LinkedIn Economic Graph

Skills-First: Reimagining the Labour Market and Breaking Down Barriers
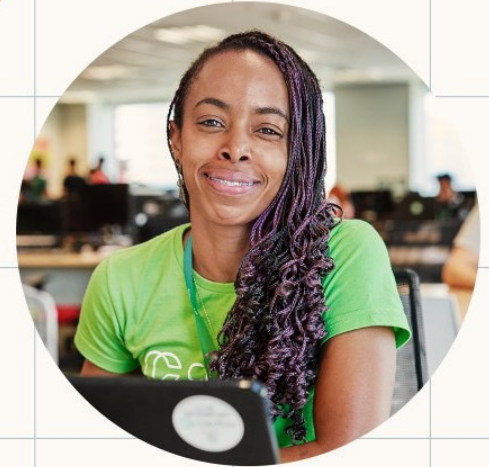
European Highlights, May 2023

Table of contents

Around the world, we have entered a period of uncertainty where persistent change is the norm.

We experienced a pandemic that brought the unemployment rate to new highs and normalised remote work. A year later, we entered a period marked by a collective reevaluation of work, prompting the workforce to switch jobs at unprecedentedly high rates. We then saw a disconnect between employee demand for remote work and employers offering fewer remote opportunities.

In late 2022, we started to see the global economy cool and rebalance. We also saw gradual declines in the LinkedIn hiring rate[1] — especially in Europe and in the US — and anxiety around inflation, the labour market, and the economy remains at the forefront. The number of LinkedIn members changing jobs has stagnated in some countries and has fallen to pre-pandemic levels in others.

The current labour market is full of missed opportunities where incredible candidates are not getting matched to positions that could positively impact companies, the economy, and society.

We must minimise these missed opportunities and focus on building a deep understanding of people's potential. We collectively need to shift our mindset so that we hire based on skills and learning, and not solely on degree or job title.

One thing that hasn't changed is the fact that talented candidates are everywhere. Our new report illustrates the possibilities that await the labour market if we shift to a model that optimises for having the right people with the right skills in the right roles. New LinkedIn data shows that a skills-first approach to hiring provides opportunities for policymakers and governments to expand educational programs and prioritise initiatives that create a more resilient workforce. A skills-first approach also gives businesses access to wider talent pools to meet their skills needs, and it generates more opportunities for more workers by levelling the playing field.

As our economies undergo the twin digital and green transition, there is a need to rethink how we prepare the workforce for the jobs of the future, and how we match talent to opportunity more efficiently and equitably. In this regard, the European Year of Skills 2023 provides a unique opportunity to highlight how taking a skills-first approach can help ensure that skills match the needs of the labour market and people's aspirations.

We have the chance to reimagine the labour market and break down barriers, and to build a world where everyone has access to opportunity — not because of where they were born or whom they know or where they went to school but because of their skills and abilities.

Sue Duke
Global Public Policy, LinkedIn

[1] The LinkedIn hiring rate is a measure of hires divided by LinkedIn membership.

The global labour market has long been opaque, inefficient, and unequal, but these structural challenges are becoming more problematic than ever as the nature of work and the demands of businesses are rapidly changing.

On the one hand, demographic changes are causing a decline in the working population in many countries. At the same time, technological advances mean there is an increase in the demand for highly skilled labour, and there are significant changes in the qualifications and skills needed in today's economies. Recent LinkedIn data shows that the skills that employees need for a given position have shifted by around 25% since 2015; by 2027, this number is expected to double.[2]

Governments and businesses today are tasked with navigating a dynamic talent market that poses many challenges to staffing critical industries and filling open jobs. But current methods of finding talent often exclude large swathes of the population — such as workers who may have the capabilities businesses are looking for but don't have traditionally accepted experience or credentials. A recent survey confirmed that 88% of hirers agree that they are filtering out highly skilled candidates just because they lack traditional credentials such as past job title or degree.[3] Meanwhile, many job seekers struggle to find and stand out for jobs they are interested in, or rule themselves out for jobs that they could be a strong fit for. These

practices disproportionately exclude women, workers without degrees, and older workers, which leads to a less diverse workforce.

Skills are the building blocks of the labour market — the essential elements of occupations and career paths. If we really understand this value and adopt skills-based hiring, we can reimagine the workforce and empower workers to reach their full potential.

It comes down to this: How can we all, collectively across government, business, and the workforce, take a fundamentally new approach to human capital?

We know that great talent is everywhere — but opportunity is not. The future labour market will be about analysing, accessing, and mobilising people's potential and skills in new ways. This starts with taking a skills-first approach to talent: putting skills at the forefront of talent strategies by recognising an individual for their capabilities and breaking down roles into the capabilities required to do them well. We have to expand the hiring process beyond titles and companies, degrees and schools, and focus instead on skills **and the many different ways those skills can be acquired.**

[2] LinkedIn (2022), "A Skills-First Blueprint for Better Job Outcomes"
[3] Harvard Business School (2021), "Hidden Workers: Untapped Talent"

Introduction

With online learning, certificate programs, apprenticeships, and other training opportunities, employers do not need to rely entirely on prior job titles and degrees to assess a candidate's abilities. Employers should also consider skills acquired through other pathways, including individual learning accounts and micro-credentials. Businesses can and should remain adaptable and competitive by leveraging skills data to inform smarter talent strategies.

The good news is this shift is already underway. Employers are showing signs of embracing this new way of thinking about talent.

In the last year, more than 45% of hirers on LinkedIn explicitly used skills data to fill their roles, up 12% year over year. Roughly one in five job postings (19%) in the US, for example, no longer requires degrees, up from 15% in 2021.

The value of learning and skills development is becoming increasingly clear to our members as well.

In the past year, members added 380 million skills to their profiles, up over 40% year over year. We're also seeing LinkedIn members add certifications to their profiles at an accelerated rate, up 16% in 2022 compared to 2021.

In this report, we'll explore the implications of adopting a skills-first approach to the labour market for both policymakers and businesses and how it can:

• **Expand the talent pool**
• **Democratise access to jobs**
• **Make the labour market and workforce more resilient**

Taking a fundamentally different approach to analysing, managing, and allocating human capital will not be without challenges, but we are committed to mobilising our platform, insights, and community to accelerate this transition. When we increase access to training and encourage workers to expand their skills, we nurture a more engaged workforce, a more productive economy, and a more equitable society.

New LinkedIn findings in this report show that a skills-first approach to hiring can:

20x Add up to 20x more eligible workers to the employment talent pools

+9% Globally, on average, increase the talent pool of workers without bachelor's degrees by 9% more than for workers with degrees

+24% Increase the proportion of women in the talent pool 24% more than it would for men in jobs where women are underrepresented

8.5x Increase the talent pool for Gen X workers by 8.5x, 9x for Millennial workers, and 10.3x for Gen Z workers

Expanding opportunities with a skills-first approach

For decades, employers have largely relied on employment history and traditional education achievements to identify, select, and filter out candidates.

While this approach has always been flawed, the cracks in this model are becoming more apparent by the day. Research suggests that traditional signals such as years of experience are flawed predictors of someone's ability to do a job well.[4] Additionally, many workers continue to lack access to higher education opportunities.

With significant shifts in the global economy now and to come, reimagining the way we approach the labour market has taken on a new sense of urgency. Changing demographics around the world continue to make it challenging for employers to fill certain roles. Labour supply in many countries continues to be constrained due to declining worker populations, lower-than-expected population growth, early retirements, and decreases in immigration.

At the same time, the rate of change for jobs poses new challenges for businesses and governments in training and developing the workforce of tomorrow. It is time to rethink the way we hire and grow talent.

For businesses, prioritising a skills-first approach instead of the traditional reliance on prior job title and degree means businesses can have a larger and much more diverse talent pool to choose from. Potential employees may possess relevant skills, but may not have bachelor's degrees or comparable job titles. A skills-first model means employers can gain access to a broad and qualified group of candidates with skills that transfer across industries, jobs, and geographies, regardless of educational background, age, or gender.

The benefits of a skills-first approach to businesses extend well beyond the hiring phase and have notable impacts throughout the employment cycle. For example, LinkedIn data finds that investing in employees' learning and growth is key to retention:

Workers who have made an internal move at their organisation at the two-year mark have a 75% chance of remaining there, compared to 56% for those who haven't.[5]

[4] Chad H. Van Iddekinge, John D. Arnold, Rachel E. Frieder, and Philip L. Roth (2019), "A meta-analysis of the criterion-related validity of pre-hire work experience." Personnel Psychology 72, no. 4: 571–598.

[5] LinkedIn (2022), "New Global Talent Trends: Even as Hiring Cools, People Want More out of Work"

Likewise, companies that excel at internal mobility are able to retain employees for an average of 5.4 years. That's nearly 2x as long as companies that struggle with it, where the average retention span is 2.9 years.[6]

Employees have long been asking for work that complements what they can do and provides opportunities to learn and grow. In a skills-first labour market, people can find or stay in jobs that match their skills and skill-building potential, ultimately leading to a more engaged workforce.

We see similar benefits for job seekers. When LinkedIn started highlighting to job seekers that their skills matched job postings, we found that people who applied to jobs that matched their skills had higher success landing a job with fewer applications. Additionally, skill qualification transparency encouraged more women, who typically set a higher self-qualification bar, to apply to jobs. The increase in women applying was 1.8x the increase we observed in men, with a similar impact on hiring outcomes.

We have also found in preliminary research that a LinkedIn member adding 10 or more skills to their profile decreases the median employment gap by about one month. Early findings indicate that these added skills increased the speed at which individuals found new employment, and this was equally true across all education groups.[7]

In this report, we use LinkedIn data to look at two different hiring approaches and the talent pools they would produce. The first approach examines prior job title hiring: searches for candidates who have held the same job title in the past five years. The second adopts a "skills-first hiring" approach: searches for candidates who may not have held the same job title before but work in jobs with relevant and overlapping skills. In this analysis, we considered candidates not accounting for their educational background and other important hiring signals, so we could isolate the impact of using skills as opposed to prior job title.

The purpose of this analysis is to show:

1. The extent to which there are more workers with the relevant skills for a job than just those who have previously held that job title

2. What implications this has for different groups of workers, namely workers of different genders, levels of education, and age

Skills-first hiring is the recruitment strategy that focuses on a candidate's skills and abilities to do the job whether or not they meet typical education, prior employer, or job title requirements. Prioritising skills does not ignore traditional hiring and development systems that already work but enhances them to better match talent with opportunity.

[6] LinkedIn (2020), "Where Internal Mobility Is Most Common Since COVID-19: Top Countries, Industries, and Jobs"

[7] Matthew Baird, Paul Ko, and Nikhil Gahlawat (2022). "Skill Signals in a Digital Job Search Market and Duration in Employment Gaps." LinkedIn Economic Graph.

Talent pools expand nearly 10x when using a skills-first approach

Expanding the talent search to include workers with relevant skills ("skills-first talent pool") led on average to a 9.4x increase in eligible workers across all jobs.

That's a near tenfold increase in potential candidates who were previously overlooked. A skills-first approach results in a paradigm shift in hiring — one that helps businesses compete in a tight talent market while expanding opportunities for workers. Expanding the talent pool means less competition over the same small pool of candidates with other companies in the industry. It also means more focused hiring as businesses are able to directly match the skills needed for that specific job posting, as opposed to looking for people who have held similar titles but may not actually have the right capabilities for the role. Further, it allows companies' hiring practices to keep pace with the changing nature of work; as the skills required for jobs change, companies can continue to target their recruitment at candidates based on new and dynamic skills requirements rather than static job titles.
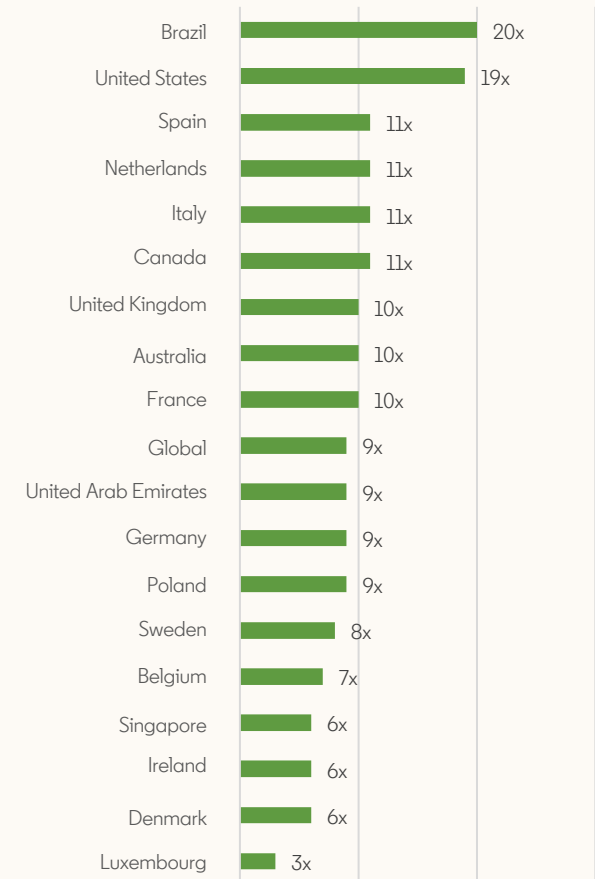
There is significant variation in the impact of skills-first hiring on the size of talent pools in different countries. The United States and Brazil would experience the biggest increases in eligible candidates — a staggering 19x and 20.2x, respectively — if employers adopted a skills-first approach to searching for talent. The smallest uplift observed was an increase of 2.8x, which demonstrates how transformational a skills-first approach could be in all countries. Other countries, such as France and the UK, would experience a lower but nonetheless transformational increase of around 10x. Employers in Ireland, New Zealand, and Singapore, on the other hand, would see a smaller, but still meaningful, increase in their talent pools of 5x or 6x. The countries with larger pool increases may have more workers who share many of the same skills despite having different job titles (Chart 1).

Likewise, we observe significant variation within the talent pools for specific jobs within these markets. In Italy, a skills-first approach increases the talent pool for Digital Marketing Managers by almost 26x because many of the most relevant skills associated with this job — such as Digital Marketing, Web Analytics, and Online Advertising — are common across other jobs. Overall, there are 35 job titles in Italy held by workers who have relevant skills for a Digital Marketing Manager role and would be considered for that job in a skills-first approach, but who would not be considered in traditional, job title-based hiring. One of these jobs is Search Engine Optimisation Consultant, which shares the skill Content Strategy as well as 18 out of the 30 top Digital Marketing skills. Another is Retail Business Manager, which shares the skill E-commerce and 18 out of the 30 top skills for a Digital Marketing Manager.

A skills-first hiring approach would increase talent pools across different markets and industries. Similarly to Digital Marketing Managers in Italy, Supply Chain Managers in Ireland would see an increase in talent pool by more than 6x.

Chart 1: Skills-First Talent Pool Increase by Country[8]

Country	Increase
Brazil	20x
United States	19x
Spain	11x
Netherlands	11x
Italy	11x
Canada	11x
United Kingdom	10x
Australia	10x
France	10x
Global	9x
United Arab Emirates	9x
Germany	9x
Poland	9x
Sweden	8x
Belgium	7x
Singapore	6x
Ireland	6x
Denmark	6x
Luxembourg	3x

The top skills associated with this job — such as Supply Chain Management, Demand Planning, Procurement, and Operations Management — are found in other jobs such as Demand Planner, which shares Forecasting and 18 other skills, and Logistics Manager, which shares Procurement and 13 other skills. In France, Accounting Specialists would see an increase in talent pool by 27x. The top skills associated with this job are Financial Accounting, Account Reconciliation, Financial Analysis, and Sage Products. These skills are found in many other jobs in France — such as Financial Auditor, sharing Financial Consolidation and 16 other skills, and Case Manager, sharing Bookkeeping and 20 other skills.

When using a skills-first approach, the average increase in talent pool size for an EU member state is 6.1x.

Explore interactive data that shows how a skills-first approach can expand talent pools.
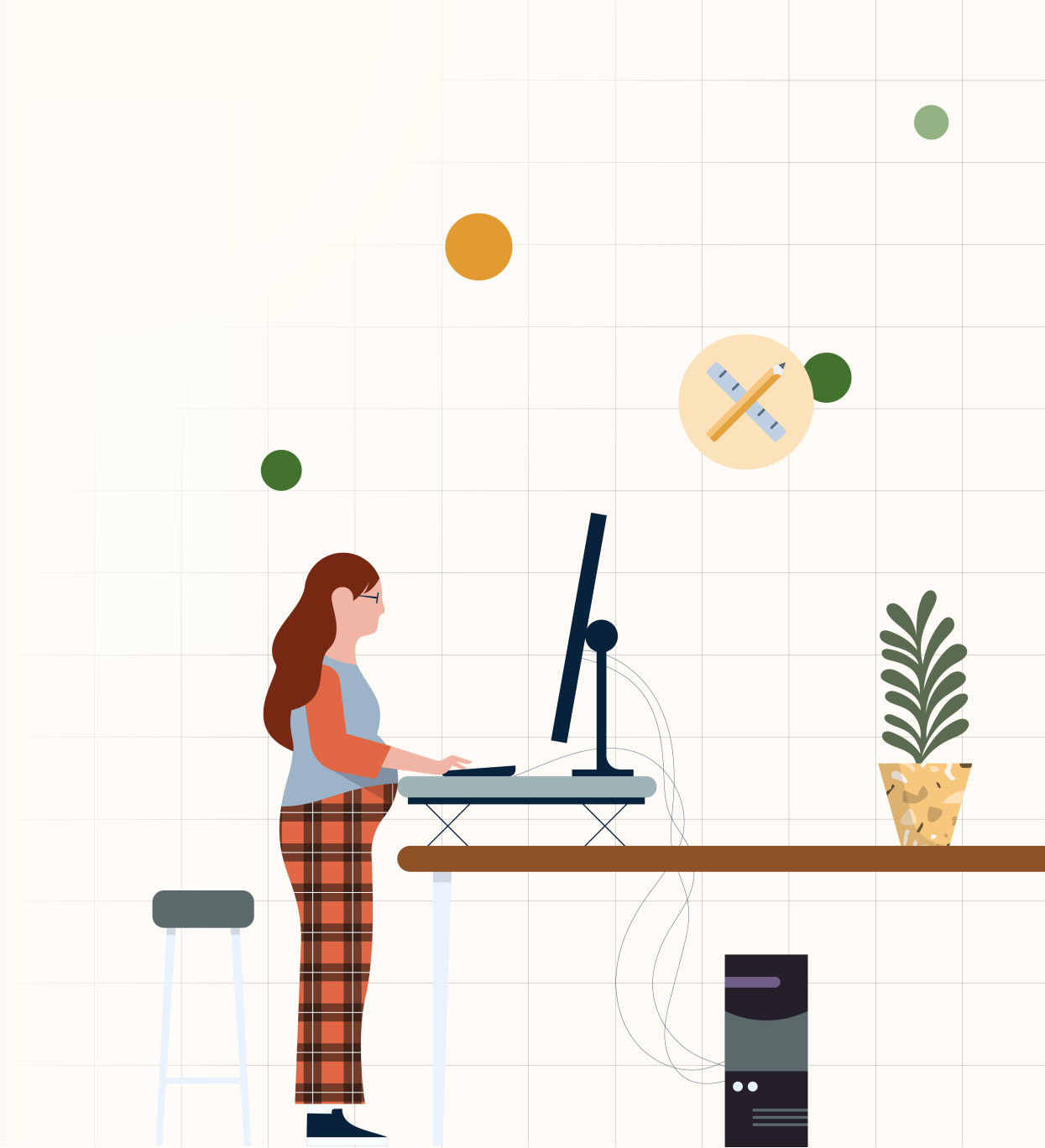
Industries struggling to hire could increase their talent pool up to 20x with a skills-first approach

Despite economic headwinds, the ratio of jobs to applicants remains nearly double the pre-pandemic average in several countries.

Even as economies slow, it's likely that these labour shortages will continue to exist in many countries for the foreseeable future. One sign of ongoing labour shortages is that labour force participation still hasn't recovered to pre-pandemic levels.[9] An uneven opening of the economy after the COVID-19 pandemic, in combination with demographic factors and long-term changes in where people live and work, have contributed to the difficulty employers are experiencing trying to find qualified candidates for open roles.

There is no single solution to these challenges. However, we should start by expanding the talent pool to include all workers who have the necessary skills to fill open roles in these industries and by realising people's full potential. This may mean hiring people who have never held that job title before or even worked in that industry before. During times of rapid change, we need to help workers transition to jobs that are in demand and that match their capabilities. If employers could easily find and hire workers based on what they can do without excluding qualified candidates based on proxies like prior job title, workers could transition more efficiently and economies could adapt more quickly.

Note on industry data:

Hiring based on skill data regardless of other qualifications and credentials is not appropriate for every role in every industry. This is particularly true in highly regulated industries like Education and Healthcare that require licensing for many jobs. To ensure our analysis was robust, we only included workers in the skills-first talent pool that have held jobs from which we have observed transitions into the target job. This helps eliminate transitions that may have common skills but are unlikely to occur for a variety of reasons, including licensing or training (e.g., Nurse to Doctor) or large drops in seniority (e.g., Chief Financial Analyst to Financial Analyst).

Moreover, our industry findings include data from jobs across all functions in an industry, not just the ones that are most associated with the industry. In Education, for example, this includes workers at organisations that specialise in, for instance, professional training and coaching, e-learning, and recreation. It also includes support staff such as receptionists, and organisations that build industry tools such as educational technology. In Healthcare, support staff such as office associates, medical billers, and account managers who work at healthcare companies are included, as well as companies that provide goods and services to core healthcare workers, such as medical device companies.

[9] LinkedIn (2023), "Labor markets are holding tight, despite fears of a global recession"
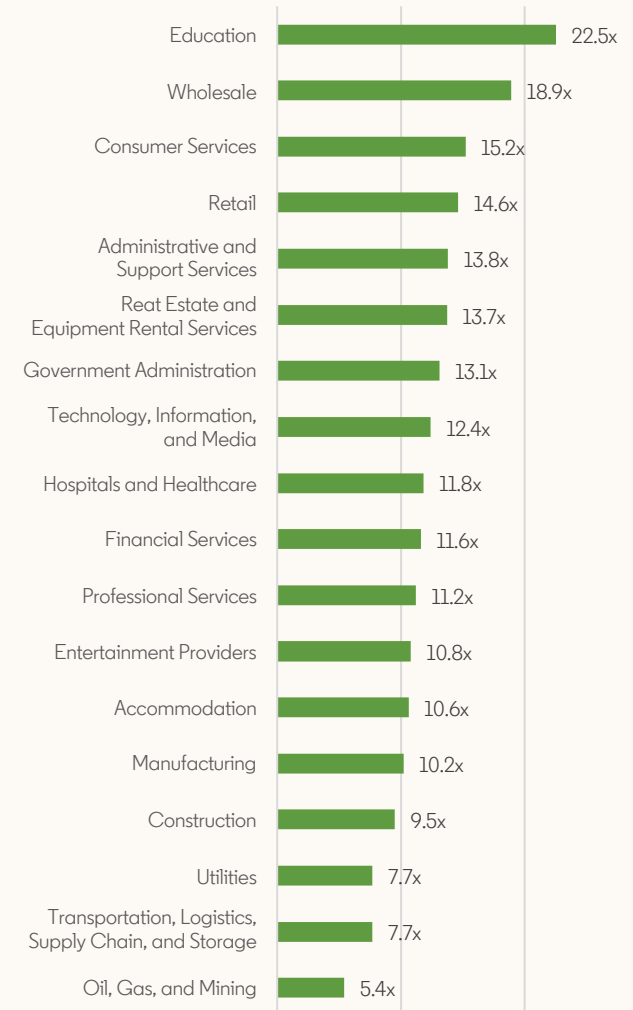
The effect of skills-first hiring on the availability of talent varies considerably by industry (Chart 2). The increase in the number of potential candidates is especially pronounced in industries such as Education, Consumer Services, Retail, and Administrative and Support Services. These industries require skills that may overlap across occupations and industries. This indicates that workers with the necessary job skills are being left out of traditional recruiting efforts because they have not held those jobs or worked in that industry before. For example, in Spain the talent pool for an Accounting Manager in the Professional Services industry can increase by 23x with a skills-first approach.

When looking at industries that have faced recent difficulties recruiting talent that could immediately increase their potential candidates with a skills-first approach, three immediately stand out: Hospitals and Healthcare (11.8x), Accommodation (10.6x), and Manufacturing (10.2x).[10] In industries where training requirements are legally mandated, with a skills-first approach we see

the talent pool expanding for roles within the same discipline or within the same licensing requirements.

While with a skills-first talent search we observe significant increases in the talent pool across all industries, the smallest increases in the number of potential candidates are in Oil, Gas, and Mining (5.4x), Utilities (7.7x), Construction (9.5x), and Manufacturing (10.2x). This may reflect that workers in those industries have more specialised skills, and that there may be a more limited set of pathways to gaining relevant skills for jobs in those industries. For example, in Germany the pool for Logistic Managers in the Transportation, Logistics, Supply Chain, and Storage industry grows by 2x with a skills-first approach — a smaller increase compared to most other occupations, but nonetheless sizeable — and the additional workers brought into the skills-first pool all come from jobs that have at least half of the top 30 skills in common.

Chart 2: Skills-First Talent Pool Increase by Industry

Industry	Increase
Education	22.5x
Wholesale	18.9x
Consumer Services	15.2x
Retail	14.6x
Administrative and Support Services	13.8x
Reat Estate and Equipment Rental Services	13.7x
Government Administration	13.1x
Technology, Information, and Media	12.4x
Hospitals and Healthcare	11.8x
Financial Services	11.6x
Professional Services	11.2x
Entertainment Providers	10.8x
Accommodation	10.6x
Manufacturing	10.2x
Construction	9.5x
Utilities	7.7x
Transportation, Logistics, Supply Chain, and Storage	7.7x
Oil, Gas, and Mining	5.4x

Salma's Journey from Cairo to Working in Tech in Berlin

ReDI School of Digital Integration is a nonprofit technology school in Germany, Denmark, and Sweden providing migrants and marginalised locals with free and equitable access to digital education. ReDI offers courses in cloud computing, data analytics, and cybersecurity among other employability and career readiness topics. This is Salma's story, a graduate of the ReDI school:

Recently, Salma joined a smart-home company in Germany in a Data Analyst position. Salma says, "Looking for a job in Germany can be pretty challenging, especially if one does not have a defined career path. But as soon as one has a clearer vision of what career they would love to have, getting a job is only a matter of time. I would highly recommend students to network frequently and ask for help, and most importantly, not to give up."

" My name is Salma. I have moved from Cairo, Egypt, to Berlin in 2018 and enrolled in a university in Berlin. As a new student who had no idea what she wanted to do for her future career, I joined ReDI for a course in IoT (Internet of Things) to learn more about the tech industry in Germany and diversify my network. My aim was to break into the tech industry by finding an internship and potentially a master's thesis topic to work on. Afterwards, I stayed supporting the IoT course as a teaching assistant."

ReDI School of Digital Integration

Key takeaways

1

It is time to rethink the way we hire and grow talent.

2

Expanding the talent search to include workers with relevant skills means less competition over the same small pool of candidates, more focused hiring as businesses are able to directly match the skills needed for that specific job posting, and it allows companies' hiring practices to keep pace with the changing nature of work.

3

Labour shortages will continue to exist in many countries for the foreseeable future; however, industries struggling to hire could increase their talent pool up to 20x with a skills-first approach.

Skills-first hiring democratises access to opportunity

We believe great talent is everywhere. A skills-first hiring approach is critical to creating equitable opportunities and career pathways for all talent.

Traditional labour market signals have disproportionately excluded particular groups from opportunities, relying even today on old and limited ways of filling jobs and expanding the workforce. This approach leaves out wide swathes of people who have the capabilities businesses need, in particular people from historically underrepresented groups.

Our research shows that adopting a skills-first approach would bring workers without degrees, women, and younger workers into talent pools at a relatively higher rate. This would not only expand the workforce by democratising access to opportunity but also increase the diversity of organisations and the economy overall.

Taking a skills-first hiring approach leads to more workers without bachelor's degrees being considered in the hiring process

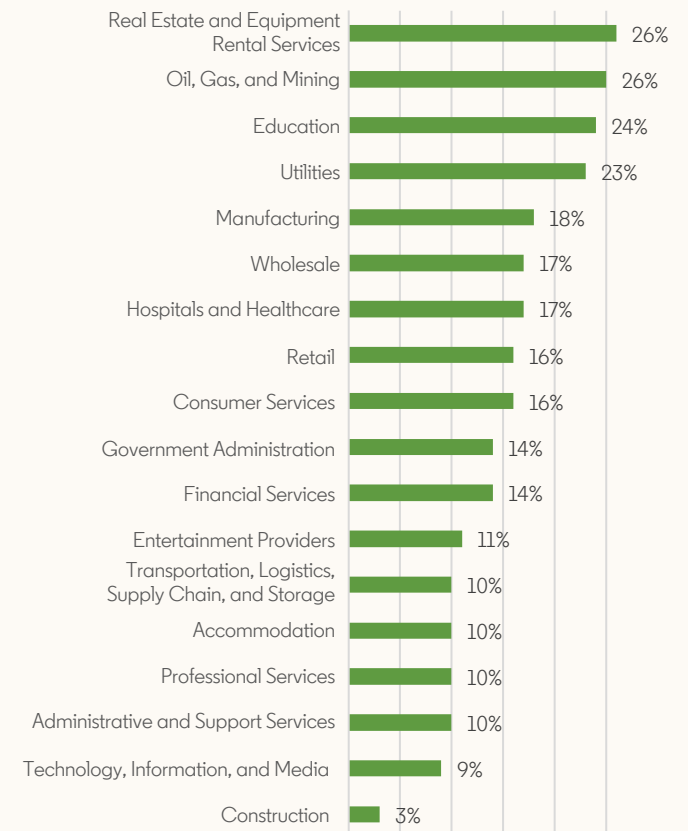A skills-first approach has a varying impact on different segments of the workforce.

Globally, a skills-first approach to hiring, on average, increases the talent pool of workers without bachelor's degrees by 9% more than for workers with degrees (8.5x compared to 9.3x). This figure rises to as much as 26% for some industries.

The impact of different groups also varies by country.[11] The countries with the greatest differences between the skills-first talent pool increase of workers with and without bachelor's degrees are: Brazil (22%), Peru (18%), Spain (17%), Turkey (15%), Germany (15%), and Portugal (15%). Countries like the Netherlands (14%), Sweden (12%), and France (12%) would experience a more moderate but still significant increase. This indicates that in those countries, there may be a higher proportion of workers

without bachelor's degrees who have not previously held a specific job title, but have the relevant skills to perform that job. Including those workers in the talent pool provides them with new opportunities while also giving employers more candidates to recruit from. And the results could be truly transformational. Only in a handful of countries did we observe essentially no increase in the skills-first pool for workers without bachelor's degrees relative to workers with those degrees: Slovakia, Luxembourg, and New Zealand.

Not only does the skills-first talent pool for workers without bachelor's degrees vary by country, but the impact of taking a skills-first approach also trends differently by industry (Chart 3). Real Estate and Equipment Rental Services; Oil, Gas, and Mining; and Education would experience the biggest increase of potential candidates without bachelor's degrees by including skills in their recruiting process. There could be a few reasons for this.

Chart 3: Skills-First Talent Pool Increase for Workers Without a Bachelor's Degree

Industry	Percentage
Real Estate and Equipment Rental Services	26%
Oil, Gas, and Mining	26%
Education	24%
Utilities	23%
Manufacturing	18%
Wholesale	17%
Hospitals and Healthcare	17%
Retail	16%
Consumer Services	16%
Government Administration	14%
Financial Services	14%
Entertainment Providers	11%
Transportation, Logistics, Supply Chain, and Storage	10%
Accommodation	10%
Professional Services	10%
Administrative and Support Services	10%
Technology, Information, and Media	9%
Construction	3%

It may be that some of these industries have traditionally included degree requirements on their job postings and only considered candidates who have held similar job titles before. They may have therefore excluded workers who have the right skills for the job but did not have the desired degree or direct experience.

Construction (3%) would experience the smallest increase of workers without a bachelor's degree in the talent pool if they looked beyond prior job title. This may mean that most workers who have the top-listed skills for a job in Construction would be considered in the hiring process regardless of whether they have a bachelor's degree. This makes sense, given that as an industry, Construction has not historically required bachelor's degrees for many jobs. For example, if you search for potential candidates using the job title Construction Site Manager and 100 workers come up in the search, 17 of those workers don't have a bachelor's degree. However, that proportion is similar to what you would get when searching for candidates based on a specific skill for that occupation: one of the top Construction Site Manager skills is Industrial Safety, and 25 out of 100 workers who list that

skill have a bachelor's degree. When you expand the search to include skills and not just job title, you will still see an increase in the number of workers in your pool without a degree, but the increase is smaller than it would be for a job search in other industries, such as Education (24%).

The Technology, Information, and Media industry would experience a slightly higher (9%) increase of workers without a bachelor's degree in the talent pool if they looked beyond prior job title. While at the lower end of the spectrum, a nearly 10% uplift for Technology, Information, and Media is nonetheless significant, especially considering the uniquely dynamic nature of the industry. For example, say you search for a Data Scientist in France based on job experience and 100 workers come up in the search. On average, around 2 out of 100 won't have a bachelor's degree. Then if you search for a specific skill for that occupation, like the programming language Python, now 8 workers on average show up who don't have a degree. You still see an increase in the number of workers in your pool without a bachelor's degree, but the increase is smaller than it would be for a job search in other industries.

With a skills-first approach, more women are included in talent pools, especially in occupations where women are underrepresented

A skills-first approach enhances the presence of women in talent pools, particularly in occupations with currently minimal representation of women. We define occupations where women are most underrepresented as those occupations that are in the bottom quartile for their country in terms of share of women employed in the last five years. These occupations span industries, but are most concentrated in Technology, Construction, and Manufacturing. In most countries, they include titles such as Engineering Team Lead, Test Engineer, Software Engineer, Solutions Architect, Sales Director, Construction Manager, Supply Chain Supervisor, and Equity Trader.

If companies hire for skills rather than prior job titles, the overall talent pool expands for both men and women at roughly the same rate.

However, in jobs where women are underrepresented, the proportion of women in the talent pool would increase 24% more than it would for men with a skills-first approach.

This would increase women's participation in the workforce mainly because the pool of women workers has a lot of transferable skills that are not considered when hiring managers rely on traditional hiring methodologies. The lack of representation in certain jobs may not be due to a shortage of women with relevant skills, but may be caused by the biases propagated by hiring based on direct experience.

For example, in Germany, Engineering Team Lead has 14% representation of women in the prior job title pool, but has 35% representation in the skills-first pool. If companies were to hire for this role using a skills-first approach, the overall talent pool of women increases by 10x, compared to a 3x increase for men. Overall, the talent pool of women increases 30% more than men in Germany for jobs where women are underrepresented. Sweden would experience an even sharper increase. Overall, the talent pool of women in Sweden increases 41% more than it does for men in jobs where women are underrepresented. For example, in Sweden, only 18% of workers with the title Machine Learning Engineer are women, but women make up 26% of the talent pool based on relevant skills. When companies in Sweden look beyond job titles and hire a Machine Learning Engineer based on skills, the overall talent pool for women increases by 6x, compared to men which increases by 4x. Explore the talent pool increase by gender for more sample occupations in Table 1.

Chapter 2: Skills-first hiring democratizes access to opportunity

Table 1: Skills-First Talent Pool Increase for Women Compared to Men in Some Sample Male-Dominated Occupations

Country	Occupation	Current Representation in the Occupation	Representation in Skills-First Pipeline	Overall Talent Pool Increase for Women	Overall Talent Pool Increase for Men
Belgium	Full Stack Engineer	10%	16%	19x	13x
	Sales Manager	27%	33%	16x	14x
	Software Architect	6%	14%	70x	28x
	Warehouse Manager	17%	28%	15x	7x
Denmark	Full Stack Engineer	10%	15%	25x	19x
	Sales Manager	21%	28%	15x	11x
	Software Architect	4%	13%	105x	41x
	Warehouse Manager	16%	33%	12x	5x
France	Full Stack Engineer	13%	20%	16x	10x
	Sales Manager	36%	43%	16x	13x
	Software Architect	7%	21%	122x	39x
	Warehouse Manager	19%	33%	56x	24x
Germany	Full Stack Engineer	13%	18%	30x	21x
	Sales Manager	24%	28%	10x	9x
	Software Architect	6%	17%	86x	25x
	Warehouse Manager	13%	24%	40x	16x
Ireland	Full Stack Engineer	15%	20%	29x	22x
	Sales Manager	27%	37%	14x	10x
	Software Architect	6%	20%	174x	57x
	Warehouse Manager	7%	13%	6x	4x
Italy	Full Stack Engineer	21%	25%	15x	13x
	Sales Manager	31%	39%	8x	6x
	Software Architect	16%	24%	64x	44x
	Warehouse Manager	21%	36%	10x	5x
Netherlands	Full Stack Engineer	12%	15%	22x	18x
	Sales Manager	20%	29%	13x	10x
	Software Architect	4%	15%	89x	29x
	Warehouse Manager	10%	22%	23x	9x

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Table 1: Skills-First Talent Pool Increase for Women Compared to Men in Some Sample Male-Dominated Occupations
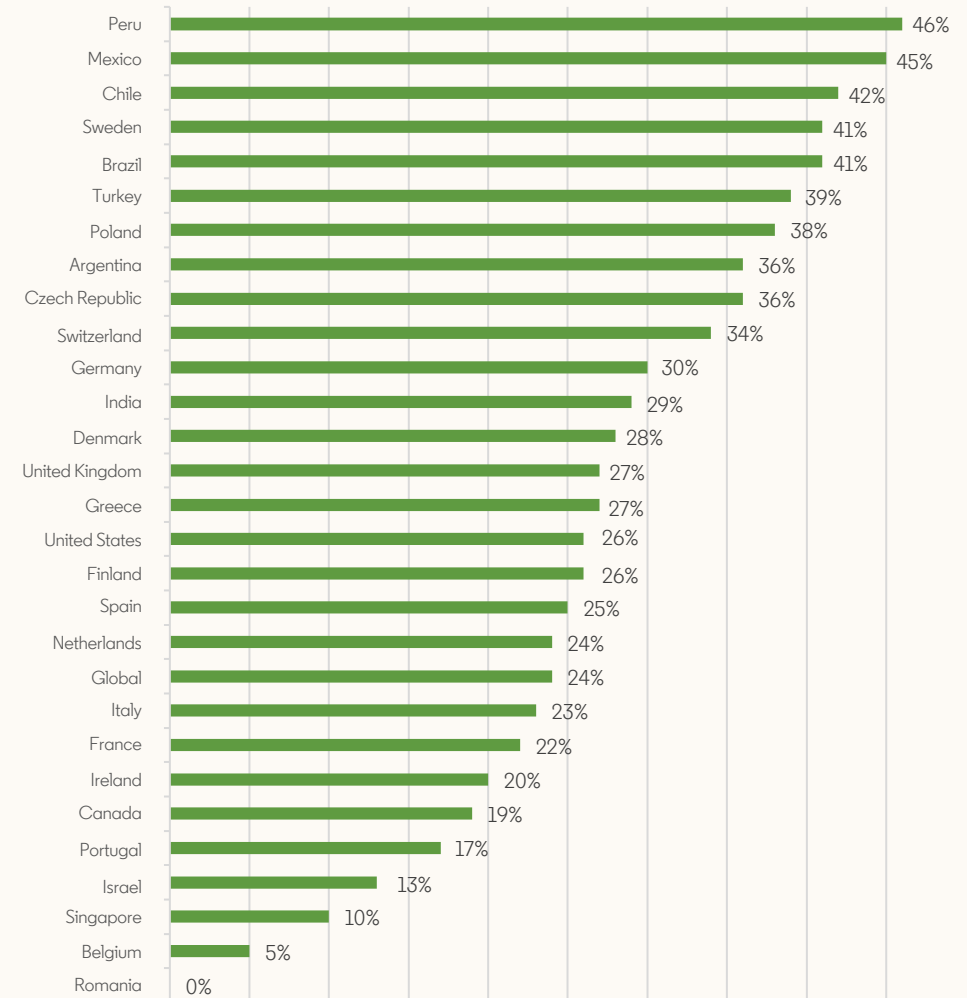
Country	Occupation	Current Representation in the Occupation	Representation in Skills-First Pipeline	Overall Talent Pool Increase for Women	Overall Talent Pool Increase for Men
Poland	Full Stack Engineer	8%	15%	25x	13x
	Sales Manager	33%	47%	13x	9x
	Software Architect	4%	15%	164x	44x
	Warehouse Manager	16%	40%	15x	5x
Spain	Full Stack Engineer	12%	17%	16x	11x
	Sales Manager	32%	35%	12x	10x
	Software Architect	6%	17%	128x	41x
	Warehouse Manager	13%	27%	38x	14x
Sweden	Full Stack Engineer	17%	20%	20x	16x
	Sales Manager	26%	29%	11x	10x
	Software Architect	7%	17%	107x	39x
	Warehouse Manager	19%	32%	7x	4x
United Arab Emirates	Full Stack Engineer	19%	24%	27x	18x
	Sales Manager	18%	24%	7x	5x
	Warehouse Manager	7%	17%	22x	10x
United Kingdom	Full Stack Engineer	15%	19%	6x	5x
	Sales Manager	27%	40%	8x	5x
	Software Architect	6%	18%	214x	86x
	Warehouse Manager	12%	27%	10x	4x

Among male-dominated jobs, women in Peru (46%), Mexico (45%), and Chile (42%) would experience the largest differences in talent pool expansion for women compared to men if a skills-first approach were implemented. Among the European countries listed, those most affected would be Sweden (41%), Poland (38%), and the Czech Republic (36%). Of the countries considered, only Romania does not show a significant gender difference in the impact of skills-first hiring. While there are several jobs where skills-first hiring would improve the representation of women, there are some notable examples where the effect would not be as stark as in other countries. For example, only 24% of women in Romania have the skills needed to fill a Software Engineer role, a job that is male-dominated: 70% of Software Engineers in Romania are men. Even if employers looked at candidates beyond prior job title, they would find few eligible women candidates.

Employers in industries hoping to increase female representation should expand their talent search to include all workers with relevant skills, not just prior job title. Job postings should also clearly list skills in the description, as women are more likely to apply if they see a match between their skills and those on the job posting. Early results from our Skills Match feature show that more women are encouraged to apply when they realize they have the right skill sets. When job seekers were shown how their skills overlapped with a job posting, the increase in women applying was 1.8x the increase we observed in men, with a similar impact on hiring outcomes.

Chart 4: Skills-First Talent Pool Increase for Women Compared to Men in Male-Dominated Occupations
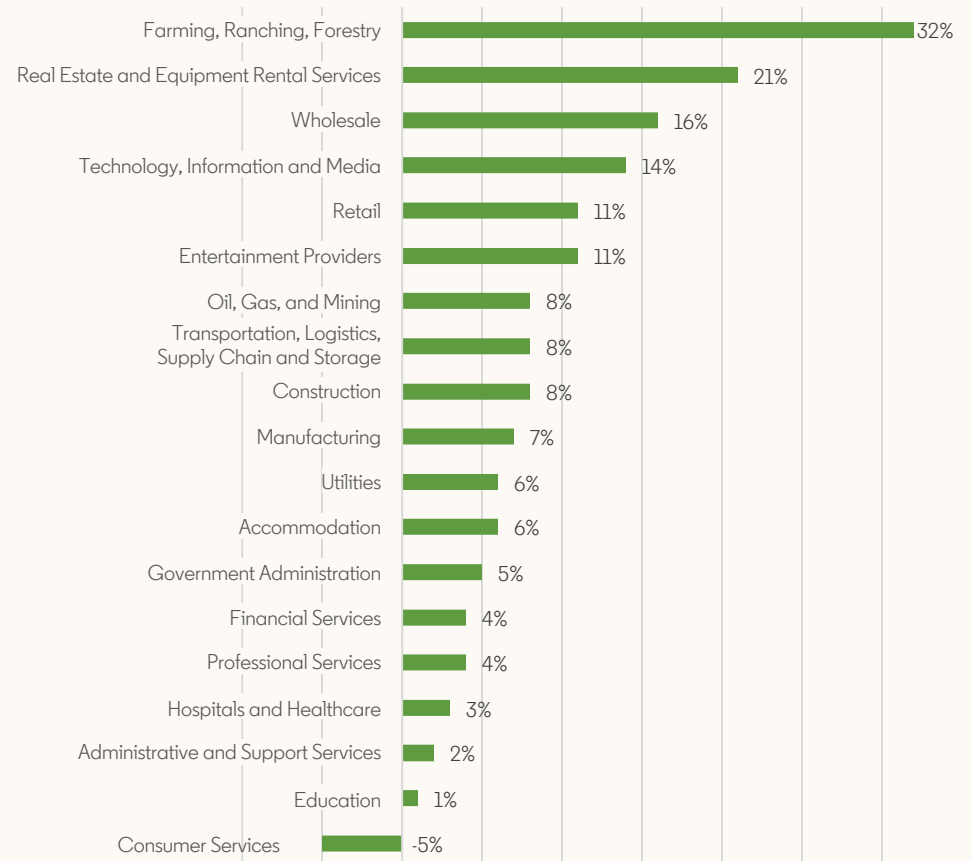
Country	Value
Peru	46%
Mexico	45%
Chile	42%
Sweden	41%
Brazil	41%
Turkey	39%
Poland	38%
Argentina	36%
Czech Republic	36%
Switzerland	34%
Germany	30%
India	29%
Denmark	28%
United Kingdom	27%
Greece	27%
United States	26%
Finland	26%
Spain	25%
Netherlands	24%
Global	24%
Italy	23%
France	22%
Ireland	20%
Canada	19%
Portugal	17%
Israel	13%
Singapore	10%
Belgium	5%
Romania	0%

Chart 5 shows how women could experience a very large increase in talent pool representation when compared to men in some industries: Farming, Ranching, and Forestry (+32%); Real Estate and Equipment Rental Services (+21%); and Technology, Information, and Media (+14%). The following chart considers all occupations within a given industry, not just those where women are underrepresented.

If employers in the Technology, Information, and Media industry took a skills-first approach to hiring, the talent pool would expand for both men and women, but it would expand 14% more for women. This finding has important implications for achieving gender parity while filling critical jobs in the industry. While many governments are funding development in the Technology, Information, and Media industry, many roles remain unfilled. In member states of the European Union, for example, the 9 million Information and Communication Technology specialists employed in 2021 do not meet the tech talent needs of businesses and organisations and also fall short of the EU target to have 20 million ICT specialists by 2030.[12] One reason for this mismatch is the significant gender gap in the industry. While the rate of women working within technology companies is close to parity, the rate of women working within in-demand technical roles, such as developers, is much lower.[13] Despite significant improvements in recent years, the technology sector also has one of the worst track records for hiring more men than women in leadership positions: as of 2022, only 24% of global technology leadership roles are held by women.[14] While there is still work to be done to ensure more women acquire the skills they need to enter these roles, hirers can currently expand the talent pool by considering women candidates who already have the right skills even if they haven't had the "right" job title.

Chart 5: Global Women Talent Pool Increase by Industry Compared to Men

Industry	Increase
Farming, Ranching, Forestry	32%
Real Estate and Equipment Rental Services	21%
Wholesale	16%
Technology, Information and Media	14%
Retail	11%
Entertainment Providers	11%
Oil, Gas, and Mining	8%
Transportation, Logistics, Supply Chain and Storage	8%
Construction	8%
Manufacturing	7%
Utilities	6%
Accommodation	6%
Government Administration	5%
Financial Services	4%
Professional Services	4%
Hospitals and Healthcare	3%
Administrative and Support Services	2%
Education	1%
Consumer Services	-5%

Magen's Transition from Hospitality and Retail Worker to Human Resources in the US

After a brief stint in the hospitality industry post-graduation, Magen was let go in 2020 due to the pandemic. She started a retail job working at the retail chain Target, and after a while, began thinking of how she could pivot. She used LinkedIn to network with people who worked in Human Resources, and analysed the skills they listed on their profiles to see which skills she possessed already that could transfer over. She updated her profile to reflect that and had her skills endorsed by her former employer. It all paid off when a recruiter came across her updated profile and ended up offering Magen her first job in Human Resources at a real estate company.

" I want to give a special thank you to my bosses for not only extending this opportunity to me, but also providing me with the training and resources I need to succeed in my role. I finished my second week yesterday and I couldn't feel more at home!"

Marina's Life-long Career Opportunities in Education

A teacher and learner by heart, Marina has enjoyed her career as a kindergarten teacher as well as living in different countries with her family. With her adult children settling in Australia, she knew it was an opportunity to begin a new chapter in her life.

She settled down in Sydney and for a while she worked for a daycare as an educator. During the COVID-19 pandemic, she understood how important childcare was for families during this turbulent time and remained working even though she was asked to leave her apartment because others feared she was becoming contagious.

Marina was in her 50s and was ready for a career change. She was focused on the transition she wanted, but wasn't quite sure how to get there. The transition would take one year and Marina credits Dress for Success with helping her get there. The mission of Dress for Success is to empower women to achieve economic independence by providing a network of support, professional attire, and the development tools to help women thrive in work and in life.

Marina took part in several workshops and a mock interview, and qualified for Dress for Success Sydney's coaching program which she says was the "cherry on the cake." She learnt valuable interviewing techniques and the importance of using LinkedIn to build her presence and for networking, but most importantly, she felt connected with a community of women all rooting for each other.

The process would reaffirm Marina's self-worth and change her approach towards life. Eventually, this support led to multiple interviews, one of which soon became her permanent full-time role that she plans to keep until retirement. She now works for a Learning Management System company, supporting other educators with their transition to the world of online and in-person hybrid education. Marina loves her job, and she is able to combine her passions for learning, teaching, and technology.

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SYDNEY

"**Thanks to Dress for Success I was able to be confident and have the clarity of what path to take… People at Dress for Success believed in me when I was not believing in me. Their support was paramount for my career change and to achieve and land the role I have now. I am very fortunate and very thankful.**"

Younger workers are in the best position to take advantage of a skills-first future

While the latest entrants to the workforce have not yet had the time to hold a variety of roles the way that older workers have, younger workers are nonetheless building skills that can be relevant to a range of jobs — especially those jobs of lower seniority. Shifting to a skills-first approach may allow younger workers more flexibility as they navigate changing labour market conditions through their career, offering opportunities to build resilience against shocks that may force career pivots.

Globally, a skills-first approach to hiring increases the talent pool for Gen X workers by 8.5x, 9x for Millennial workers, and 10.3x for Gen Z workers. While there may not be many Gen Zers who have held relevant job titles for a given role, there are many Gen Zers who have worked in jobs that require similar skills.

Worker Generation Definitions
- Gen Z: 1997 – 2012
- Millennial: 1981 – 1996
- Gen X: 1965 – 1980

On the other hand, a shift to skills-first may also mean that older workers will have to adapt to a world where more fluid career paths and less conventional job transitions are the norm, or else risk getting left behind. Governments and business leaders should develop programs to ensure that older workers not only learn the relevant and rapidly changing skills they need for the future, but that they also learn how to signal those skills to employers who are increasingly adopting a skills-first approach. Companies would benefit from having an engaged workforce of committed, long-term employees with applicable skills. A skills-first approach would help make the workforce more equitable, expanding opportunities for skilled workers without relying on degrees.

Table 2: Overall Talent Pool Increase by Generation

Country	Overall Talent Pool Increase for Gen X	Overall Talent Pool Increase for Millennial	Overall Talent Pool Increase for Gen Z
Austria	4.4x	4.5x	5.1x
Belgium	7.5x	7.4x	8.1x
Brazil	16.7x	18.2x	20.3x
Canada	9.6x	10.4x	11.6x
Denmark	5.7x	5.7x	5.7x
France	9.1x	10.0x	11.2x
Germany	7.6x	8.2x	9.6x
Global	8.5x	9.0x	10.3x
Ireland	5.2x	5.6x	6.2x
Italy	10.2x	10.7x	11.3x
Luxembourg	2.8x	3.1x	3.5x
Netherlands	10.8x	11.4x	13.8x
Poland	7.1x	7.2x	9.4x
Singapore	5.7x	6.1x	7.0x
Spain	10.5x	10.9x	12.6x
Sweden	6.4x	7.3x	8.7x
United Arab Emirates	7.9x	8.6x	10.6x
United Kingdom	9.3x	10.3x	11.1x
United States	18.0x	18.6x	21.5x

Sierra's Pathway to Becoming an IT Support Technician

Sierra Bentley was interested in technology for as long as she can remember, but even as a little girl, she was told there may not be a place for her. This is still true today, as research reveals that women of colour (Black, Latinx, and American Indian women) only make up 5% of the tech industry in the US.[15]

Sierra nevertheless persisted. She enrolled in NPower, a national tech training nonprofit that offers free 23-week tech fundamental courses, and creates pathways to economic prosperity by launching digital careers for military veterans and young adults from underserved communities throughout the US. NPower offers training for in-demand technology jobs, including those in information technology, cybersecurity, cloud computing and more. And graduates experience a 316% salary increase on average as a result. Through NPower, Sierra earned her CompTIA A+ certification, which led her to the vital apprenticeships and opportunities that helped her enter the tech industry.

After two internships in tech accelerators and education districts, she became a Help Desk Technician in the government software industry in the US state of Michigan. Today, Sierra is a certified IT Support Technician and a problem solver all around, whether it's offering tech advice or underscoring the harsh realities of being a Black woman in the tech industry on LinkedIn.

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Key takeaways

1

Globally, a skills-first approach to hiring, on average, increases the talent pool of workers without bachelor's degrees by 9% more than for workers with degrees.

2

In jobs where women are underrepresented, the proportion of women in the talent pool would increase 24% more than it would for men.

3

A skills-first approach to hiring increases the talent pool for Gen X workers by 8.5x, 9x for Millennial workers, and 10.3x for Gen Z workers.

Recommendations for accelerating the shift to skills-first hiring

The challenges we face as we struggle to fill roles, weather economic shifts, and create a diverse and resilient workforce will grow unless we change our approach to finding and growing talent.

We're still in the early days of the paradigm shift to skills-first, but the findings in this report suggest a skills-first labour market can benefit both employers and employees in the long run. Even amid today's more uncertain economic conditions, businesses are realising the competitive advantages of taking a skills-first approach to hiring. By using skills in their talent search, businesses can achieve a more focused hiring strategy and build a more resilient, more diverse, and more engaged workforce.

A skills-first model to pinpoint new talent and grow existing talent is a more equitable and efficient way of doing things. It will not only open more doors for more women, people without bachelor's degrees, and workers of all ages, but it will also help them stay engaged.

We have a unique opportunity today to change the way we hire and make skills count for more. And with the collective effort and support of policymakers, business leaders, and workers across the globe, we believe we can create a talent ecosystem that is more efficient and more equitable.

How can we collectively deepen and accelerate this transition to a skills-first approach to talent? The following section sets out the concrete steps that policymakers, businesses, and workers can take to adopt, foster, benefit from, and advocate for a skills-first approach.

Policymakers: Support skills-first hiring to open up new opportunities for workers while ensuring critical parts of our economy are staffed.

- **Reconsider education and work requirements on government job postings,** including those contracted through third-party vendors. Include provisions in public procurement contracts to consider candidates without these traditional credentials to foster skills-first hiring in government.

- **Improve coordination between policymakers and stakeholders** — including businesses, social partners, civil society, and education providers — to develop skills-first hiring approaches. Ensure skills policy is part of the development of new policies of any kind, particularly when they have an economic or industrial focus.

- **Support a robust policy framework** that fosters coordination and collaboration among governments with a view to improving the recognition of skills across borders and sectors.

- **Improve engagement and collaboration** with all relevant stakeholders to better understand the needs of the labour market and develop strategies to address current gaps. Include stakeholders in all stages of training policy development and implementation.

- **Be ambassadors for skills-first hiring.** Publicly recognise companies that are using skills in the hiring process and are creating new opportunities for workers left out of a hiring process based on traditional credentials alone.

- **Improve funding for training related to in-demand skills and match workers to growing jobs.** Partner with public education, training providers, and workforce programs to support the teaching of skills that are in demand by employers, as well as to understanding whether recent graduates and job seekers are being placed in growing jobs.

- **Expand funding for incumbent employee training,** particularly for workers most likely to be displaced due to changing skill demands. These programs must offer flexibility to allow workers to reskill and upskill themselves while being employed — for example, through online learning and micro-credentials.

Business Leaders: Expand and diversify your talent pool with a skills-first strategy.

- **Understand the skills your organisation has and needs.** Every role at your organisation can be broken down into a set of skills, and every person — whether at your organisation or as part of an external talent pool — has a set of skills. Only once organisations know what skills are required to do the jobs at their company today and what skills are needed for tomorrow can they create a plan to find and/or develop people with those skills.

- **Embrace skills-first hiring practices, externally and internally.** Put skills at the centre of recruitment and internal hiring, where open roles are defined by the skills needed to do the job and people (including those already at your company) are matched and assessed based on their capabilities. Consider hiring people with transferable in-demand skills, including workers from outside of your industry. Taking this skills-first approach to hiring can lead to more women, people without bachelor's degrees, and workers of all ages being considered in the hiring process.

- **Develop employees to grow with your company.** Empower employees to advance in their careers at your organisation by providing guidance on internal career paths, and by offering opportunities to build and apply new skills and knowledge that align with their career goals and your business needs to fuel employee engagement and retention.

Workers: Find and stand out for jobs you are interested in by developing and showcasing your skills.

- **Gain skills for the job you want.** Create a list of open positions you'd like to apply for and the skills needed for those positions. If you look at jobs on LinkedIn, the Skills Match feature will display the skills you have that match the job posting's requirements, and the skills you may need to learn to get hired. You can also use LinkedIn's free Career Explorer tool to help you find possible job transitions, based on insights into skills similarity. Once you have a solid list of skills needed, make a plan to learn these new skills, whether that's through taking online courses or certificate programs, finding opportunities to learn in your current job, or through volunteer opportunities.

- **Build in-demand skills.** To help you stay even more relevant and adaptable with the skills employers are craving, focus on skills that remain in demand year over year.

LinkedIn has created a list of in-demand skills featured in 78% of global job postings since 2015. This includes soft skills like leadership, communication, and problem-solving and hard skills like digital marketing, financial analysis, and business development. This list also contains top skills by industry so you can focus on learning the right skills in your unique job function.

- **Invest in keeping your skills sharp.** Take stock of your skills on a regular basis, and consider learning options that work for you, including new courses and training. At opportunity.linkedin.com, you can access learning paths mapped to jobs that are in demand and more than 325 quick, actionable nano tips from LinkedIn Learning instructors.

- **Highlight your skills on your LinkedIn profile and CV.**
  Nearly half of companies on LinkedIn explicitly use skills to search and identify job candidates on LinkedIn, so it's important to list skills on your profile. Make sure to add relevant skills within specific training, work, or volunteer experiences on your profile to give employers a better sense of the value you can bring to their organisation. Don't forget to highlight soft skills as well as professional certificates. Then, when you search for jobs, you'll see roles that are a strong match based on how your skills line up with those listed in job descriptions.

Appendix

Glossary of key terms and data descriptions

Workforce resilience

The ability to recover and achieve a similar or better labour market outcome with limited losses in worker welfare following an exogenous shock to one's current labour market state (economic slowdown or economic restructuring).

Career pathways

Steps taken to enter or advance within a specific occupation or industry that typically involve a combination of training, education, and other services.

Skills-first approach

An approach to hiring or internal mobility that considers skills and abilities in addition to job titles, companies, degrees, and schools.

Supported by a set of core data terminologies

Our skills data comes from the skills listed on job postings and the skills LinkedIn members add to their profiles.

We use this data to construct the LinkedIn Skills Genome, which forms the basis for our skills analysis. Our skills data is at the scale of millions of workers, which smooths out the noise associated with self-reported skills. We only associate a job with a skill if a very high number of workers have that skill on their profile when they hold that associated job. On average, 30 "top" skills are associated with a given job.

Skills Genome: For any entity (occupation or job, country, sector, etc.), the skills genome is an ordered list (a vector) of the 50 "most characteristic skills" of that entity. These most characteristic skills are identified using a TF-IDF algorithm to identify the most representative skills of the target entity while down-ranking ubiquitous skills that add little information about that specific entity (e.g., Microsoft Word).

Term frequency-inverse document frequency (TF-IDF): TF-IDF is a statistical measure that evaluates how representative a word (in this case a skill) is to a selected entity. This is done by multiplying two metrics:

1. The term frequency of a skill in an entity ("TF").

2. The logarithmic inverse entity frequency of the skill across a set of entities ("IDF"). This indicates how common or rare a word is in the entire entity set.

The closer IDF is to 0, the more common a word is. So, if the skill is very common across LinkedIn entities, and appears in many job or member descriptions, the IDF will approach 0. If, on the other hand, the skill is unique to specific entities, the IDF will approach 1. More details available at LinkedIn's Skills Genome and LinkedIn x World Bank Methodology Note.

Skills: Refers to the 39,000+ skills that are sourced from LinkedIn members (skills explicitly listed on member profiles, or inferred from other aspects of members' profiles, such as job titles, fields of study, etc.) or from job postings. Skills are the main building blocks of the insights in this report.

Skills similarity: The degree of overlap between the most representative skills for each job based on LinkedIn's Skills Genome. The similarity score reflects both the overlap of common skills between two jobs as well as the relative importance of those skills for each job. The similarity score ranges from 0 (no common skills, a difficult transition) to 100 (perfect overlap in skills, easy transition).

Talent pool: The number of potential skilled candidates for a certain job. We consider all active members with valid skill listings, regardless of their job searching status.

Prior job title talent pool: The number of potential candidates considered when hiring for an open job looking at workers who have held that target job title in the past five years. Job titles include exact matches (e.g., an employer is searching for a Recruiter and the worker has experience as a Recruiter) as well as equivalent matches (e.g., the worker has experience as a Recruiting Specialist).

Skills-first talent pool: The number of potential candidates considered when hiring for an open job looking at workers who have held jobs in the last five years with a large skill overlap with the target job, and meet a threshold of similar worker transitions. For example, a Nurse may have a large skill overlap with a Doctor, but that isn't a common transition due to the high level of retraining, so Nurses wouldn't be included in the skill-based talent pool if the open role is for a Doctor.

Skills-first talent pool increase: The ratio of the number of potential candidates for a given occupation identified using a skills-first talent pool approach to the number of eligible workers for a given occupation identified using the direct jobs experience talent pool approach. Country and industry-level aggregates are defined by taking the median talent pool increase across occupations in the given segment.

Jobs or occupations: LinkedIn member titles are standardised and grouped into approximately 15,000 occupations. These are not sector or country specific. These occupations are further standardised into approximately 3,600 occupation representatives. Occupation representatives group occupations with a common role and specialty, regardless of seniority.

Educational attainment comparison

When estimating the talent pool differences for bachelor's versus non-bachelor's holders in Spain, Germany, and Denmark, we compare members who list apprenticeships on their profiles to members who list bachelor degrees or equivalent. In other countries, we compare members who do not list bachelor's degrees or equivalent with those who do.

Geographic coverage

In order to ensure the highest data quality of our analysis, we only included analysis of countries where LinkedIn has the strongest and most representative data. This report is based on insights from 49 countries: Argentina, Australia, Austria, Belgium, Brazil, Canada, Chile, Colombia, Costa Rica, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, India, Indonesia, Ireland, Israel, Italy, Latvia, Lithuania, Luxembourg, Malta, Mexico, Netherlands, New Zealand, Norway, Peru, Poland, Portugal, Romania, Saudi Arabia, Singapore, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Turkey, United Arab Emirates, United Kingdom, United States. We included the majority of these countries in every analysis, but there were six countries where we were not able to report on gender insights due to lack of representative data: Hungary, Iceland, Indonesia, Slovenia, South Africa, Turkey.

Gender analysis

If not explicitly self-identified, we have inferred the gender of members included in this analysis either by the pronouns used on their LinkedIn profiles, or inferred on the basis of first name. Members whose gender could not be inferred as either man or woman were excluded from this analysis.

Only countries where LinkedIn has gender data for at least 67% of members are included in this analysis. This includes all countries in our list except Hungary, Iceland, Indonesia, Slovenia, and Turkey.

We define "occupations where women are most underrepresented" as those occupations that are in the bottom quartile for their country in terms of share of women employed in the last five years.

LinkedIn Economic Graph