

Four for Women

A Framework for Evaluating Companies' Impact
on the Women They Employ



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Executive Summary

What makes a company a good employer for women?

This is a fundamental question for those who want to build, work for, invest in, or purchase goods and services from companies that have a positive impact on women. Surely, one of the most profound and pervasive ways in which companies impact women's lives is through their employment practices. **Good, bad, or ugly – companies have an impact on the women they employ.**

Companies in the United States and many other countries must report publicly the composition of their boards and top management teams. But, can you use this information to tell if a company is a good employer for women? No. As important as we – and many others – think that gender diversity on the board and in the C-suite is, this information does not tell you how women are treated throughout the company, as we explain in more detail below. Nor can you tell from a company's specific policies and practices – its provision of mentoring for women, flexible scheduling, lactation rooms, and the like – whether a company is actually a good employer for women. Perhaps a company has implemented these policies and practices because it currently is a very poor employer for women. Perhaps managers in the company frown on employees who actually make use of the policies and practices.

So, how can you discern whether a company is a good employer for women? We reviewed and synthesized hundreds of academic studies – rigorous, independent, peer-reviewed studies of diverse industries, employers, and locations – to identify the critical outcomes that determine

the impact that a company has on the women it employs. Based on our analysis, we present **Four for Women**, an evidence-based framework to use in evaluating companies' impact on the women they employ.

Companies that meet the *Four for Women* criteria are good employers for women. Their impact on the women they employ is positive and significant.

A company is a good employer for women if:

- 1. It employs a large percentage of women at every level and in every unit of the company;**
- 2. It pays its employees at least enough to avoid poverty, pays equally for equal work, and has no gender pay gap;**
- 3. It supports and protects the health of the women it employs (and the men, too); and**
- 4. It provides satisfying working conditions for women (and for men, too).**

Representation, pay, health, and satisfaction. These are critical outcomes for women. We advance the **Four for Women** framework in the hope that it will contribute to a growth in the number of companies that are good, even great, employers for women.

Introduction

Nearly 50 years ago, Milton Friedman famously asserted that “there is one and only one social responsibility of business – to use its resources ... to increase its profits so long as it stays within the rules of the game.”¹

That was then. This is now. Today, many of us expect businesses to do more than just make a profit. We expect companies to fulfill their social responsibility to their employees, their communities, and the world. Indeed, many of us want the businesses we invest in, work for, and shop from to have a positive impact on the world. We want to align our investments, our work, and our consumer choices with our values. But, finding those businesses can be difficult.

How Can You Tell If a Company Is a Good Employer for Women?

That’s the core question we set out to answer in this report. It is, it turns out, a deceptively simple question – easy to ask and challenging to answer.

To answer this question, one might turn to the many investment firms that have launched mutual funds, exchange traded funds (ETFs) and other investment vehicles designed, according to their marketing materials and websites, to allow you to use a “gender lens” to invest in public equities that advance “gender diversity,” “women’s leadership,” or “the power of women.” Assets under management in such funds have grown rapidly in recent years – from approximately \$100 million in 2014 to more than \$900 million in 2017, according to one recent estimate.² Gender

lens investing in private equity, debt, and venture capital is also on the rise. Reviewing the field in 2017, the Wharton Social Impact Initiative identified 58 gender lens investing funds that had raised and were deploying more than \$1 billion in capital.³ Today the number of funds and assets under management are even higher.

When you look closely, as we have within the Wharton Social Impact Initiative, at the criteria that these funds use to pick companies for investment, you discover that the vast majority of these funds screen or score companies based on the number of women on their board or in their C-suite. Typically, companies with one or more women on the board or in the executive suite are eligible for investment; companies with no women on the board or in the executive suite are not.

For investors whose goal is to support and encourage companies to increase the number of women on the board or in the C-suite, these funds are a great option. But, for investors who would like to have a positive impact on the lives of women throughout the company – not just on the board or in the C-suite – it’s less clear that investing in companies because they have women on the board or in the C-suite is the way to go.

Don’t get us wrong. We’re all for gender diversity on the board and in the C-suite. We think that companies should seek gender and other forms of diversity – and talent and expertise, of course – on their boards and executive teams. But, companies with women on the board or in the C-suite are not necessarily good employers for women. Rigorous research on this topic yields at best mixed results. Some studies suggest that

when women hold positions of power in the company, they foster positive working conditions – better pay, more promotions – for women lower in the company.^{4,5,6} But, other studies of the topic find no evidence to support the claim that when women hold positions of power, women throughout the company have it better.^{7,8,9} Can you be confident that just because a company has women on the board or in the C-suite it is a good employer for women throughout the company? Alas, no.

So, how can you determine if a company is a good employer for women throughout the organization? You might scour company websites to see what they say about women in the company. And, indeed, many companies use their websites to tout their commitment to women. Some companies note their commitment to the United Nations Women's Empowerment Principles. Some highlight programs and benefits for their female employees – a mentoring program, a women's network, or generous maternity leave.

Company websites may inspire and impress, but in the absence of standardized information and hard statistics, it's very difficult to compare companies' employment and treatment of women. Few countries in the world require companies to publicly report detailed statistics regarding the women they employ, their ranks, salaries, and so on.^{4,10} As a result, companies vary a great deal in the information they choose to report.

Indeed, this may be one of the reasons that many gender lens investment funds use the presence of women on the board or in the C-suite as a screen to select companies for investment. In the U.S., publicly traded companies must report the identity of their board members and five most senior executives. Counting the number of women on the board and in the C-suite is thus

straightforward. But, gathering and evaluating information to discern how well a company treats the women it employs? That's not nearly as straightforward.

Building a Framework to Evaluate Companies' Impact on the Women They Employ

To our surprise, when we looked for a research-backed, broadly applicable framework to use in evaluating companies' impact on the women they employ, we couldn't find one. That's why we set out to develop one.

We wanted to build a framework that would make it possible to identify companies that – through their employment practices – are making a positive difference in women's lives. We wanted to build a framework that investment firms could use as a guide in creating funds that invest in companies that are in fact good employers for women. We wanted to build a framework that companies can use as a guide to measure what matters most when it comes to their impact on the women they employ.

We wanted an evidence-based framework. There is a voluminous research literature on women's employment. Rigorous, academic research on women's employment has the power to inform practice – to make a real difference in business practices and women's lives. The findings of academic research allow us to distinguish between ideas and assumptions that are supported by rigorous evidence and ideas and assumptions that are not.

But, amassing, reading, and synthesizing the hundreds of academic studies of relevance

⁴One important and new exception is the United Kingdom. In 2017, the U.K. passed legislation requiring employers with at least 250 employees to report and publish publicly their mean and median gender pay gap in hourly pay, their mean and median gender pay gap in bonuses, the proportion of each gender receiving a bonus, and the proportion of each gender in each pay quartile. In contrast, the United States does not require employers to report this information.

to women's employment is time-consuming – especially for non-academics unused to the precision, length, robustness checks, language, and detail of peer-reviewed academic research. That's where we come in. Housed within a leading research institution and committed to improving business practices, we take seriously our role within the Wharton Social Impact Initiative as “research translators,” communicating the findings of rigorous academic research in the language of business practice.^b

We wanted an outcome-based framework.

We are interested in the outcomes that make a difference for women's lives – the outcomes that tell us whether a company is actually a good employer for women. We know that companies can and do pursue many different strategies – call them “inputs” – to recruit, retain, and manage their workforce. A number of these inputs may indeed make a company a better employer for women as evidenced by positive changes in the outcomes that matter. Some inputs may have no impact on the outcomes that matter – perhaps because employees hesitate to use these inputs, fearing disapproval or backlash. And some inputs may actually make things worse.

Moreover, some companies with the most impressive sounding inputs may actually have poor outcomes for women. A company may have numerous programs and benefits designed to support women in the company, but may have few women in positions of management. It may pay women poorly. It may be an unsatisfying place to work. Look at the inputs and you might think the company is a good employer for women. But, look at the outputs and you may realize it is not. The outcomes matter – whatever the inputs – and so the outcomes are the focus of the **Four for Women** framework.

We wanted a lean but universal framework.

We wanted to build a framework that focused attention on a finite and limited set of outcomes: the outcomes that are most critical in shaping the impact that companies have on the women they employ. And we wanted our framework to be broadly applicable to companies of all sizes, locations, and industries.

With just four key criteria, our **Four for Women** framework is lean. And though we have drawn most extensively on research findings from the United States (where most of the relevant research has been conducted) to develop our framework, we hope and expect that it will be broadly applicable to companies of diverse sizes, industries, and locations.

We wanted a framework that could be measured. In developing the **Four for Women** framework, we kept an eye on measurement. The four criteria we present can be measured quantitatively. Are the underlying source data needed to measure our criteria readily available from companies in the U.S. and around the world? No. Companies are not required to and rarely do share these data with the public. This presents a significant – but, we hope, short-term – barrier to using our framework to quantify how companies stack up on the **Four for Women** framework.

Certainly, many questions remain to be answered and much data gathered to translate **Four for Women** into a rating system for companies. At the end of this report, we describe possible metrics to use in quantifying the impact companies have on the women they employ.

Four for Women is thus a starting point – not an ending point – for better measurement of the outcomes that make a company a good employer for women. Our hope is that the **Four for Women**

^b For those interested in reading some or all of the peer-reviewed journal articles that informed our framework, we have provided extensive endnotes with source references at the end of this report.

framework will help to shape and guide employers' reporting practices going forward – the data that businesses report in order to document their impact on the women they employ. If companies in the U.S. and around the world report data describing their employment of and impact

on women, those who wish to build, work for, invest in, and purchase goods and services from companies that are good employers for women will be able to align their actions with the evidence.

Four for Women: A Framework for Evaluating Companies' Impact on the Women They Employ

To identify the characteristics that make a company a good employer for women, we reviewed hundreds of academic studies of employment conditions, trends, and effects. Building on these studies, we propose the **Four for Women Framework**.

Companies that meet the **Four for Women** criteria are good employers for women. Their impact on the women they employ is positive and significant.

A company is a good employer for women if:

1. It employs a large percentage of women at every level and in every unit of the company;
2. It pays its employees at least enough to avoid poverty, pays equally for equal work, and has no gender pay gap;
3. It supports and protects the health of the women it employs (and the men, too); and
4. It provides satisfying working conditions for women (and for men, too).



REPRESENTATION

A good employer for women employs a large percentage of women at every level and in every unit of the company.



PAY

A good employer for women pays its employees at least enough to avoid poverty, pays equally for equal work, and has no gender pay gap.



HEALTH

A good employer for women supports and protects the health of the women it employs (and the men, too).



SATISFACTION

A good employer for women provides satisfying working conditions for women (and for men, too).

Representation, pay, health, and satisfaction. These four outcomes tell us whether a company is a good employer for women.

Before taking deep dives into the research evidence upon which we've built this framework, we need to clarify a few points about what this report is and isn't.

What This Report Is and Isn't

This isn't an index. It's not a ranking of every company. It isn't a judgment on companies' employment practices or the selection criteria that funds use to choose companies for investment. Companies that do not meet the four outcomes we specify in **Four for Women** are not "bad companies." We are not suggesting that one should not lead, work in, invest in, or purchase goods and services at companies that fail to meet the standards of the **Four for Women** framework. We know that the four criteria we advance are ambitious goals, and they may not inspire or resonate with all employees, all investors, all consumers, or all companies.

Nor is this a roadmap. **Four for Women** specifies the *outcomes* that make a company a good employer for women. But, companies can and will take different routes – making use of different inputs – to achieve these outcomes. The steps that one company takes to increase the representation of women at all levels and in all units of the company may not be necessary or appropriate for every company.

This isn't a zero-sum equation. Companies that are good employers for women are good employers for men, too. We're not interested in heralding companies that are good employers of women but lousy employers of men.

This isn't a statement that women are more important than other groups that may also experience as much or greater disadvantages at work. Indeed, we suspect our framework is broadly applicable to other employee groups in the workplace. Though we have not dug as extensively into academic research on the experiences of other demographic groups in the workplace, we imagine one could substitute, for instance, underrepresented minorities for women in the framework, and use our framework to assess companies' impact on their employees who are underrepresented minorities.

Finally, this isn't a statement that all people are either female or male.¹¹ We use the binary classification of gender throughout this report as this classification has historically guided research and data collection in business and society.

This report is a summary of extensive academic research, and a response to an industry need. It is a framework that we hope will help investors, employers, employees, customers, and other interested individuals understand, explore, and assess what it is to be a good employer for women. It is a suggestion of key outcomes to track to assess a company's impact on the women it employs.

It is a starting point for further conversation, research, and action.

Examining the Research: What Makes a Company a Great Employer for Women?

Representation. Pay. Health. Satisfaction. These are the workplace outcomes that matter for women.

In this section of our report, we take a deep dive into the research findings that have shaped our report – the findings that tell us that the four outcomes that we highlight in **Four for Women** matter.

Representation

A good employer for women employs a large percentage of women at every level and in every unit of the company.

A company can't be a good employer for women – in the way that we define the term – if it employs few or no women. It's not that such a company is necessarily a bad place for women to work. But, a company that employs few or no women touches few or no women's lives through its employment practices. Our goal is to identify companies that have a large, positive impact on women as

employees. So, we start with the criterion that a large percentage of the company's employees are women.

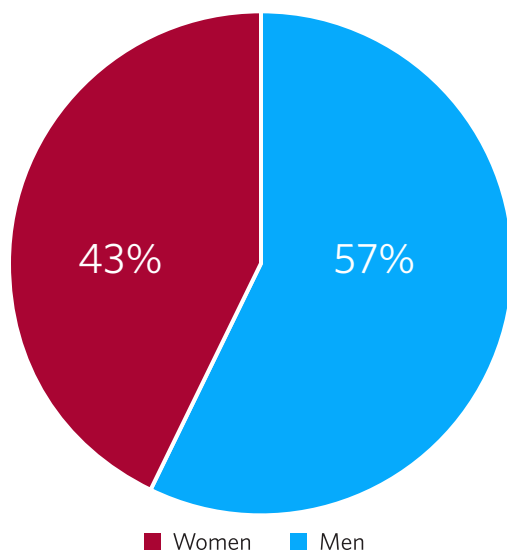
It's not enough, however, for a company to employ a large percentage of women if women work exclusively at the lowest levels of the company or in a few silos. When this is the case, women are denied the influence, opportunities, and resources available to employees in more prestigious and diverse roles in the company. Unfortunately, women in many companies around the world are still underrepresented at the highest levels of the company and in many occupational roles.

Women's Employment: Gains and Underrepresentation

In the last century, women made great gains in employment.¹² In 1900, women made up just 18.3% of the U.S. labor force.¹³ Today, women make up nearly half – 46.8% – of the U.S. labor force. More than half – 54.1% – of women over the age of 16 are employed. For men, the number is higher: 65.8%.¹⁴ Women are more likely – indeed, about twice as likely as men – to work part-time: 24.9% of employed women work

part-time, but only 12.4% of employed men do.^{15,c,16} As a result, while women make up 46.8% of the U.S. labor force, they make up approximately 43% of full-time workers in the U.S.^{17,18} That's a number we will come back to at the end of this section.

Figure 1. Full-Time U.S. Workers by Gender



Source: Bureau of Labor Statistics, United States Department of Labor. Household data, annual averages – 8. Employed and unemployed full- and part-time workers by age, sex, race, and Hispanic or Latino ethnicity. 2017 data. Last updated Jan. 19, 2018. <https://www.bls.gov/cps/cpsaat08.htm>

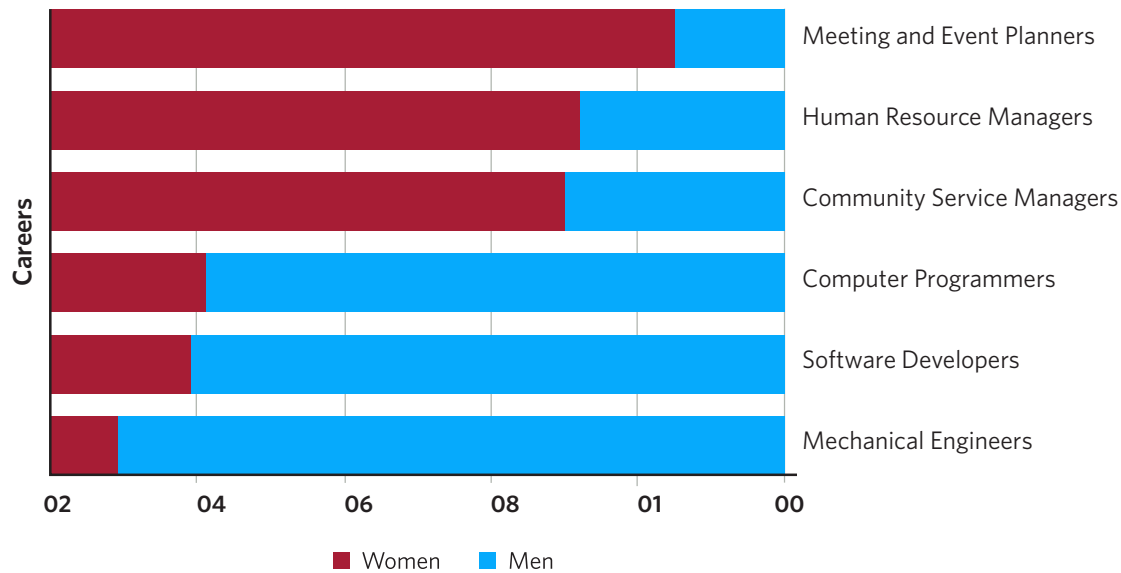
Despite the gains in women's employment over the past century, women remain underrepresented at the highest levels of business. Among the S&P 500 companies, for example, nearly 45% of employees are women. But, women represent just 37% of first and middle-level managers, 27% of executives and senior-level managers, and 5% of chief executive officers (CEOs).¹⁹ The numbers are similar in the largest 1,000 U.S. companies by revenue. In the C-suites of these companies, women constitute 29% of chief marketing officers (CMOs); 19% of chief information officers (CIOs); 12% of chief financial officers (CFOs); and 5% of CEOs.²⁰

Women are also underrepresented in many occupations and overrepresented in others. Although women hold 52% of management, professional, and related occupations in the United States, a closer look reveals considerable gender segregation.²¹ Women represent just 21% of computer programmers; 19% of software developers; and 9% of mechanical engineers, for example.²² In contrast, they represent 85% of meeting, convention, and event planners; 72% of human resource managers; and 70% of social and community service managers. Gender-based occupational segregation is common outside the U.S. as well.^{d,23} Indeed, recent research suggests that in the United States, and in Europe too, about 50% of women (or men) would have to switch jobs in order to achieve equal representation of women and men across all occupational categories.^{e,24,25,26}

^c Similarly, across OECD countries, employed women are substantially more likely than employed men to work part time, with 25.5% of employed women and 9.2% of employed men working part time as of 2017.

^d Within the 20 most-common occupations in the EU in 2016, women represent 89% of personal care workers, 84% of cleaners and helpers, 81% of general and keyboard clerks, and 78% of health associate professionals. In contrast, they represent just 3% of building and trade-related workers excluding electricians, 4% of drivers and mobile plant operators, 4% of metal machinery and related trades workers, and 17% of science and engineering associate professionals.

^e To capture the extent of gender-based occupational segregation in a single number, researchers often turn to the Duncan Index of Dissimilarity. The Duncan Index of Dissimilarity is the proportion of women (or men) that would have to change jobs to achieve perfect gender integration. The Duncan Index ranges from 0 indicating perfect integration to 1 indicating perfect segregation. The Duncan Index has declined in the United States over the last five decades as women have moved into occupations that were previously dominated by men. And, still, the Duncan Index for the United States remains very high. In 2009, the Duncan Index in the U.S. was .51, indicating that just over half of women (or men) would have to switch jobs to achieve gender integration. The Duncan Index for European countries is similar.

Figure 2. Select Occupations in the U.S. by Gender

Source: Bureau of Labor Statistics, United States Department of Labor. Household data, annual averages - 11. Employed persons by detailed occupation, sex, race, and Hispanic or Latino ethnicity. 2017 data. Last updated Jan. 19, 2018. <https://www.bls.gov/cps/cpsaat11.htm>

When women are underrepresented at the highest ranks of the company, their pay and their influence within the company are limited. The same is true, to a considerable extent, when women are siloed into particular roles within the company. “Women’s roles” (jobs within a company or industry that women hold in much larger numbers than men) typically pay significantly less and confer significantly less status than do “men’s roles” of comparable skill and complexity.^{27,28} Unfortunately, this pattern persists in many companies today. In most companies, women are underrepresented at the highest levels of the company and overrepresented at lower levels of the company and in occupational silos (“women’s roles”).^{29,30,31} Companies that break this pattern are outliers. And, in our book, they are particularly good employers for women.

We have suggested that a good employer for women employs a large percentage of women throughout the company such that women are well-represented at every level and in every unit of the company. But, what exactly is a large

percentage? Our answer – our starting point – is 43%. Women make up 43% of all full-time workers in the United States. If women and men were fully and equally represented (as defined by their base rate in the population of all full-time employees in the U.S.), women would make up 43% of all ranks, occupations, businesses, and industries. Forty-three percent is a benchmark – a reference point to use in reflecting on the gender composition of work units, occupations, company ranks, businesses, and industries. If the percentage of women is higher than, lower than, or even exactly 43%, it’s worth asking: How did we get to this number – this percentage of women – and is this where we wish to remain?

Is this standard – strong representation of women at all levels of the hierarchy and in all occupations – one that companies in all industries can achieve? Clearly, the pipeline of talent entering the industry matters. Thus, achieving this standard is much more difficult in some industries – most notably information technology and engineering – than in other industries. We describe challenges

and opportunities for companies in these industries in a special supplemental section called “The Pipeline Problem for Information Technology and Engineering: What Can Companies Do to Strengthen the Representation of Women?” that begins on page 41 of this report.

Pay

A good employer for women pays its employees at least enough to avoid poverty, pays equally for equal work, and has no gender pay gap.

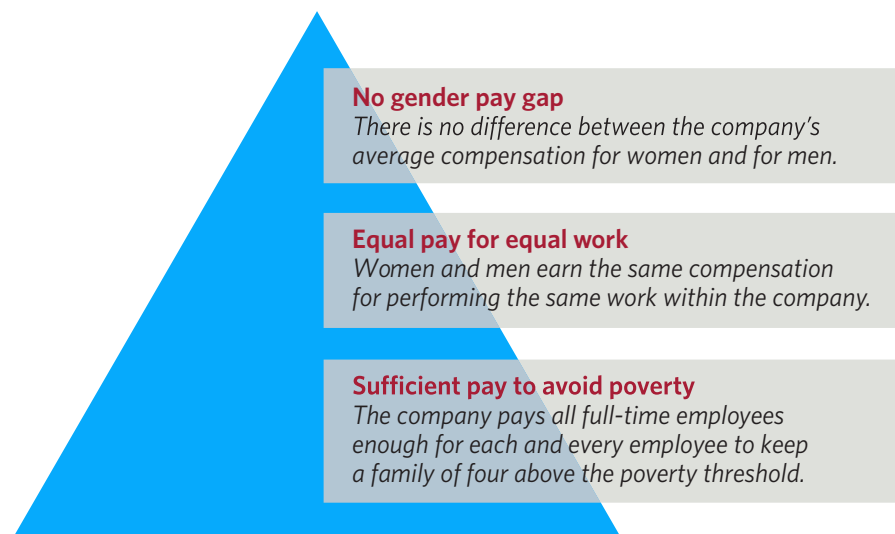
Evaluating how well a company pays its female (and male) employees isn’t straightforward. We suggest three criteria to evaluate a company’s compensation for women – three bars it ought to clear. The first two are relatively easy. The third is more challenging, as evidenced by the failure of the vast majority companies to clear the bar.

Sufficient Pay for Employees to Avoid Poverty

Our primary concern is fairness for women: equal pay for equal work and no gender pay gap (that is, no difference between the company’s average compensation for women and for men). But, a company could pay women and men equally *but poorly*. An employer that does so isn’t a good employer for women or for men. Thus, we start with the most basic criterion when it comes to pay: A good employer pays its employees at least enough for employees and their families to avoid poverty. This, as we’ve hinted above, is a relatively low bar to clear, but certainly an important one.

The dictionary definition of a living wage is “a wage sufficient to provide the necessities and comforts essential to an acceptable standard of living.”³² But, how much money is that exactly? There is no single, widely accepted answer to this question. Indeed, what constitutes a living wage is likely to vary from community to community depending on the cost of living and from household to household depending on the number of workers and dependents at home.

Figure 3. Evaluating a Company’s Compensation for Women



Still, a number of advocates of a living wage use the term to mean the wages or salary sufficient to keep a family of four out of poverty.³³ The U.S. Poverty Guidelines specify that a family of four is poor if its annual income falls below \$25,100.³⁴ A living wage in the United States by this criterion is approximately \$12.50 an hour (\$25,100 divided by 50 weeks, divided by 40 hours a week).^{f,35,36} That's less than the median hourly pay for American workers who have not graduated high school.³⁷ And yet, in 2017, the lowest-earning 20% of U.S. households had incomes of \$24,638 or less.³⁸ In our book, a good employer in the United States pays all of its employees – female and male – wages of at least this amount (and ideally, substantially more) – enough to keep a family of four above the poverty threshold and above the bottom quintile in annual earnings.

Equal Pay for Equal Work

A good employer for women also pays women and men equally for equal work. This is also a fairly basic criterion – another relatively low bar when it comes to evaluating the adequacy of a company's wages and salaries for women. Equal pay for equal work has been the law in the United States since the Equal Pay Act of 1963³⁹; gender discrimination in pay is illegal.^{g,40}

There is, however, no single, widely accepted or legally mandated procedure to assess equal pay for equal work. Different ways of assessing equal pay for equal work yield different conclusions. The more factors controlled for in the analysis, the smaller the observed difference between women's and men's compensation.

For example, a recent analysis of differences between women's and men's pay at Microsoft found that, on average, men in technical jobs earned 8.6% more than women in technical jobs.⁴¹ But, the difference in pay shrinks from 8.6% to 7.4% if one factors in age, pay grade, tenure, location, and performance. It shrinks to 6.3% if one factors in all the previous factors plus department. And it shrinks to 2.8% if one factors in all the previous factors and then compares women and men who have the same job title too.^{42,43,44} To be clear, the last analysis means that one is comparing what Microsoft pays women and men in technical jobs who are the same age and have the same pay grade, tenure, location, performance, department, and job title. Underscoring the complexity of evaluating equal pay for equal work and the different results that emerge from different analyses, Microsoft has reported that women employed by the company earn 99.8¢ “for every \$1 earned by men with the same job title and level in the U.S.” – a difference of .2%.⁴⁵

^fNote that this is different from the minimum wage, which is the minimum amount that employers are legally required to pay their employees. The U.S. federal minimum wage is currently \$7.25 per hour for covered nonexempt employees. The minimum wage is not indexed to inflation and is not automatically adjusted to changes in the cost of living. The U.S. Congress has voted to raise the federal minimum wage at various times, but has done so at irregular intervals, so that the purchasing power of the minimum wage has varied over time. Currently, U.S. 29 states and Washington, D.C., have state minimum wages that are higher than the federal minimum wage.

^gThe U.S. Equal Employment Opportunity Commission's Equal Pay Act is as follows: “The Equal Pay Act requires that men and women be given equal pay for equal work in the same establishment. The jobs need not be identical, but they must be substantially equal. It is job content, not job titles, that determines whether jobs are substantially equal. Specifically, the EPA provides that employers may not pay unequal wages to men and women who perform jobs that require substantially equal skill, effort and responsibility, and that are performed under similar working conditions within the same establishment.” (U.S. Equal Employment Opportunity Commission. “Facts about Equal Pay and Compensation Discrimination.” <https://www.eeoc.gov/eeoc/publications/fs-epa.cfm>)

Figure 4. Equal Pay for Equal Work at Microsoft?

On average, men in technical jobs at Microsoft earn more than women in technical jobs. But, exactly how much more depends on how you run the numbers. The more factors included in the statistical analyses, the smaller the observed difference between men's and women's pay.

The difference between men's and women's pay for technical work is...

- 8.6%** when considering gender only.
- 7.4%** after controlling for employees' age, tenure, pay grade, location, and performance.
- 6.3%** after controlling for all the factors above, plus department.
- 2.8%** after controlling for all the factors above, plus employees' job titles.

These numbers are drawn from an expert report, dated December 5, 2017, by Princeton University Professor of Economics Henry S. Farber in the case of *Moussouris v. Microsoft*: http://microsoftgendercase.com/wp-content/uploads/Microsoft_Dkt_384_Expert_Report_of_Henry_Farber.pdf. See also: <https://www.bloomberg.com/news/features/2018-03-29/the-gender-pay-gap-is-real-say-new-numbers-from-the-u-k>

We've said that equal pay for equal work is a relatively low bar to evaluate the adequacy of a company's wages and salaries for women. Given the measurement issues noted above, perhaps it's more accurate to say that it's a shifting bar – one that gets lower and lower the more factors that are used in the analysis, and thus, the more finely one slices the data.

No Gender Wage Gap

Finally, a good employer for women exhibits no gender wage gap. That is, there is no difference in the average compensation for women and men within the company. This, it turns out, is a tough criterion – a high bar in evaluating the adequacy of a company's wages and salaries for women.

In the 1960s, the gender pay gap in the U.S. as a whole was approximately 40%.⁴⁶ That is, the

average full-time working woman earned 60% of the average full-time working man's pay.⁴⁷ Today, the gender pay gap in the United States is approximately 20%.⁴⁸ But, the gender pay gap varies from company to company, as we note in more detail below.

Decades ago, the gender wage gap was explained largely by differences in women's and men's human capital: Men had more education and more years of work experience than women. Today, the average differences between women's and men's years of education and of work are much smaller. Women in the U.S. are more likely than men to earn college and graduate degrees.⁴⁹ That's true across OECD countries, too.⁵⁰ And yet the gender wage gap persists.

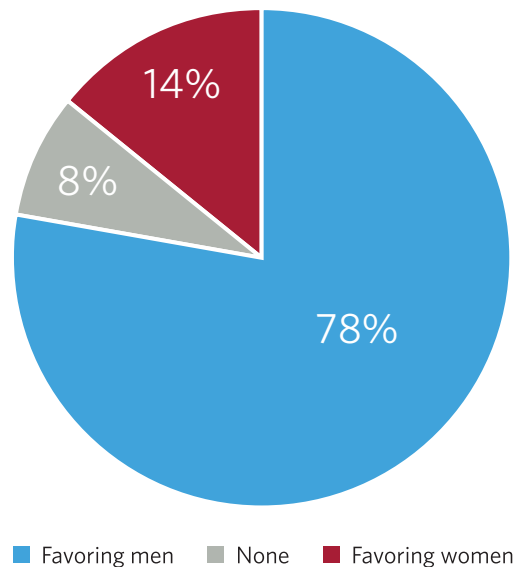
Today, the gender wage gap in the United States and other countries is primarily driven not by differences in women's and men's education or years of work experience, but rather by differences in the occupations and industries in which many women and men work.⁵¹ In short, the persistence of the pay gap reflects the gender-based occupational segregation we noted above, in discussing the first criterion of our framework.

The same dynamic plays out within specific companies as well. The greater the gender-based occupational and hierarchical segregation within a company, the greater the company's gender wage gap. **Even if a company pays women and men equally if they perform the same jobs (i.e., equal pay for equal work, however it is measured), a company's gender wage gap may be very large if women work primarily in lower-paying jobs within the company.**

The United Kingdom provides a powerful test case. Beginning this year, the U.K. has required employers with more than 250 employees to report their gender pay gaps on both their public-facing websites and a government database.⁵² Of the 10,528 companies that reported their median gender pay gaps in 2018, 78% had a gender pay gap favoring men; 8% had no gender pay gap; and

14% had a pay gap favoring women.⁵³ As in the United States, the gender wage gap in the U.K. is substantial: The median pay for men working full time in the U.K. is 18% higher than the median pay for women working full time.⁵⁴ But, in many companies in the U.K., the gender gap is much higher. Indeed, 13% of employers have gender pay gaps of more than 30%.⁵⁵ Companies in male-dominated industries (e.g., finance, construction, and mining) report the largest pay gaps favoring men.⁵⁶

Figure 5. The Median Gender Pay Gap in U.K. Companies in 2018



Source: House of Commons – Business, Energy and Industrial Strategy Committee. "Gender pay gap reporting." Thirteenth Report of Session 2017-19. Printed Jul. 23, 2018. <https://publications.parliament.uk/pa/cm201719/cmselect/cmbeis/928/928.pdf>

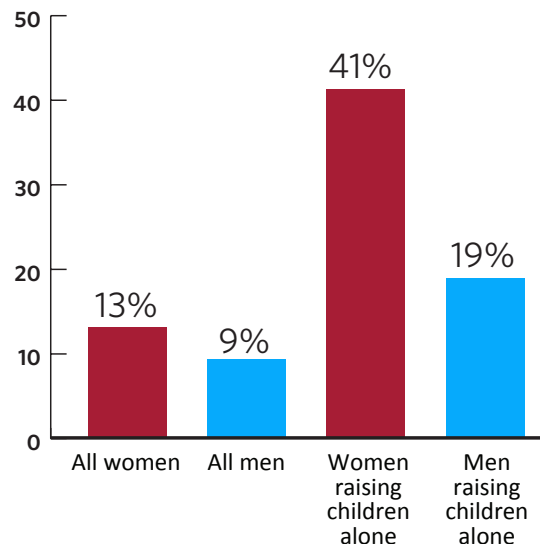
Employers in the United States are not required to report their gender pay gaps.⁵⁷ Thus, it's impossible to describe how the gender pay gap varies among employers in the United States. Some employers in the U.S. choose to report their

gender pay gaps publicly, but it's not always clear how exactly they've calculated their pay gap. Is their reported gender pay gap in fact a calculation of equal pay for equal work? It can be hard to tell.

Pay, Poverty, and the Quality of Women's Lives

Pay matters for the quality of employees' lives. Low paying work, unequal pay for equal work, and the gender wage gap are detrimental to women. And, indeed, women are poorer than men, on average. In the United States in 2017, 9.4% of men and 13% of women between the ages of 18 and 64 fell below the poverty threshold.⁵⁸ Gender differences in poverty are even larger when one compares women and men raising children on their own. In 2017, 41% of households in which a woman lived with and raised children with no

Figure 6. Poverty Rates for Adults in the United States by Gender and Household Status



Source: Fontenot, Kayla, Jessica Semega, and Melissa Kollar, U.S. Census Bureau, Current Population Reports, P60-263, Income and Poverty in the United States: 2017, U.S. Government Printing Office, Washington, DC, 2018. (Note: We report the poverty rates for women and men ages 18-64.)

husband present fell below the poverty threshold. In contrast, 19% of households in which a man lived with and raised children with no wife present fell below the poverty threshold.^{h,59}

Poverty takes a toll on women’s (and men’s) lives. The deprivations, environmental hazards, and stress that people living in poverty experience lead to a host of health-threatening conditions and illnesses. The lower one’s income, the more likely one is to experience hunger,⁶⁰ food insecurity,⁶¹ and disease including arthritis,⁶² diabetes,^{63,64} cardiovascular disease,^{65,66,67} and cancer.⁶⁸ The rich in America thus live longer – a lot longer – than the poor. The life expectancy of men in the top 1% of income in the United States is almost 15 years longer than for men in the bottom 1% of income. For women, the gap in life expectancy between those in the top 1% and those in the bottom 1% is approximately 10 years.⁶⁹

Poverty also increases the likelihood that one will fall victim to violence. The link is particularly strong among women. Women living in households earning less than \$25,000 per year are more than three times as likely to experience rape, physical violence, or stalking by an intimate partner than are wealthier women – women living in households earning more than \$75,000 per year.⁷⁰ And recent, rigorous research suggests a causal link between gender pay inequality and the victimization of women: The greater the reduction in a U.S. county’s gender pay gap between 1990 and 2003 (the years for which data were available), the greater the reduction in domestic violence against women there.⁷¹

Given the tremendous consequences of pay in workers’ lives and the persistence and detrimental consequences of the gender wage gap, we view companies in which (a) all women are paid a

living wage; (b) women and men are paid equally for equal work; and (c) the average woman and average man employed by the company earn the same amount of money as good employers for women.

Health

A good employer for women supports and protects the health of the women it employs and the men it employs, too.

As a general rule, employment is good for your health. On average, women and men who are employed are healthier than those who are unemployed.ⁱ Employment reduces economic threats, helping to move and keep women and men out of poverty.⁷² People who are employed have healthier diets,^{73,74} lower stress,⁷⁵ better mental health,^{76,77} and fewer chronic illnesses than do people who are unemployed.⁷⁸ They live longer,^{79,80} and their children are healthier^{81,82} too.

And that said, workplaces vary tremendously in their effects on employees’ health. A good employer for women at once *promotes* health through the benefits it offers employees – most notably health insurance and paid maternity leave – and *prevents* illness and injury by limiting employees’ risk of and exposure to accidents, injuries, extreme work stress, and sexual harassment.

Health Insurance

The United States’ health insurance system differs dramatically from the health insurance systems of most other developed nations. For example, the U.S. is the only OECD country in which

^hNot surprisingly, there are more than three times as many families consisting of a woman raising children without a spouse present than families consisting of a man raising children without a spouse present (17,776,000 households of the former type and 5,330,000 households of the latter type).

ⁱWe use the term “unemployed” in the same way that researchers and the U.S. government use the term – that is, to denote people who are not currently employed but who are available to work and actively seeking employment.

private health insurance coverage is the primary method of health insurance for the majority of the population.⁸³ Just 35.6% of Americans are covered by government health insurance. In contrast, the median coverage for all other OECD countries is 100%.⁸⁴

In the U.S., 69% of employees who work in private industry receive health care benefits from their employers.⁸⁵ The smaller the private employer, the less likely it is to provide health care benefits to its employees. In 2017, approximately 30% of employers with fewer than 50 employees provided health insurance for their employees, compared with 97% of employers with more than 50 employees.⁸⁶ Roughly equal proportions of American women and men (about 60%) are covered by private health insurance from their own employer or their spouse's employer.⁸⁷ Women are less likely than men, however, to have insurance from their own employer (35% of women vs. 44% of men)⁸⁸, placing more women than men at risk of losing health care if they divorce, if their spouse loses work, or if their spouse dies.

A wealth of rigorous research demonstrates that health insurance improves physical health, improves mental health, and saves lives.^{89,90,91,92} Health insurance increases individuals' access to preventative and primary care, medication, treatment for chronic illnesses, surgery, and mental health treatment.⁹³ Health insurance has a profound impact on the care that pregnant women and their newborns receive.⁹⁴ Uninsured women receive less prenatal and perinatal care,⁹⁵ and are more likely to report difficulty obtaining prenatal care than women with insurance.⁹⁶ Uninsured newborns have worse health outcomes, including

low birth weight, and are more likely to die than those with insurance.⁹⁷

Accordingly, a good employer for women makes health insurance available and affordable for both full-time and part-time employees and their immediate family members. (Health insurance for part-time employees is especially important for women as they are far more likely than men to work part time.) Further, as women face unique health challenges and costs associated with pregnancy and maternity, a good employer for women offers insurance that provides adequate coverage of costs associated with sexual and reproductive health care.

Maternity Leave

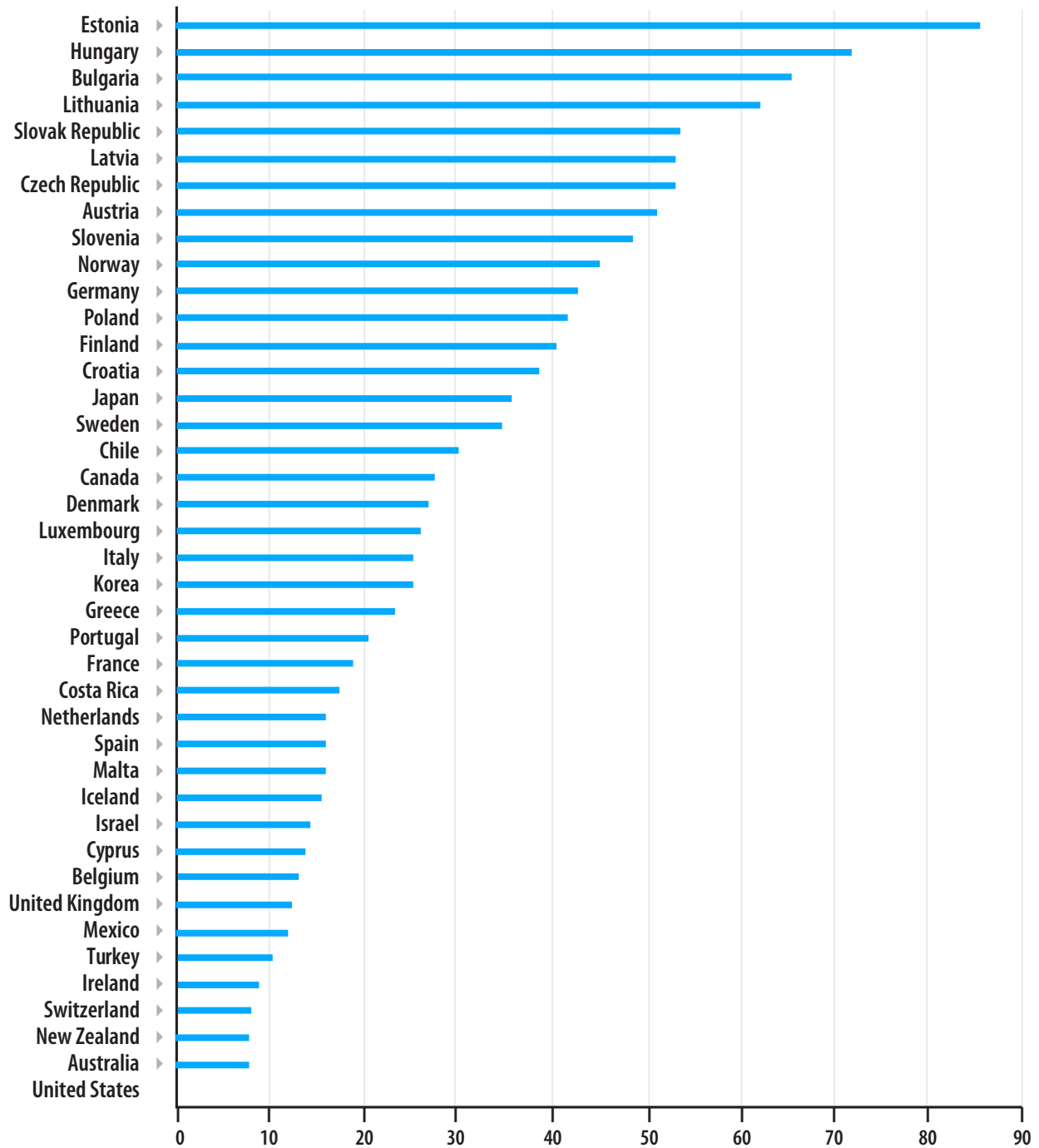
To support and protect the health of its female workforce, a good employer for women also provides paid maternity leave. Unlike all other OECD countries and many other countries around the world, the U.S. does not mandate that employers provide paid maternity leave.^{98,k,99} In the U.S., paid maternity leave is often reported as part of paid family leave, which includes leave around the birth or adoption of a child as well as leave to care for a family member with a serious illness.¹⁰⁰ The majority of employees in the U.S. do not have access to paid family leave.¹⁰¹ As of 2017, only 13% of employees who work in private industry receive paid family leave.^{102,103}

Extensive research both in the United States and around the world shows that paid maternity leave improves the health of mothers^{104,105,106,107} and infants^{108,109,110} and reduces infant mortality.^{111,112,113} Moreover, the positive effects of paid maternity leave are greatest for low-income mothers.¹¹⁴

^j On average, the 36 countries in the OECD mandated 18 paid weeks of paid maternity leave, as of 2016.

^k At the state level, California, Rhode Island, and New Jersey offer paid family leave benefits, which provide employees with cash benefits when they engage in certain family-related responsibilities. New York and the District of Columbia had enacted family-leave insurance programs, that will begin paying benefits in 2020, and Massachusetts has enacted a program that will begin paying benefits in 2021.

^l The Family and Medical Leave Act does entitle certain eligible employees to 12 weeks of unpaid leave per 12-month period for certain family and medical events including childbirth, adoption, caring for seriously ill close family, the employee's serious health concerns, and qualifying exigencies around the employee's close family on military "covered active duty."

Figure 7. Weeks of Paid Maternity Leave Available to Mothers in Select Countries (2016)

Source: OECD: OECD Family Database. Child-related leave. PF2.1 Key Characteristics of parental leave systems. http://www.oecd.org/els/soc/PF2_1_Parental_leave_systems.pdf

In the United States, the women who most need paid maternity leave are least likely to get it.¹¹⁵

Unfortunately, there has been too little research on the effects of paternity leave on men, women, or children for us to offer clear evidence-based statements regarding the benefits of paternity leave – a gap in the research literature that we hope will be filled in the next several years.

Workplace Fatalities and Injuries

Some workplaces present clear, physical dangers to health. The most dangerous jobs, workplaces, and industries are those in which employees work with heavy machinery and/or are exposed to contaminants, disease, and infection. Employees who work as heavy and tractor-trailer truck drivers, farmers, ranchers, and construction laborers face the greatest risk of fatal injury at work.¹¹⁶ Because many more men than women work in these jobs, many more men than women die each year as a result of workplace accidents.^{117,118}

The same pattern emerges for nonfatal injuries. More men than women experience nonfatal injuries at work each year.^{119,120} And that said, some recent research suggests that women actually experience workplace injuries at a higher *rate* than their male colleagues. Researchers studying U.S. aluminum smelter employees found that women were about 36% more likely than men to get injured at work.¹²¹

Nonfatal workplace injuries are common among truck drivers, farmers, ranchers, laborers, but also among janitors, cleaners, and nursing assistants – jobs that many women hold. Consider nursing assistants, for example. There are over 1.2 million nursing assistants in the U.S., 92% of whom are women.¹²² And the number of nursing assistants is expected to grow rapidly in the U.S. and other countries as the population ages. The job is a tough one: In the U.S., nursing assistants earn \$12.89 an hour on average, and are at high

risk of injuries and illness – needle stick injuries, back injuries, injuries from workplace violence, and illnesses caused by exposure to patients' body fluids.^{123,124}

Workplace Stress

Thankfully, the vast majority of employees in the United States (and other countries, too) are not exposed to the dangerous and threatening work environments described above. They are not at risk of sudden death from workplace injuries or homicides. **But, many, many employees experience working conditions that cause stress and damage employees' health in the long-term.** Indeed, a recent, highly rigorous and large-scale study of the effects of employee exposure to workplace stressors on health outcomes and health spending concluded, "We find that more than 120,000 deaths per year and approximately 5%–8% of annual healthcare costs are associated with and may be attributable to how U.S. companies manage their work forces. Our results suggest that more attention should be paid to management practices as important contributors to health outcomes and cost in the United States."¹²⁵

Many women and men find their work extremely stressful. They may experience a layoff or fear losing their jobs. They may be required to work long hours, unpredictable hours, or shift work. They may face nearly impossible job demands – job demands over which they have little or no control. They may find their work environments hostile, lonely, or unjust. All of these workplace stressors, extensive research shows, are associated with poor health outcomes.¹²⁶ Employees who are laid off experience adverse physical and mental health outcomes as a result of their financial stress due to lost income, their isolation, and the loss of the social identity that they experienced when they were employed.¹²⁷ They are twice as likely to have symptoms of depression,¹²⁸ more likely to be in fair or poor

health,¹²⁹ and at increased risk of mortality^{130,131} compared to employees who are not laid off. Similarly, employees who work shift work and experience unpredictable hours are more likely to experience acute occupational injuries,¹³² have higher rates of hypertension,¹³³ are more likely to engage in unhealthy behavior such as smoking,¹³⁴ and are more likely to report poor health¹³⁵ compared to employees who do not work shift work and whose work hours are predictable.¹³⁶ These adverse health outcomes may be due to the impact of shift work on sleep, work-related stress, and conflict between work roles and other roles.¹³⁷

Sexual Harassment

Workplace sexual harassment presents a significant threat to women.^{m,138} The experience of sexual harassment is stressful, traumatic, and disruptive. The greater the sexual harassment a woman experiences on the job, the more likely she is to experience declines in job satisfaction, organizational commitment, work performance, mental health, physical health, and life satisfaction, and the more likely she is to quit her job.¹³⁹

Researchers note that sexual harassment at work takes three distinct forms: sexual coercion; unwanted sexual attention; and gender harassment.^{140,141} Sexual coercion occurs when a harasser makes unwanted sexual advances toward another person and pressures her or him to engage in sexual behavior in exchange for positive workplace treatment (e.g., continued employment, a promotion, a recommendation). *Unwanted sexual attention* occurs when a harasser makes unwanted sexual advances toward another person and pressures her or him to engage in or submit

to sexual behavior, but the coercion and “quid pro quo” of sexual coercion are absent. *Gender harassment* occurs when a harasser makes insulting and degrading comments and gestures (e.g., jokes, crude remarks) regarding another person’s gender, conveying disrespect and hostility for – but not sexual interest in – the target.

How common is the experience of sexual harassment? Estimates vary depending on the measures used to determine the frequency of harassment and the form of harassment in question. Survey measures that explicitly ask women if they have experienced “sexual harassment” yield lower estimates than measures that avoid the label “sexual harassment” but instead ask women whether they have experienced behaviors that are indicative of sexual harassment. When surveys ask women if they have experienced “sexual harassment” per se, approximately 25% of women respond that they have. But, when surveys ask women if they have experienced specific behaviors consistent with unwanted sexual attention and coercion, approximately 40% of women respond that they have.¹⁴² And, finally, when surveys ask women if they have experienced gender harassment, the most common form of sexual harassment, 60% of women report that they have.¹⁴³

When women (and men) who have been the targets of sexual harassment make formal complaints to their supervisors or workplaces, their complaints are often met with minimization (sweeping the complaint “under the rug”), hostility, and retaliation.¹⁴⁴ Thus it is perhaps not surprising that only a very small percentage of individuals who have experienced sexual harassment report their experience to co-workers

^m The U.S. Equal Employment Opportunity Commission defines sexual harassment as “Unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature constitute sexual harassment when (a) submission to such conduct is made either explicitly or implicitly a term or condition of an individual’s employment, (b) submission to or rejection of such conduct by an individual is used as the basis for employment decisions affecting such individual, or (c) such conduct has the purpose or effect of unreasonably interfering with an individual’s work performance, or creating an intimidating, hostile, or offensive work environment” (E.E.O.C., 1980 in Willness, Steel, & Lee, 2007, p. 131).

or supervisors, or press charges.¹⁴⁵ As a result, estimates of the frequency of sexual harassment based on formal complaints are far smaller than estimates based on employees' anonymous or confidential responses to well-established and validated survey measures of sexual harassment.¹⁴⁶

Notably, sexual harassment is not a random event, occurring outside the control of managers and other organizational influences. Organizational climate matters: The more employees perceive that sexual harassment is tolerated in the workplace, the more likely it is to occur.¹⁴⁷ Indeed, meta-analyses and other reviews suggest that an organization's tolerance (or climate) for sexual harassment is one of the strongest predictors of workplace sexual harassment. The greater a company's or work unit's tolerance for sexual harassment, the higher the incidence of sexual harassment is likely to be (and the lower job satisfaction is likely to be).^{n,148}

The gender composition of the workplace matters too: Meta-analyses reveal that the greater the proportion of men in the workplace or the specific job role, the more likely women are to be harassed.¹⁴⁹

Together, these findings reinforce the importance and interrelatedness of the **Four for Women** criteria. The stronger a company's representation of women (the first criterion of our framework), the less likely women are to experience sexual harassment (a core element of the third criterion of our framework) and the more likely they are to feel job satisfaction (the final criterion of our framework).

In sum, the workplace is a key driver of women's and men's health. A good employer for women is one that protects and promotes women's

health. Men's too. Good employers provide health care insurance and maternity leave, too. They also prevent workplace fatalities, accidents, stress, and harassment.

Satisfaction

A good employer for women provides satisfying working conditions for women (and men).

We spend a tremendous amount of our lives at work – according to recent estimates, more than 90,000 hours, or about one-fifth of total waking hours over the course of a lifetime. Those hours should be a source of satisfaction – not of ongoing stress, boredom, frustration, or aggravation. No work environment is perfect, but too many work environments are demeaning, stressful, and ultimately damaging to both health and life satisfaction.¹⁵⁰

Good employers create good working environments for employees – working conditions that employees value and enjoy. In short, if the company is a good employer for women, women's job satisfaction is high (and so, by the way, is men's).

Job Satisfaction

The standard academic definition of job satisfaction is “a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences.”¹⁵¹ Researchers have conducted thousands and thousands of studies of job satisfaction. (A search on Google Scholar turns up more than 90,000 articles, books, and reports

ⁿ A company's climate for sexual harassment, or tolerance for sexual harassment, can be measured reliably and validly by asking a representative sample of the company's employees to indicate, on a confidential or anonymous survey, the extent to which they agree or disagree with survey items such as “A sexual harassment complaint would not be taken seriously” and “Individuals who sexually harass others get away with it.” (Estrada, Armando X., et al. “Evaluating a brief scale measuring psychological climate for sexual harassment.” *Military Psychology* 23.4 (2011): 410.)

with the words “job satisfaction” in the title.)

Suffice it to say that researchers know a great deal about the correlates of job satisfaction. We review some of the most important correlates below – the factors that shape employee job satisfaction. But here’s a preview:

When employees report their job satisfaction, they reflect on all the aspects of their work that are most important to them – the characteristics of their job, their relationships with their boss and coworkers, the organizational climate, their pay, and the stressors they experience, too. This makes a company’s average job satisfaction – what some people might call employee morale – a simple and valuable metric to assess, in broad terms, what it’s like to work at the company. When a company’s average employee job satisfaction is high, a lot of things are going right for employees.

The Correlates of Job Satisfaction

Not surprisingly, **the characteristics of employees’ jobs** matter for job satisfaction. The more **autonomy** employees experience at work, the more satisfied they are.^{152,153,154} Autonomy means that employees have the freedom to make important decisions about what exactly they do on the job, when, and how. They don’t simply have to do as they are told. They have influence. And that makes people enjoy their work. **Job variety** matters for satisfaction, too.^{155,156,157} Employees are more satisfied when their work is not monotonous. They get to do a number of different things on the job.

Bosses and coworkers also matter. The more employees find their boss and coworkers supportive and considerate – rather than threatening, rude, or unkind – the more satisfying

employees find their jobs.^{158,159,160,161} The **boss’s emotional intelligence** makes a difference, too. Job satisfaction goes up when employees report to emotionally intelligent leaders.¹⁶²

The organization as a whole matters: **organizational climate** makes a difference for job satisfaction. Is the organization generally cooperative, friendly, warm, appreciative, and inclusive? Are there opportunities for growth, creativity, and innovation? Does the organization reward, support, and encourage goal achievement – getting things done? Does the organization prevent, discourage, and condemn sexual harassment? Job satisfaction goes up when employees work in organizations whose policies, practices, and norms foster strong, positive climates for social support, growth, achievement, and safety from harassment.^{163,164}

Pay is also positively correlated with job satisfaction – but not as much as one might think.¹⁶⁵ The more money people earn, the greater their job satisfaction. But, this relationship isn’t very strong. Other aspects of one’s work – one’s job autonomy and variety, one’s relationships with one’s supervisor and peers, one’s work stress – are more important in shaping job satisfaction.

Finally, **workplace stress** is bad for job satisfaction. When employees experience the stress caused by excessive demands on their time or competing job demands – in short, when they struggle to meet the demands of their jobs – job satisfaction suffers.^{166,167} **Job insecurity** – the highly stressful fear that one may lose one’s job – is particularly inimical to job satisfaction.^{168,169,170} One doesn’t enjoy one’s job when one thinks unemployment and financial hardship may be around the corner.

Figure 8. Correlates of Job Satisfaction

The larger the circle, the stronger the variable's relationship to measures of job satisfaction.



Women, Men, Job Satisfaction, and Stress

Up to this point, we haven't commented on differences between women's and men's job satisfaction. That's because women actually report higher job satisfaction, on average, than men.^{o,171,172,173,174} So, when we say a good employer

for women provides satisfying working conditions, as evidenced by high levels of job satisfaction, our point is not that women are less satisfied with their jobs than men. Nor do we mean to suggest that the predictors of women's and men's job satisfaction are different. Existing research suggests that this isn't the case.

Rather, our point is that too many women *and* men experience poor working conditions – stultifying jobs, abusive supervision, divisive and dysfunctional organizational climates, low pay, and intense stress. Companies with these characteristics literally make their employees sick: Workplace stress and poor working conditions are associated with increases in coronary heart disease, angina, myocardial infarction, other heart disease, stroke, emphysema, asthma, high cholesterol, diabetes, and arthritis.¹⁷⁵ Poor working conditions also lead to increased health care costs and increased mortality.¹⁷⁶ In short, workplace stress takes a toll – a big one.

In sum, a good employer for women creates the conditions that result in high levels of job satisfaction among women (and among men, too). Jobs are well-designed to provide autonomy and variety. Relationships with bosses and coworkers are positive and supportive. The organization's policies, practices, and norms – and thus its organizational climate – encourage interpersonal support, employee growth, and goal achievement. Pay is adequate or better. And stress is low. These are organizations in which women – and men – can thrive.

^o The finding that women have higher job satisfaction than men has been documented for decades. And it's surprised researchers for decades. There is not a clear, convincing, and well-accepted explanation of why this is the case.

Using the Four for Women Framework to Evaluate Companies: Measurement and Data Access

Peter Drucker famously wrote that “what gets measured gets managed.” There is a lot of truth to this statement. If **Four for Women** can be measured – and we think it can be, though not today – then companies will manage and improve their outcomes for women. We’re for that.

In this section, we explore how companies’ standing on the **Four for Women** framework might be measured, noting possible metrics and data challenges.

In principle, it would not be very difficult to measure how companies stack up against the **Four for Women** framework. That is, it would not be very difficult *if companies reported all the necessary data to calculate relevant metrics*.

In recent decades, researchers have developed reliable and valid measures to quantify many aspects of the representation, pay, health, and satisfaction of women (and men) in the workplace. Combining these measures to represent with a single number, or even a few numbers, a company’s impact on the women it employs presents some challenges. How should different components of the **Four for Women** framework be weighted to create an overarching score or set of scores? Are all of the metrics we propose below necessary to evaluate how a company measures up to the **Four for Women**? What metrics have we overlooked? These are important questions to answer in future work.

But, by far the bigger challenge in using **Four for Women** to quantify employers’ impact on women is gaining access to the underlying data – the data on who is employed in the company, how well they are paid, how satisfied they are with their work, and so on. Companies in the United States and around the world are required to share very little of the underlying data necessary to calculate the metrics we propose.

And, still, we are encouraged by recent changes in legislation and in business norms around the world and in the U.S. that have made data on women’s representation and pay more readily available. Also encouraging are the steady improvements over the past decade in the measurement and reporting of companies’ ESG (environmental, social, and governance) performance. The quality and quantity of the metrics available to assess company performance on non-financial criteria are increasing steadily.

We thus can envision the day when companies’ scores on the **Four for Women** framework will be reported publicly, consistently, and annually. In hopes of speeding that day, we offer our initial suggestions below on possible metrics to quantify companies’ standing on the **Four for Women** framework.

Measuring Representation

A good employer for women employs a large percentage of women at every level and in every unit of the company.

Possible metrics

To capture the extent to which women are represented within the company we recommend the metrics below. Each presents a different take on women's representation within the company.

1. Gender diversity within the company as a whole: The percentage of a company's employees who are female and the percentage who are male.
2. Gender diversity within units of the company:
 - a. Gender diversity within each level of the company: The percentage of a company's employees at each level of the company hierarchy who are female and the percentage at each level who are male.^p
 - b. Gender diversity within each pay quartile and decile of the company: The percentage of a company's full-time employees within each pay quartile and each pay decile who are female and the percentage who are male.
 - c. Gender diversity within each major division of the company: The percentage of a company's employees within each major division of the company who are female and the percentage within each major division who are male.
 - d. Gender diversity within each of the major occupations of the company: The percentage of a company's employees within each of the major occupations in the company who are female and the percentage who are male.^q
 - e. Gender diversity within each major job category of the company: The percentage of a company's employees within each major job category of the company (e.g., executives and senior level officials and managers; first or mid-level officials and managers; professionals; technicians; sales people; laborers; etc.) who are female and the percentage who are male.^r

As we noted earlier, the number 43% provides a powerful and thought-provoking benchmark in evaluating women's representation within companies. Women make up 43% of employees working full time in the United States. Thus, when considering a specific company's standing on the metrics above, it may be valuable for current or prospective company executives, investors, employees, and customers to reflect on three questions:

- Do women make up more, less, or exactly 43% of the company or grouping, and why?
- Is women's representation within the company at the level we would hope it would be?
- If not, what steps can be taken to move women's representation within each grouping to a more appropriate level?

At the same time, we recognize that industries differ substantially in their representation of

^p We recognize that companies differ in how they define their internal organizational hierarchy. The next metric we propose (gender diversity within each pay quartile and decile of the company) may therefore facilitate comparisons across companies.

^q We recognize that companies differ in the occupations of their employees. The next metric relies on a standard set of job categories, and thus may facilitate comparisons across companies.

^r To facilitate comparisons across companies, we suggest using a standard set of job categories such as the job categorization scheme (listing ten categories of jobs) from the U.S. Equal Employment Opportunity Commission. (U.S. EEOC. "Job Patterns for Minorities and Women in Private Industry: A Glossary." <https://www.eeoc.gov/eeoc/statistics/employment/jobpat-eeo1/glossary.cfm>)

women. This makes it particularly challenging for companies in some industries (e.g., information technology, engineering, finance) to achieve strong representation of women throughout the company. We want to acknowledge the challenges that companies in these industries face in achieving strong representation of women. And we don't want to let these companies off the hook, suggesting that there is nothing a company can do to strengthen women's representation in an industry in which women are underrepresented. We thus suggest that the representation of women in a company should be assessed on an absolute scale (relative to companies across industries) and on a relative scale (relative to companies in its own industry). For more information on the pipeline challenge in STEM (science, technology, engineering, and math) and steps companies can take to increase the representation of women in their ranks, see the special supplemental section, beginning on page 41: "The Pipeline Problem for Information Technology and Engineering: What Can Companies Do to Strengthen the Representation of Women?"

Data Availability

Companies in the United States are not required to report publicly the data necessary to calculate the metrics above. Publicly traded companies must report the names of their board members and of the top five executives of the company (on their

annual Securities and Exchange Commission Form 10-K). But this information, while allowing an assessment of board gender diversity and diversity among the five top executives of the company, does not allow observers to assess or infer women's representation at every level, major division, and major occupation of the company.

The U.S. government requires companies with 100 or more employees to file a form with the U.S. Equal Employment Opportunity Commission in which companies must report the gender composition and racial composition of employees in each major job category of the company (e.g., executives and senior level officials and managers; first or mid-level officials and managers; professionals; technicians; sales people; laborers; etc.), but these data are not shared with the public.^{177,178}

While some companies have begun to publicly share information (numbers and percentages) regarding gender diversity in the company as a whole and/or in top management,⁵ we know of no company that shares publicly all of the data needed to calculate all five of the metrics recommended above.

In sum, the metrics we have suggested above would shed a great deal of light on women's representation within companies. At least within the U.S., we know of no way to acquire the data to calculate these metrics without a company's voluntary consent.

⁵ For example, see recent reports from Google https://static.googleusercontent.com/media/diversity.google/en//static/pdf/Google_Diversity_annual_report_2018.pdf and Accenture <https://www.accenture.com/us-en/company-diversity>.

Measuring Pay

A good employer for women pays its employees at least enough to avoid poverty, pays equally for equal work, and has no gender pay gap.

Possible metrics

To capture the extent to which a company pays employees enough to avoid poverty and pays women and men equally, we recommend the following metrics:

1. Poverty pay by gender: The percentage of female and male employees whose annual full-time pay is below the poverty threshold to support a family of four.
2. Minimum hourly pay by gender and part-time vs. full-time status: The minimum hourly pay for full-time vs. part-time employees who are female and for full-time vs. part-time employees who are male.
3. Mean and median hourly pay by gender: The mean and median hourly pay for female and male employees.
4. Mean and median bonus pay by gender: The mean and median bonuses paid to female and male employees, as well as the percentage of female and male full-time employees who received bonuses.
5. Mean and median hourly pay by gender and units of the company:
 - a. Mean and median hourly pay by level and gender: The mean and median hourly pay for female and male employees, by level of the company.
 - b. Mean and median hourly pay by division and gender: The mean and median hourly pay for female and male employees, by major division of the company.
 - c. Mean and median hourly pay by major occupation and gender: The mean and median hourly pay for female and male employees, by major occupational group within the company.
 - d. Mean and median hourly pay by each major job category of the company and gender: The mean and median hourly pay for female and male employees within each major job category of the company (e.g., executives and senior-level officials and managers; first- or mid-level salespeople and managers; professionals; technicians; salespeople; laborers; etc.).

We recommend comparing both mean and median pay for women and men because analyses of mean and median pay differences are likely to yield similar but not identical conclusions. The mean is more sensitive than the median to outliers – that is, to the presence of employees with especially high or especially low salaries. In many companies, the very highest earners are primarily men. In such companies, the median gender wage gap may be a good bit smaller than the mean gender wage gap.[†]

[†] Consider Goldman Sachs International (GSI) in the United Kingdom. Earlier this year, GSI reported its mean gender pay gap in hourly pay was 55.5% in the U.K., but its median gender pay gap in hourly pay in the U.K. was 36.4%. That is, men's mean pay is 55.5% greater than women's mean pay, whereas men's median pay is 36.4% greater than women's median pay. <https://www.goldmansachs.com/who-we-are/diversity-and-inclusion/uk-gender-pay-gap-report.html>

We have not recommended a metric to assess equal pay for equal work because there is no single, well-established procedure to calculate such a metric. Different approaches to calculating “equal pay for equal work” come to different conclusions (the shifting bar we noted earlier). Moreover, a close reading of U.S. law suggests that it may be insufficient to take into consideration only employees’ job titles, departments, and other readily available information (e.g., employees’ education, performance ratings, and tenure). Rather, to assess whether female and male employees are paid equally for equal work, one should consider and measure the more granular building blocks of employees’ job content – the skills, effort, and responsibility that their jobs require. Given the complexity of measuring precisely and consistently the extent to which women and men are paid equally for equal work within a company, we focus on the gender wage gap – a less ambiguous metric and a higher bar.

Data Availability

Companies in the United States are not required to report the data necessary to calculate the metrics above. As of 2018, U.S. companies must report their annual compensation for their CEO, the median pay for all employees not including the CEO, and the ratio of the two numbers.¹⁷⁹ In addition, public companies have long been required to report the compensation for top executives including the CEO, CFO, and certain other top executives.¹⁸⁰

U.K. companies with more than 250 employees are required to report each year their mean and median gender pay gap in hourly pay, mean and median gender pay gap in bonus pay, proportion of employees receiving a bonus by gender, and proportion of employees in each pay quartile by gender.¹⁸¹ Companies are required to report this information publicly on their websites and also report the information to the U.K.

government, which makes it available through a public database.¹⁸² Our impression – from reading company websites and stories in the public press – is that the requirement to disclose this information has heightened pressure on companies with large gender pay gaps to justify and reduce these gaps.

Measuring Health

A good employer for women supports and protects the health of the women it employs, and the men it employs, too.

Given the complexity and distinctiveness of the U.S. health insurance systems, and the varied dimensions of employee health that a company may influence, evaluating – with a finite set of metrics – the extent to which an employer supports and protects the health of the women (and men) it employs is a challenge. We propose potential metrics below. Because the health insurance system in the United States is notably different than the health systems of most other developed countries, the metrics that reference health insurance are likely to be relevant to and appropriate for U.S. employers only.

Possible metrics

1. Workplace fatalities, by gender: Number and rate of workplace fatalities for employees in total, for female employees, and for male employees.
2. Workplace injuries and illnesses, by gender: Number and rate of workplace injuries and illnesses for employees in total, for female employees, and for male employees.
3. Employer-sponsored health insurance: Does the employer offer the benefit of health insurance to some or all of its employees?

4. Compliance with Affordable Care Act (ACA): Does the employer offer ACA-compliant health insurance?
5. Health insurance eligibility for full-time employees, by gender: Percentage of full-time employees, by gender, who are eligible to join the company's health insurance plan.
6. Health insurance eligibility for part-time employees, by gender: Percentage of part-time employees, by gender, who are eligible to join the company's health insurance plan.
7. Health insurance eligibility for family members: Does the company allow the spouses and children of employees to join the company's health insurance plan?
8. Contraceptive coverage: Does the company's health insurance plan cover at no cost the entire range of government-approved contraceptives?
9. Paid maternity leave – potential and actual: The number of days of paid maternity leave that the company provides for full-time employees and for part-time employees, and the percentage of full-time and part-time employees who are eligible for this benefit.
10. Workplace stress, by gender: On a reliable, validated, and confidential or anonymous survey measure, the percentage of all employees, of female employees, and of male employees who endorse survey items indicating that they find their work is highly stressful.
11. Employee experiences of sexual harassment, by gender: On a reliable, validated, and confidential or anonymous survey measure, the percentage of all employees, of female employees, and of male employees who report that they have experienced sexual coercion, unwanted sexual attention, and gender harassment, respectively.
12. Organizational climate for sexual harassment, by gender: On a reliable, validated, and confidential or anonymous survey measure, the percentage of all employees, of female employees, and of male employees who endorse (i.e., agree with) survey items indicating that the organization tolerates, rather than takes active steps to prevent and punish, sexual harassment.

The metrics above would provide a great deal of information about a company's impact on the health of the women and men it employs. Missing from the list above, however, is a metric to capture the affordability of the health insurance that an employer offers its employees. We have not included such a metric because the very concept of health insurance affordability is complex, multifaceted, and thus difficult to capture with one or even a few metrics.^u

Health insurance affordability is inextricably linked to health care affordability. If health insurance is affordable but it doesn't make one's health care affordable, the insurance isn't actually helpful. The affordability of a health care can be defined as a household's total out-of-pocket costs divided by its household's total budget.¹⁸³ Out-of-pocket costs include all of the types of health

^u If we have simply overlooked a straightforward way to assess the affordability of health insurance, that would be good news, as we would like to include such a metric.

care expenses that people may face: premiums, deductibles, co-pays, co-insurance, and costs for services not covered by their health insurance plan.¹⁸⁴

The more generous the health insurance plan an employer provides, the lower the out-of-pocket costs to employees. But, employees vary in their health care needs and expenses. Some employees are healthier than others. Some need insurance only for themselves, while others need insurance for their entire family. Employees' personal resources vary too; what is affordable to one well-paid employee may be unaffordable for others. Further, insurance plans vary in the level of coverage that they provide and the different levels and type of costs borne by individuals. For example, consumer-driven health plans generally have lower premiums, but higher deductibles and higher limits on out-of-pocket maximum spending.¹⁸⁵

All of these factors – individuals' health care needs, their personal resources, and the details of their insurance plans – determine the affordability of health insurance. Conceptually, this makes sense, but it does make it a challenge, to the best of our knowledge, to measure affordability with a simple metric.

Data Availability

Companies in the United States and, to the best of our knowledge, around the world are not required to report the vast majority of the data necessary to calculate the metrics above.

In the United States, companies must report data on workplace fatalities to the Occupational Safety and Health Administration. In addition, the U.S. Bureau of Labor Statistics collects data from a representative sample of companies on occupational illnesses and injuries.¹⁸⁶ However, data regarding occupational illnesses and injuries are made available to the public only in aggregate form; company-specific information is not disclosed.

The Medical Expenditure Panel Survey of the U.S. Agency for Healthcare Research and Quality gathers data on a representative sample of companies' health insurance plans.¹⁸⁷ But, again, data are made available to the public only in aggregate form. Similarly, the National Compensation Survey, conducted by the U.S. Bureau of Labor Statistics, gathers data on a representative sample of companies' family leave policies and reports data in aggregate form only.¹⁸⁸

Some companies may, of course, post information about their health insurance plans and family and maternity leave policies on their websites, but companies vary in what information (if any) they post regarding their plans and policies. The lack of company-specific standardized measures in government reports and company websites makes comparing companies' strengths and weaknesses in supporting and protecting the health of their employees very difficult.

Finally, survey data assessing employees' experiences of stress and their perceptions of their organization's climate are not routinely and consistently collected by employers or the government, nor – when collected – routinely shared with the public. Academic researchers have developed rigorous, reliable, valid, and efficient survey measures not only of workplace stress, the experience of sexual harassment, and organizational climate for sexual harassment, but also of related phenomena: job satisfaction, climate for diversity and inclusion, turnover intentions, and more. The challenge in using survey data to assess key dimensions of the **Four for Women** is not in locating (and, as necessary, fine-tuning) survey measures, but rather in ensuring that companies collect survey data in an appropriate and rigorous fashion, and then share their company-level findings publicly. In brief, well-designed and administered employee surveys (a) keep employees' identities anonymous or confidential; (b) generate a sufficiently strong

response rate to represent the entire employee population; and (c) incorporate survey scales that prior research indicates are reliable and valid measures of the constructs (e.g., climate for sexual harassment) in question.

Is it possible to imagine numerous – even the majority of – companies opting to make public the high-level results of their employee survey data? Yes, but obviously this would represent a significant change in business norms and practices. Perhaps most likely would be the use of an independent organization to certify companies as good employers for women (based on appropriately collected survey data) – at least when it comes to employee stress, sexual harassment, climate, and, as we discuss below, job satisfaction.

Measuring Satisfaction

A good employer for women provides satisfying working conditions for women (and men).

Evaluating the last criterion of the **Four for Women** framework may sound challenging, but given the vast amount of research conducted on job satisfaction, measuring job satisfaction is straightforward. Researchers have conducted thousands of job satisfaction studies. In the process, they have identified several job satisfaction measures that work very well – measures that are efficient, statistically reliable, and valid. This means, in a nutshell, that these job satisfaction measures (a) don't take long for employees to complete; (b) are internally consistent and not prone to respondent error; and (c) are significantly correlated with other important outcomes for individuals and organizations.

At the individual level of analysis, job satisfaction is significantly positively correlated, as we have noted, with organizational commitment,

turnover intentions, life satisfaction, and physical health, too. At the organizational level of analysis, job satisfaction is significantly positively correlated with firm productivity, profitability, and long-term stock performance.^{189,190} We would learn a good bit about companies' strengths and weaknesses as employers for women (and men) if they followed best practices in survey research to routinely and regularly collect anonymous or confidential survey data regarding employee job satisfaction.

Possible metrics

1. Job satisfaction, by gender: On a reliable, validated, and confidential or anonymous survey measure, the percentage of all employees, of female employees, and of male employees who endorse survey items indicating that they find their work satisfying.

As we have hinted, most companies do not routinely collect, much less publicly share, survey data regarding their employees' job satisfaction. That is unfortunate. When well designed and well executed, employee surveys yield powerful insights regarding individual and organizational outcomes of importance to women and men, not just as employees but as investors, too. Though we strongly recommend the involvement of survey experts in designing, administering, analyzing, and reporting survey data, it is worth noting that extensive research has documented the reliability and validity of brief measures of job satisfaction, including:

- One-item survey measures such as “How satisfied are you with your job in general?” (to which employees respond using a 1 – 5 response scale)¹⁹¹
- Three-item survey measures such as “All in all I am satisfied with my job,” “In general, I don't like my job,” and “In general, I like working here” (to which employees respond on a 5-point or 7-point agree-disagree scale)¹⁹²

In sum, survey measures of employees' experiences of and perceptions of their work environment are undervalued as sources of information about companies' impact and effectiveness. We learn a great deal when we are able to rigorously assess and compare employees' candid descriptions of their experiences at work.

What about Existing Providers of Company Ratings?

We have emphasized the limited availability of data to calculate the metrics we have proposed to assess companies' standing on the **Four for Women** framework. What about the many companies and organizations that rate companies on their nonfinancial performance – especially those rating companies' ESG (environmental, social, and governance) performance or gender equality?^v What data do they draw on to form their ratings? And can't they assess companies' standing on the **Four for Women** framework already?

The short answer to these questions is that most such ratings providers are focused broadly on ESG and offer limited information regarding companies' performance on the **Four for Women** metrics we have proposed above; existing rating providers face and must work around – to the best of their ability – many of the data-access challenges we have described above; and thus, existing rating providers don't and can't (yet) assess companies' standing on the **Four for Women** framework.

Ratings Providers' Data Sources

The underlying data that existing rating providers use to evaluate companies' ESG performance and

other measures of non-financial performance come, to the best of our knowledge, from three sources: (a) information that is publicly available regarding company personnel, practices, and outcomes; (b) information that companies provide to the ratings providers (e.g., via a survey or interview with one or more company representatives); and/or (c) information that employees provide via employee surveys or comments.

To gather publicly available information about the companies they rate, ratings providers review companies' websites, annual reports, sustainability reports, proxy reports, filings with the government (including court filings), as well as analyst calls and webinars, print and online media stories, and, in some cases, social media comments regarding each company. Some ratings providers rely on human analysts to read and code this information. Others rely on emerging artificial intelligence strategies. Some use a combination of these approaches. Some update their ratings on a daily basis. Others update their ratings much less frequently.

As rich and varied as the public sources of data on companies are, they are limited insofar as companies release much of this information voluntarily and do not typically release thorough, detailed, and comparable information regarding, for example, employees' gender-based occupational segregation, compensation, utilization of maternity leave benefits, stress, sexual harassment, satisfaction, and so on. The reports that companies prepare and make public may thus be limited in the topics they cover and, not surprisingly, be designed to present the focal company in the best possible light. Social media and news reports can be informative (and are typically not under the influence or control of the focal company), but may be “noisy.” That is,

^vBy “rating providers,” we mean businesses and organizations that rate companies' nonfinancial performance. Examples include B Lab, Bloomberg, Equileap, Great Places to Work for All, MSCI, Sustainalytics, and TruValue Labs. Note that our discussion describes trends across most ratings providers, not the practices, strengths, and weaknesses of any specific provider.

social media and news stories may reflect larger social and media trends and the idiosyncratic (and perhaps inaccurate) views and information of the authors. Other sources of public information regarding companies (e.g., court filings describing lawsuits against the company) are more useful in establishing a company's weaknesses (e.g., sexual harassment claims) than company strengths (e.g., low tolerance for sexual harassment).

Some ratings providers rely instead or in addition on information collected directly from companies – typically via an interview with or survey of a representative of the company whose job duties include responding to these kinds of requests. The strength of this approach is that the rating agency may gain access to information that is not publicly available. The weakness of this approach is that it is time consuming, companies may choose not to respond at all or in full to requests for information, and the ratings providers may need to independently verify the information provided (as may be necessary with public sources of data, too).

Finally, some ratings providers conduct anonymous or confidential surveys of all or a sample of company employees. The best systems conduct high-quality surveys of all or a representative sample of company employees.^w The strength of this approach is that, as we have noted, employee survey data can be highly illuminating regarding important differences between companies. The weakness of this approach is that relatively few companies opt into these surveys. (Note that companies must typically pay for their employees to be surveyed by these ratings providers.) Further, employee survey data is great for revealing information about employees'

experiences, satisfaction, and perceptions of the company's climate(s). It is likely to be far less informative regarding other characteristics of the company, including the gender composition of the company, compensation levels, health insurance benefits, and so on.

Ratings Providers: Quality and Correlations

Ratings providers vary in the number of companies they rate; the frequency with which they update company ratings; the number of years for which company ratings are available; the number, variety, and granularity of ratings they provide; and the transparency with which they report the data sources they use in calculating company ratings.

Researchers, analysts, and other observers have noted, and expressed concern, that different providers' ratings of the same dimensions of the same companies – dimensions as broad as “environment” or as narrow as “trade union relations” or even “ethical sourcing of palm oil” – are very weakly correlated.^{193,194,195,196} Why are ratings of the same dimensions of the same companies weakly correlated?

If different ratings providers relied on the same source data to form their ratings, coded the source data identically, and used the same formulas to create summary ratings of companies on the same dimensions, their ratings would be perfectly correlated. But, of course, they don't do these things. Rather, ratings providers: (a) rely on different sources of data to make their ratings; (b) may code even the same sources of data somewhat differently; (c) treat missing data differently;^x and (d) differ in the weights they assign to different elements to form summary

^w Employees' individual identities are confidential or anonymous in such surveys, but the company's identity is known, of course, to the ratings provider.

^x When companies do not provide information regarding some dimensions of their nonfinancial performance, some ratings providers “assume the worst” and give the company the lowest possible score for this dimension, whereas other ratings providers assign (or impute) the mean score for other companies in the industry or sector to the company with missing data.

ratings. Because ratings providers typically regard many aspects of their ratings processes as propriety, they typically do not reveal detailed information about the specific sources of data, coding

processes, or formulas they use to form summary ratings. This, of course, makes it impossible, in many instances, for users of the ratings to know how exactly the ratings were created.

Four for Women: Possible Metrics

Representation

1. Gender diversity within the company as a whole
2. Gender diversity within units of the company, including:
 - a. Gender diversity within each level of the company
 - b. Gender diversity within each pay quartile and decile of the company
 - c. Gender diversity within each major division of the company
 - d. Gender diversity within each of the major occupations of the company
 - e. Gender diversity within each major job category of the company

Pay

1. Poverty pay by gender
2. Minimum hourly pay by gender and part-time vs. full-time status
3. Mean and median hourly pay by gender
4. Mean and median bonus pay by gender
5. Mean and median hourly pay by gender and units of the company, including:
 - a. Mean and median hourly pay by level and gender
 - b. Mean and median hourly pay by division and gender
 - c. Mean and median hourly pay by major occupation and gender
 - d. Mean and median hourly pay by each major job category of the company and gender

Health

1. Workplace fatalities, by gender
2. Workplace injuries and illnesses, by gender
3. Employer-sponsored health insurance
4. Compliance with Affordable Care Act (ACA)
5. Health insurance eligibility for full-time employees, by gender
6. Health insurance eligibility for part-time employees, by gender
7. Health insurance eligibility for family members
8. Contraceptive coverage
9. Paid maternity leave – potential and actual
10. Workplace stress, by gender
11. Employee experiences of sexual harassment, by gender
12. Organizational climate for sexual harassment, by gender

Satisfaction

1. Job satisfaction, by gender

Putting the Four for Women to Work

Clearly there is a great deal of work to be done if companies in the U.S. and around the world are to achieve the standards of **Four for Women**. We are inspired by the tremendous progress that women have made in the workplace over the past century. And, we are mindful of the many challenges that remain.

We hope that the framework we have advanced in **Four for Women**, the empirical evidence that we have summarized, and the metrics we have suggested offer a set of goals – standards of excellence – to which companies will aspire as they build their workforce, their culture, and their employment practices. We envision the day that companies will brag proudly, publicly, and with data that they have achieved the standards of **Four for Women**.

We hope our framework will inspire investors and the larger financial community to think deeply about what it means to “invest in companies that are good for women,” and how precisely to do so. If investors, financial advisors, ratings providers and others begin to query companies about the metrics we have identified above, their queries will motivate action and improvement in company practices and performance.

We hope as well that our work inspires other members of the research community, as it inspires us, to continue to investigate the workplace outcomes of greatest importance for women, and the inputs that drive those outcomes. We have much still to learn about the workplace practices that drive the most positive outcomes for women.

Four for Women is a starting point. It is a call to conversation, to research, and most importantly to action. We have work to do. Onward!

SPECIAL SUPPLEMENT

The Pipeline Problem for Information Technology and Engineering: What Can Companies Do to Strengthen the Representation of Women?

The first criterion of the **Four for Women** framework is representation: a good employer for women employs a large percentage of women throughout the company. For information technology and engineering firms, this is a challenging standard to meet. The pipeline of women pursuing education and careers in information technology and engineering is thin. What's a firm to do to increase the representation of women? We offer some evidence-based suggestions below.

The Pipeline Challenge: Women in STEM

In the United States today, more women than men earn four-year college degrees. But, when it comes to getting a college degree in STEM – science, technology, engineering, or mathematical science (but not social science) – men outnumber women 1.7 to 1.¹⁹⁷ Further, women and men differ in the STEM fields of study that they are most likely to pursue. Women are more likely to major in the natural sciences than in engineering,

math or computer science.¹⁹⁸ In the U.S, in 2015, women comprised 59% of students who earned bachelors' degrees in biological and agricultural sciences; 43% of students who earned bachelors' degrees in math and statistics; 20% of students who earned bachelors' degrees in engineering; and 18% of students who earned degrees in computer science.¹⁹⁹ Both the absolute number of women earning bachelor's degrees in computer and information sciences and the percentage of bachelor's degrees in these fields awarded to women peaked in the 1980s – more than 30 years ago.²⁰⁰

What causes these differences between women's and men's academic pursuits within STEM fields? To some – but only some – extent, the patterns we have described reflect differences in women's and men's interests. Studies of women's and men's vocational interests have found that, on average, women are more interested in “people” (i.e., working with and helping people) than men are and, on average, men are more interested in “things” (i.e., working with things and gadgets). But, even controlling for these differences in women's and men's interests, women remain underrepresented in male-dominated STEM

¹⁹⁷ The gender ratio among STEM degree earners varies depending on how STEM is defined. We use the classification of College Factual, defining STEM as including the following fields: Agriculture & Agriculture Operations, Architecture & Related Services, Biological & Biomedical Sciences, Communications Technologies & Support, Computer & Information Sciences, Engineering, Engineering Technologies, Mathematics & Statistics, Natural Resources & Conservation, Physical Sciences, and Science Technologies /Technicians. College Factual excludes degrees if they could be classified as medical, business, or social science (e.g., psychology). (College Factual <https://inside.collegefactual.com/stories/women-vs-men-in-stem-degrees>)

fields such as engineering and computer sciences and overrepresented in female-dominated STEM fields such as medical services. Notably, all STEM fields require strong quantitative ability. The required level of quantitative ability in a STEM field does not explain observed differences among STEM fields in the percentage of women and men pursuing these fields.²⁰¹

Following graduation, differences between women's and men's pursuits of STEM continue. In short, the pipeline of women entering computer science and engineering fields "leaks." Women constitute 20% of graduates in engineering but just 13% of the engineering workforce.^{202,203,204} As these numbers hint, women who earn engineering and computer science degrees are less likely to pursue employment in these fields than men who earn the same degrees.²⁰⁵ Women who earn degrees in information technology and engineering and go on to enter these fields as employees are more likely than comparable men to leave these fields.²⁰⁶ They are also more likely to switch fields than women in other lines of work.²⁰⁷

Given the limited pipeline of women majoring in engineering, information technology, and math, it is important for firms that hire in these fields and that seek to achieve stronger representation of women throughout their ranks to make a concerted effort to attract, hire, and retain – not turn away – qualified women. Companies' recruiting, hiring, promotion, and other management practices can make a difference.

Overcoming Biases in Recruiting, Hiring, and Promotion

To strengthen the representation of women in their ranks, firms in male-dominated fields and

industries – such as information technology, engineering, and finance, too – can and should take steps to reduce unconscious and unintentional biases in their recruiting, hiring, placement, and promotion of women. Researchers find, for example, that job advertisements for male-dominated jobs use significantly more stereotypically masculine words (e.g., adventurous, competitive, dominant, leader, outspoken) than do job advertisements for female-dominated jobs.² And this wording makes a difference – especially to women. Jobs that are described using stereotypically masculine wording are less appealing to women than the very same jobs described using stereotypically feminine wording (e.g., collaborate, support, together, understand). Conversely, the use of stereotypically feminine vs. masculine wording doesn't make a significant difference to men; men show a slight (but not statistically significant) preference for the jobs when the advertisements use masculine language.²⁰⁸ The bottom line for companies: Get the stereotypical masculine language out of your job advertisements, and your recruiting materials and presentations, too.^{209,210}

Unconscious biases may also enter into and disrupt hiring and promotion process for women. Researchers find, for example, that employers may unconsciously hold female applicants to a different and higher standard than they hold male applicants. In a recent study, employers were almost twice as likely to call back male applicants who had earned a high GPA (grade point average) than female applicants who had earned the same GPA.²¹¹ This disparity was largest for math majors; employers were three times more likely to call back male math majors with high GPAs than female math majors with high GPAs.²¹²

Researchers find similar disparities when they compare women's and men's likelihood of

² In contrast, job advertisements for male-dominated and female-dominated jobs do not differ significantly in their use of stereotypically feminine words.

promotion. Consider the complex, powerful, and frankly worrisome results of a recent and large meta-analysis synthesizing the results of over 100 studies. The researchers found that gender differences in rewards (i.e., differences in salary, promotions, and bonuses favoring men) were nearly 14 times larger than gender differences in performance ratings.²¹³ Performance differences did not explain these differences in rewards. Further, the differences between women's and men's rewards were especially pronounced in prestigious and male-dominated occupations. In these occupations, women and men performed equally, but women received significantly smaller rewards. In industries with a high percentage of women at the executive and senior managerial levels, however, differences between women's and men's performance ratings and between women's and men's rewards were absent.²¹⁴

The implication is clear: If your goal is to reduce gender bias and thereby strengthen women's representation, use hiring and promotion procedures that limit bias and increase fairness. It's helpful, research shows, to review resumes "blind" (that is, after the gender and race of the applicant have been removed).²¹⁵ Along similar lines, standardized interviews, work sample tests, and explicit development opportunities and promotion criteria lead to fairer and more accurate hiring and promotion decisions.^{216,217,218}

Workplace Flexibility: Perhaps a Mixed Benefit

If a tech or engineering firm – or indeed, any firm – seeks to hire, retain, and promote women, should it offer programs that give women (and men) extra flexibility at work – flextime, the option to work reduced hours, the option to take career breaks, and the like? Here, the research evidence is decidedly mixed.

Ideally, companies would allow employees to take advantage of flexibility, while still continuing to advance in their careers. But, the reality is that women often experience a tradeoff between flexibility and career advancement. Research examining cross-country differences among OECD countries found that family-friendly policies such as part-time work entitlements and parental leave increased women's labor force participation rates; women were more likely to stay in the labor force when they could utilize family-friendly policies.²¹⁹ However, these family-friendly policies also increased the likelihood that women would work in lower-level and/or part-time positions rather than in full-time positions as managers or professionals.²²⁰ Research has also found that long periods of paid maternity leave can have a negative impact on women's future earnings.²²¹ Another study found that use of employer-sponsored family-friendly policies such as flexible work hours, reduced work hours, telework, and child care assistance were associated with reduced subsequent wage growth, even after accounting for other productivity-related factors.²²² Utilizing workplace flexibility may have an especially harmful impact on wages for highly-skilled women.²²³

Workers who need or are perceived to need work-related flexibility may be viewed negatively; this is known as "flexibility stigma."²²⁴ While workplace flexibility may be desirable to employees of all genders, women are particularly likely to utilize such policies, and therefore are at greatest risk of being stigmatized.²²⁵ One study found that women who had flexible schedules were viewed as less dedicated to their careers and as having less motivation to advance.²²⁶ Thus, it is not enough for companies to offer opportunities for employees to work flexibly. Companies must also work deliberately and proactively to reduce stigma against employees – often women – who work flexibly.

Not Just Representation: Pay, Health, and Satisfaction, Too

We've noted that the **Four for Women** are intertwined. Low representation of women and, more specifically, gender-based vertical segregation, can lead to biases in rewarding women's performance, and gender wage gaps favoring men. A low representation of women in the organization also increases the risk of sexual harassment; sexual harassment of women is more common in male-dominated work environments than in gender-balanced and female-dominated work environments. Workplace stressors – like layoffs, job insecurity, unpredictable hours, and sexual harassment – lower job satisfaction and may impair health.

In short, the **Four for Women** are reinforcing. That's the bad news and the good news. It's the bad news because weaknesses on one dimension can reinforce and exacerbate weaknesses in the other dimensions. But, it's the good news because improvements on one of the **Four for Women** can lead to improvements in other dimensions. If a company takes steps to improve the pay, work-related health, and satisfaction of women in the company, for example, it's likely to find that women's representation improves too, as more women are attracted to work in the company. This makes company efforts to track and improve the **Four for Women** metrics that we suggest at the conclusion of this report especially important. A company's success in moving the needle up on one metric may well help to move the needle on other metrics, too.

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