Gender

A Study Used Sensors to Show That Men and Women Are Treated Differently at Work

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Marion Barraud for HBR

Gender equality remains frustratingly elusive. Women are
underrepresented in the C-suite, receive lower salaries, and are less likely
to receive a critical first promotion to manager than
men. Numerous causes have been suggested, but one argument that
persists points to differences in men and women's behavior.

Which raises the question: Do women and men act all that differently? We realized that there's little to no concrete data on women's behavior in the office. Previous work has relied on surveys and self-reported assessments — methods of data collecting that are prone to bias. Fortunately, the proliferation of digital communication data and the advancement of sensor technology have enabled us to more precisely measure workplace behavior.

We decided to investigate whether gender differences in behavior drive gender differences in outcomes at one of our client organizations, a large multinational firm, where women were underrepresented in upper management. In this company, women made up roughly 35%–40% of the entry-level workforce but a smaller percentage at each subsequent level. Women made up only 20% of people at the two highest seniority levels at this organization.

We collected email communication and meeting schedule data for hundreds of employees in one office, across all levels of seniority, over the course of four months. We then gave 100 of these individuals sociometric badges, which allowed us to track in-person behavior. These badges, which look like large ID badges and are worn by all employees, record communication patterns using sensors that measure movement, proximity to other badges, and speech (volume and tone of voice but not content). They can tell us who talks with whom, where people communicate, and who dominates conversations.

A Broader Issue: Bias in the Workplace

Questions about gender bias go far beyond any one company.

Research: Objective Performance Metrics Are Not Enough to Overcome Gender Bias

What the Science Actually Says About Gender Gaps in the Workplace

We collected this data, anonymized it, and analyzed it. Although we were not able to see the identity of individuals, we still had data on gender, position, and tenure at the office, so we could control for these factors. To retain privacy, we did not collect the content of any communications, only the metadata (that is, who communicated with whom, at what time, and for how long).

We went in with a few hypotheses about why fewer women ended up in senior positions than men: Perhaps women had fewer mentors, less face time with managers, or weren't as proactive as men in talking to senior leadership.

But as we analyzed our data, we found almost no perceptible differences in the behavior of men and women. Women had the same number of contacts as men, they spent as much time with senior leadership, and they allocated their time similarly to men in the same role. We couldn't see the types of projects they were working on, but we found that men and women had indistinguishable work patterns in the amount of time they spent online, in concentrated work, and in face-to-face conversation. And in performance evaluations men and women received statistically identical scores. This held true for women at each level of seniority. Yet women weren't advancing and men were.

The hypothesis that women lacked access to seniority, in particular, had little support. In email, meeting, and face-to-face data, we found that both men and women were roughly two steps, or social connections, away from senior management (so if John knows Kate and Kate knows a manager, John is two steps from a manager).

Some have argued that women lack access to important, informal networks because they don't reach out to or spend time with "the boys club." But this didn't hold up in our data. We found that the amount of direct interaction with management was identical between genders and that women were just as central as men in the workplace's social network. The metric we used for this is called *weighted centrality*. Centrality can be thought of, at a simple level, as how close someone is to decisions being made, other employees, and the other "power connectors," or individuals with a high number of contacts. *Weighted* centrality takes into account how much time employees spent talking to different people, which we used as a proxy for how strong the relationship is.

If the Behaviors Are the Same, What Explains the Differences in Outcomes?

Our analysis suggests that the difference in promotion rates between men and women in this company was due not to their behavior but to how they were treated. This indicates that arguments about changing women's behavior — to "lean-in," for example — might miss the bigger picture: Gender inequality is due to bias, not differences in behavior.

Bias, as we define it, occurs when two groups of people act identically but are treated differently. Our data implies that gender differences may lie not in how women act but in how people *perceive* their actions. For example, consider female mentorship programs that try to connect high-potential women with management. If women talk to leadership at similar rates as men, then the problem isn't lack of access but how those conversations are viewed.

Bias is not only about how behavior is perceived in the office, but also includes out-of-office expectations. At this company, women tend to leave the workforce in the middle of their seniority, after having been at the company for four to 10 years. This timing presents another possible hypothesis: Perhaps women decide to leave the workplace for other reasons, such as wanting to raise a family. Our data can't determine

whether this is true or not, but we don't think this changes the argument for reducing bias.

If men and women are equal stakeholders in a family, they should presumably be leaving the workforce at the same rate. But this isn't happening. According to McKinsey and LeanIn.org's 2017 gender report, women with a partner are 5.5 times more likely than their male counterparts to do all or most of the housework. However, women are not advancing, while men are. Previous research has also shown that men are perceived as more responsible when they have children, while women are seen as being less committed to work.

What Companies Can Do About It

While programs aimed at strengthening women's leadership skills are valuable, companies also need to focus on the more fundamental — and more difficult — problem of reducing bias. This means trying bias-reduction programs, but also developing policies that explicitly level the playing field. One way to do so is to make promotions and hiring more equal. Significant research suggests that mandating a diverse slate of candidates helps companies make better decisions. A study by Iris Bohnet of Harvard Kennedy School showed that thinking about candidates in groups helped managers compare individuals by performance — but when managers evaluated candidates individually they fell back on gendered heuristics. The result was poorer hiring decisions and more gendered choices (for example, more men were chosen for heavily quantitative roles).

Another potential problem lies in workload. In this company, we measured higher workloads as individuals advanced to higher levels of seniority. This isn't intrinsically gendered, but many social pressures push women around this age to simultaneously balance work, family, and a disproportionate amount of housework. Companies may consider how to modify expectations and better support working parents so that they don't force women to make a "family or work" decision.

Companies need to approach gender inequality as they would any business problem: with hard data. Most programs created to combat gender inequality are based on anecdotal evidence or cursory surveys. But to tailor a solution to a company's specific problems, you need to seek data to answer fundamental questions such as "When are women dropping out?" and "Are women acting differently than men in the office?" and "What about our company culture has limited women's growth?" When organizations implement a solution, they need to measure the outcomes of both behavior and advancement in the office. Only then can they transition from the debate about the causes of gender inequality (bias versus behavior) and advance to the needed stage of a solution.

Editors' note: We have changed some details to anonymize the company studied and have added links to more research on this topic.

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