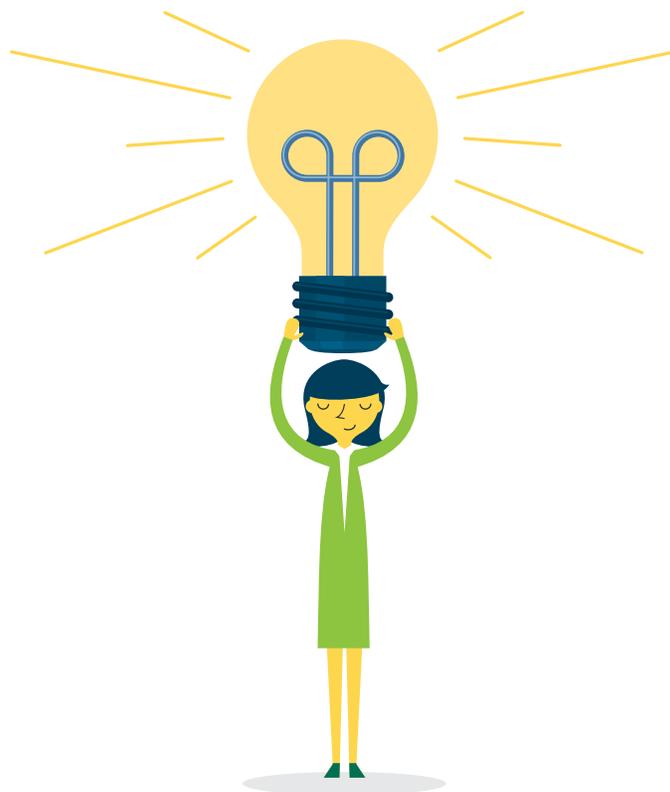
Challenges faced by cybersecurity teams often include poorly funded budgets, the recruitment of skilled professionals and keeping up with evolving cyber threats. Women polled in the Cybersecurity Workforce Study cited their top challenges as low security awareness among end users (19%), insufficient availability of cybersecurity professionals (17%), inadequate funding (16%) and lack of management support or awareness (14%). If not addressed, any one of these challenges can weaken an organization's defenses, making it more difficult to protect data and users.



Conclusion

The increasing representation of women in our study is a positive development for the professionals themselves and for the profession as a whole. Our research shows encouraging signs that women are succeeding in forging a path to career success by seeking higher education and qualifying for leadership roles despite traditional obstacles like discrepancy in pay. As women succeed in the profession, they serve as role models for other women wanting to join the cybersecurity workforce. This will make the workforce more diverse, and as a result more innovative and better able to solve problems, and help address the cybersecurity skills gap.

In order to build strong, adequately staffed cybersecurity teams, employers – and the cybersecurity profession as a whole – must make cybersecurity a rewarding and welcoming career for everyone. Understanding the challenges our profession faces is a critical first step to accomplishing that goal and ultimately addressing the widening cybersecurity workforce gap.



About the (ISC)² Cybersecurity Workforce Study

(ISC)² conducts in-depth research into the challenges and opportunities facing the cybersecurity profession. The (ISC)² Cybersecurity Workforce Study (formerly the Global Information Security Workforce Study) is conducted annually to assess the cybersecurity workforce gap, better understand the barriers facing the cybersecurity profession, and uncover solutions that position these talented individuals to excel in their profession, better secure their organizations' critical assets and achieve their career goals.

Learn more at www.isc2.org/research.

Methodology

Results presented in this report are from an online survey conducted by (ISC)² and Spiceworks in August 2018. The survey measured various aspects of working in the cybersecurity field including workforce staffing shortages, education and skills needed to do the job, and challenges faced in the profession. The sample structure was carefully designed to obtain feedback from a diverse group of professionals working in cybersecurity roles. 1,452 individuals from North America, Latin America, and Asia-Pacific participated in the survey. The margin of error for this research is plus or minus 3% at the 95% confidence level.

About (ISC)²

Celebrating its 30th anniversary this year, (ISC)² is an international nonprofit membership association focused on inspiring a safe and secure cyber world. Best known for the acclaimed Certified Information Systems Security Professional (CISSP®) certification, (ISC)² offers a portfolio of credentials that are part of a holistic, programmatic approach to security. Our membership, more than 140,000 strong, is made up of certified cyber, information, software and infrastructure security professionals who are making a difference and helping to advance the industry.

For more information on (ISC)², visit www.isc2.org.

Citation

i. (ISC)² Cybersecurity Workforce Study

www.isc2.org/-/media/ISC2/Research/2018-ISC2-Cybersecurity-Workforce-Study.ashx

ii. World Economic Forum, Centre for Cybersecurity

www.weforum.org/centre-for-cybersecurity

iii. Hiring and Retaining Top Cybersecurity Talent

www.isc2.org/-/media/Files/Research/ISC2-Hiring-and-Retaining-Top-Cybersecurity-Talent.ashx

iiii. The 2017 Global Information Security Workforce Study: Women in Cybersecurity

www.isc2.org/-/media/Files/Research/ISC2-Women-in-Cybersecurity-2017

