

# Real Effects of Tobacco Alternative Reclassification on Corporate Innovation

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In this paper I seek to explore the causal effects of work-flow continuity on corporate innovation levels. Using tobacco control, and tobacco alternative reclassification as vehicles for analysis, effects of work-flow (dis)continuity on corporate innovation can be identified. By using a combination of analysis from smoke-free laws passed in 2006 and tobacco alternative reclassification legislation in 2016, work-flow continuity is able to be isolated from other factors endogenous to nicotine consumption as the nicotine delivery method of electronic vaporizers does not share in the same health effects and chemical mental-suppressants as traditional tobacco. To this effect, disentangling work-flow discontinuity allows for the direct analysis of the effects these legislative exogenous shocks have on firms' patent and patent citations as proxies for corporate innovation. In the aggregate, work-flow discontinuity maintains a decreasing trend attributed to the decrease in number of smokers for reasons exogenous to this study such as cultural, generational, effects, and thus any significant deviation from this trend can be causally associated with the 2006 and 2016 legislative shocks. Likewise, there is an aggregate increasing trend in innovation attributed to reasons exogenous to this study such as technological, educational, experience, effects, and any significant deviation from this trend can be causally associated with the 2006 and 2016 legislative shocks. The analysis takes place in three phases. Phase one is the pre-trend leading up to, and including, the first shock whereby smoke-free laws (tobacco only) were implemented in 2006. In this phase there is a slow increase in number of patents and patent citations filed which is attributed to expected time-variant growth leading up to a sudden, significant increase in patents and patent citations following smoke-free law implementation. This discontinuity is attributed to work-flow discontinuity, health effects, and chemical mental-suppressants found in traditional tobacco consumption. Phase two is between the legislative shocks. This intermediate phase identifies a demographic shift from traditional tobacco consumption methods to tobacco alternatives such as electronic vaporizers; whereby, this demographic shift sets up the pre-trend for considering the 2016 reclassification of tobacco alternatives. Electronic vaporizer users follow almost identical usage habits as traditional tobacco users which is key in understanding the effects seen proceeding the 2016 reclassification of electronic vaporizers. The 2016 reclassification legislation placed electronic vaporizers under the umbrella of the tobacco product label and therefore were controlled in the workplace in the same manner that traditional tobacco products were in 2006. Phase three shows another discontinuous jump in corporate innovation levels which can be directly tied to work-flow discontinuity separate from other effects of smoking seen after 2006 laws. In this final phase, the effects of work-flow discontinuity can be isolated and observed to be a causal factor measures of patent and patent citation filing as well as productivity per one-thousand workers.