Green Jobs: Recreational Access to Cannabis and Female Entrepreneurship

Jacqueline Doremus, Sarah Stith, and Kathryn Vasilaky

Having a diverse set of entrepreneurs has been shown to increase returns in venture capital settings (Gompers and Wang 2017b). Female and minority entrepreneurs are underrepresented as entrepreneurs and in venture capital (Gompers and Wang 2017a). Underrepresentation seems due, in part, to homophilic tendencies: potential entrepreneurs respond to peer effects (Magnussen and Roed 2017, Hacamo and Kleiner 2018) and investors prefer to invest in entrepreneurs similar to themselves (Gompers and Wang 2017b; Ewens and Townsend 2017; Marom et al. 2016).

In a separate literature studying the choice to compete and gender, a key finding is that men more often choose to compete than women, even when there are no differences in ability across gender (Niederle and Vesturlund, 2007). Competition is modeled as a winner-take-all tournament. This result holds for the most able women in the distribution (Flory et al. 2018) and for outside the laboratory (Flory et al. 2017). Cross-cultural evidence suggests these differences are socialized (Gneezy et al. 2009) and depend on the reproductive lifecycle (Flory et al. 2018).

As far as we know, the role of competition as a reason for low entry by female entrepreneurs has not been explored. We seek to test if the relationship between competition and entry by female entrepreneurs using the emerging cannabis market. Nationally, about 22% of entrepreneurs are female. In the cannabis industry, a trade magazine found that 36% of respondents to a voluntary survey self-identified as women in 2015; by 2017, this figure had fallen to 27%.[1] Consistent with Gompers and Wang (2017a), representation varies across the sector: women are more often represented among consumer-oriented sectors and less among growers and investors.

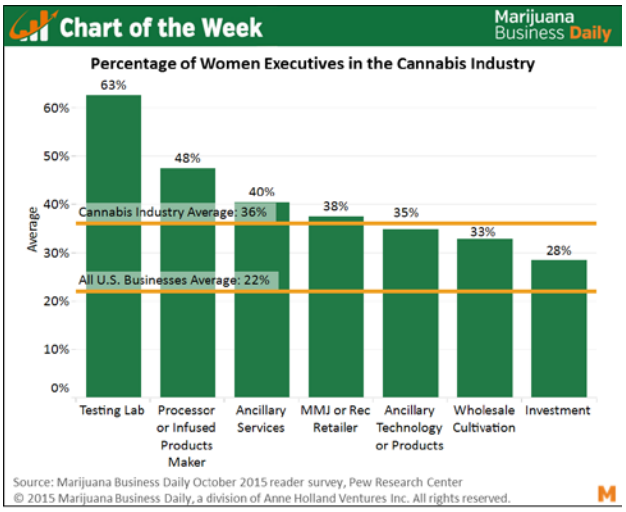


Figure 1: Female representation in the Cannabis Industry

The cannabis sector is an ideal setting for testing whether women respond to competition when entering as entrepreneurs for two reasons. First, the sector lacks established formal business networks, reducing the role of homophilic networks in mediating entry. Second, as a schedule I drug, cannabis is illegal at the federal level and entry is controlled at the state level. This creates a patchwork of regulations, where the number of possible entrants varies by state and by counties within a state,

[1] Marijuana Business Daily, August 21, 2017. Accessed May 30, 2018 at https://mjbizdaily.com/chart-portion-women-executives-cannabis-dips-27-still-strong/

creating natural variation in competition for licenses. Furthermore, the number of licenses has a weak relationship, if any, to local human capital and the number of potential entrants and does not appear to depend on local demand.

In our study, we begin by documenting female entrepreneurship in this new sector a la Gompers and Wang (2017a). We ask: What subsectors within cannabis have greater representation? What geographic areas within a state have greater representation and how could we characterize them? Next, we use variation across states in regulatory requirements to investigate how the number of county licenses available for growing and selling cannabis affects female representation. We will also test whether other barriers to entry, including fees and legal requirements, affect representation.

We use a difference-in-differences empirical framework to compare the rates of entry, firm persistence, firm revenues, and number of employees for female cannabis entrepreneurs. Our analysis takes place at two levels. We will use a state-level DID to compare how recreational access, which changes the competition for licenses, changes entry and persistence as compared to states with medical access only. Medical and recreational access most often comes from popular initiatives sponsored by pro-cannabis groups and ratified by voters, making their passage exogenous to patterns in human capital accumulation among female entrepreneurs. Next, we will dig within states and use variation at the municipal and county level to test whether reduced competition leads to greater entry by female entrepreneurs. Key regulatory features – maximum plant counts, licensing fees, maximum licensees, vertical integration, etc. – vary across states and counties, creating state- and county-level variation in the sector's competitiveness. The demand for medical and recreational cannabis and cannabis services appears to be very high and incumbents constrained, so that the number of licenses does not appear to reflect differences in demand.

The heart of this proposal is to fund research assistance to gather data on female entrepreneurship and variation in cannabis regulations. Entrepreneurship data will come in two forms. First, we will exploit public datasets on entrepreneurship, including the American Community Survey, which includes demographics, and County Business Patterns, which lacks gender but does have establishment, revenues, and employment by NAICS code. The County Business Patterns data will allow us to test for sectoral shifts in entrepreneurship.

We will complement the publicly available data with a new dataset created by joining data on dispensary, laboratory, and growing businesses and Linked In. We begin by identifying cannabis firms using state-level databases of licensed operators in Colorado, New Mexico, Oregon, Michigan, and Washington. We expect the number of cannabis firms from these states to exceed 600. Research assistants will find the name of the business owner for each of these licenses. We will then use the Linked In API to run queries for each business owner name. From there, we will use the Linked In profile to capture firm information (number of employees, date of entry, persistence, exit) as well as their human capital. Gender will be assessed by matching the founder's name to the likely gender via string-matching using a database of names and likely gender.

For local regulations, we will use publicly available data on each state's regulatory structure, from pdaps.org, and county-level requirements from state regulator website. Research assistants will help track the evolution of county-level requirements. We will explore different ways to measure how competitive the market is for licenses in a county.

We expect to contribute to three literatures. First, we will offer another channel which may explain underrepresentation among women in entrepreneurship, one beyond peer effects, discrimination in investing, and risk aversion. Second, we will offer a new field setting to test results from the gender and competition literature. Third, we will contribute to the emerging literature on the effects of the legalization of cannabis in the labor market, which have so far focused on seniors (Nicholas and Maclean 2016) and young men (Sabia and Nguyen 2016).

Citations

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