

# Non-Discrimination Laws Make U.S. States More Innovative

by Huasheng Gao and Wei Zhang

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In 2013 Tim Cook, Apple’s CEO, urged the U.S. Congress to adopt the federal Employment Non-Discrimination Act (ENDA) to ban sexual orientation and gender identity discrimination in the workplace. He argued that it would not only protect the rights of a diverse workforce but also foster innovation: “Embracing people’s individuality is a matter of basic human dignity and civil rights. It also turns out to be great for the creativity that drives our business.” This led us to wonder whether non-discrimination policies, specifically ENDAs, truly foster creativity in the workplace, and, if so, how.

In our research, recently published in *Management Science*, we examine the effect of U.S. state-level ENDAs on corporate patent-based innovation. We looked at data for thousands of firms – almost all U.S. public firms that actively filed patents – from 1976 to 2008. We found that the adoption of ENDAs led to a significant increase in innovation output. On average, firms headquartered in states that passed ENDAs experienced an 8% increase in the number of patents and an 11% increase in the number of patent citations, relative to firms headquartered in states that did not pass such a law. These results start to show up two years after the adoption of ENDAs and largely are driven by firms that previously did not implement non-discrimination policies, by firms that operate in human-capital-intensive industries, and by firms in states with large lesbian, gay, bisexual, and transgender (LGBT) populations.

To provide evidence that the effect of ENDAs is causal, we controlled for a variety of company characteristics (such as size, profitability, and growth opportunities) and state characteristics (such as GDP, population, education, and political balance). We also exploited the fact that economic conditions are likely to be similar for firms across state borders, whereas the effects of ENDAs stop at state borders. We compared a group of firms closely located on either side of a state border, and continued to find a significant increase in firms' innovation after their states pass ENDAs, relative to their close-by neighboring firms.

Why do ENDAs have such an effect? Currently, the U.S. population is divided in its attitudes on LGBT rights. Those who are more likely to be pro-LGBT tend to be younger, better educated, more open-minded, more likely to come from diverse backgrounds, more willing to take risks, and to exhibit a stronger ideological liberalism – traits that correlate with higher creativity. In contrast, those who are older, more conservative, and exhibit a stronger religiosity tend to be anti-LGBT. After a state adopts an ENDA, more pro-LGBT individuals tend to relocate into that state, while more anti-LGBT individuals tend to leave for other states. Our theory is that because the pro-LGBT individuals are likely to be more creative than the anti-LGBT ones, corporate innovation is enhanced.

To check the validity of that conjecture, we tracked the residential addresses of over 600,000 individual inventors from 1976 to 2008. We found that when a state adopts an ENDA, a large number of inventors relocate from other states to that state within three years, and some incumbent inventors in the state relocate to other states at the same time. We also found that the inventors who

moved out of the state mainly moved to states that had not adopted ENDAs and that the inventors who moved into the state were from all over the country, regardless of whether their states of origin had adopted an ENDA.

These results suggest that the enactment of an ENDA triggers a workforce rebalancing. Pro-LGBT employees are more willing to work in the state after it adopts the ENDA, and the opposite is true for anti-LGBT employees. We further show that, at the individual level, the inventors who move in tend to produce 30% more patents than the inventors moving out, which is consistent with the view that pro-LGBT individuals tend to be more creative than anti-LGBT individuals.

In the last few decades, Americans in 22 states have sought and won legal protections against employment discrimination on the basis of sexual orientation at the state level; only 19 states also protect against discrimination on the basis of gender identity. But a federal ENDA has failed to pass in Congress 22 times since 1994. Our research provides evidence that Tim Cook was right. Such legislation is fair, but because it measurably improves corporate innovation, it has real economic effects too.

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