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The persistence of entrepreneurship and innovative immigrants

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ABSTRACT

Ethnicity and immigration status may play a role in entrepreneurship and innovation, yet the impact of university entrepreneurship education on this relationship is under-explored. This paper examines the persistence and differences in entrepreneurship by ethnicity and nationality. We find that among Stanford alumni, Asian Americans have a higher rate of entrepreneurship than white Americans. However, non-American Asians have a substantially lower, about 12% points lower, start-up rate than Asian Americans. Such discrepancy not only holds for entrepreneurial choice but also for investing as an angel investor or venture capitalist, or utilizing Stanford networks to find funding sources or partners. Participation in Stanford University's entrepreneurship program as a student does little to reduce this gap. The low level of parental entrepreneurship and the high degree of intergenerational correlation in entrepreneurship likely result in the lower level of entrepreneurship and participation in university entrepreneurship programs among Asians relative to their Asian American counterparts. Our findings highlight the value of immigration in terms of breaking the persistence in entrepreneurship among certain ethnic groups and promoting potential high-growth entrepreneurship in the United States. In addition, our findings may have important implications for programs to incorporate immigrant entrepreneurs within their home countries to promote entrepreneurship and help break the persistence of entrepreneurship across generations.

1. Introduction

The important role of universities as well as immigrants in driving innovation and entrepreneurship is increasingly recognized (Saxenian, 2006; Åstebro et al., 2012). For example, Hsu et al. (2007) find that among MIT alumni, non-US citizens become entrepreneurs at significantly higher rates than US citizens.¹ Despite the importance of both universities and immigrants, these two literatures have largely evolved independently, leaving us with relatively little to say about the possible impact of university or public policies on high-skilled immigrant entrepreneurs. One of the most notable features of entrepreneurship and innovation in Silicon Valley is the role Asian immigrant entrepreneurs have played (Saxenian, 1999, 2006). Despite the importance of Silicon Valley entrepreneurship and innovation, there is surprisingly little empirical analysis of entrepreneurial activity that originates from Silicon Valley. This paper examines the persistence and differences in entrepreneurship rates of Stanford alumni by ethnicity and nationality. Rather than examining issues of causality, our goal is to present an exploratory analysis of the patterns of Stanford alumni becoming

entrepreneurs by family background, ethnicity and nationality. Analysis of a population from a research university with a well-established reputation for innovation and entrepreneurship is important in establishing basic facts regarding university-trained, high skill immigrants. We know from anecdotal and systematic evidence that top research universities generate many leading firms. Many of these companies were started by either immigrants or first-generation U.S. citizens (Hart and Acs, 2011).² Research on academic entrepreneurship focuses largely on faculty entrepreneurs, technology transfer, and university spin-offs (Dahlstrand, 1997; Di Gregorio and Shane, 2003; Etzkowitz, 1998, 2003; Nicolaou and Birley, 2003; Vohora et al., 2004). Yet, we now know that the influence of the university on entrepreneurial behavior includes students and alumni as well (Åstebro et al., 2012; Bramwell and Wolfe, 2008; Hsu et al., 2007). However, the impact of the university environment on entrepreneurship among alumni merits deeper exploration, especially when it comes to immigrants and students from non-Caucasian, non-domestic backgrounds.

The question of who becomes an entrepreneur is not a new one to the literature. Yet, we offer three empirical advances. First, our data

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¹ We use the term "alumni" throughout to include both male alumni and female alumnae.

² Prominent examples include Sun Microsystems (Andreas Bechtolsheim and Vinod Khosla), Google (Sergey Brin), LinkedIn (Konstantin Guericke and Jean-Luc Vaillant), Hotmail (Sabeer Bhatia), Nvidia (Jen-Hsun Huang), Morris Chang (TSMC) and Yahoo! (Jerry Yang).

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comprise a representative sample of Stanford alumni who were not selected based on successful entry into entrepreneurship. Second, detailed data on alumni allows us to distinguish not only those from entrepreneurial families, but also to separately examine immigrants and first-generation Americans of similar ethnicity. Finally, a focus on alumni from a top research university permits the examination of the entrepreneurial career choices of a set of individuals with a degree of relative uniformity in educational level, exposure to an entrepreneurial environment in the university years and even social networks. This permits more of an apples-to-apples comparison.

The second research question we address is how the rate of entrepreneurship changes with participation in university entrepreneurship programs. This question has been relatively less explored in the literature, especially in connection with immigration status, ethnicity and career decisions. Relatively little work has examined the impact of educational initiatives to spur innovation and entrepreneurship among alumni (for an exception, see Eesley et al., 2016). One of the main contributions of this paper is in its coverage of a representative sample of all Stanford University graduates since the 1930s, regardless of whether one became an entrepreneur or not. The detailed demographic data in the survey allows us to explore both across and within ethnicity and nationality differences in entrepreneurship.

We find that among Stanford alumni, Asians on average are less likely to become an entrepreneur, invest as an angel investor or venture capitalist (VC), or become an entrepreneur turned investor. However, once we separate Asian Americans from non-American Asians the results diverge. Asian Americans have a higher rate of entrepreneurship than white Americans. However, Asians of foreign nationality have a substantially lower (by about 12% points), start-up rate than Asian Americans.³ The stark difference between Asian Americans and non-American Asians in entrepreneurship among Stanford University alumni suggests that despite the persistent cultural traits shared within each Asian subgroup, the difference in institutional and educational upbringing in the US generates large differences in start-up activity. We then examine whether these differences within the Asian sub-groups decrease as foreign Asian students obtain US university education and take advantage of the university's entrepreneurship programs. We focus on two major entrepreneurship programs initiated by Stanford University, the Center for Entrepreneurial Studies (CES) at the Business School and the Stanford Technology Ventures Program (STVP) at the Engineering School. We find that both programs positively and significantly predict start-up activity. However, controlling for program participation in both programs does not reduce the within Asian ethnic subgroup differences in entrepreneurship.

Why might non-American Asians be less entrepreneurial and why do they utilize entrepreneurship training to a lesser degree than their Asian American counterparts despite coming from similar cultural backgrounds? We find that parental entrepreneurship is lower among Asian Americans and even more so for non-American East Asians. Given that parental entrepreneurship status is one of the strongest and most persistent predictor of entrepreneurship, the low parental entrepreneurship rate among East Asians presents a persistent hurdle to promoting entrepreneurship in their respective countries. Further compounding the low levels of parental entrepreneurship is the high degree of intergenerational correlation in entrepreneurship, i.e., the relationship between one's entrepreneurship outcome and his or her parents' entrepreneurship experience. These two features likely reflect the relatively lower level of entrepreneurship and participation in university entrepreneurship programs among Asian non-Americans relative to their Asian American counterparts.

³ When we further separate the Asian category into three subgroups, i.e., Chinese, Indian, and other Asian, we find that the higher rate of start-up among Asian Americans is driven by the Chinese and Indian Americans. This is consistent with Saxenian's research on the high degree of entrepreneurship by Chinese and Indian immigrants.

The findings of this paper have important implication both in terms of the literature as well as policy. The literature has widely documented the difference in the rate and patterns of entrepreneurship by ethnicity or immigrant status in the US (Fairlie and Robb, 2007). For example, Fairlie (1999) finds that family background explains the significantly lower rates of black entrepreneurship in the US. Fairlie and Robb (2007) further find that the lower performance of black entrepreneurship is due to the lack of training in family businesses. Immigrants, especially Asian immigrants are often hailed as more entrepreneurial and studies on Silicon Valley entrepreneurship highlights the role immigrants have played in founding high-growth technology ventures (Saxenian 1999, 2006). Our finding that Asian Americans have higher rates of entrepreneurship, but that the rate of entrepreneurship for non-American Asians are substantially lower, adds to the literature by illustrating how entrepreneurship within ethnic groups differs by nationality or immigrant status. Furthermore, we document that the intergenerational persistence of entrepreneurship is substantially higher for East Asians. A growing literature emphasizes the importance of culture as a determinant for economic outcomes. However, quantifying culture is challenging and the literature has often used immigrant history, e.g., parent's original country, to proxy for culture (Fernández, 2011; Guiso et al., 2006). The findings of our paper show that such an approach should be examined with caution as entrepreneurial activities of individuals of the same ethnicity, age, and from very similar educational background differ significantly in their career choices depending on US citizenship status.

The rest of the paper proceeds as follows. Section 2 briefly reviews the prior literature on transitions to entrepreneurship. Section 3 describes the Stanford University Innovation Survey and Stanford University's two major entrepreneurship initiatives. Section 4 presents the empirical framework and Section 5 discusses the results. Section 6 concludes and discusses the policy implications.

2. Transition to entrepreneurship

Growth in the number of entrepreneurial firms has been linked to greater real economic growth in the U.S. (Wong et al., 2005). Innovation and entrepreneurship scholars have long been interested in the question of why some people transition to being entrepreneurs due to the impact of entrepreneurial behavior on economic growth and productivity (Schumpeter, 1934). Scholars have offered four categories of answers to this question: (1) financial and opportunity cost-based rationales, (2) cognitive differences, (3) demographic factors, and (4) training and experience effects. We review each of these briefly, yet focus on categories (3) and (4) as the most directly relevant to our research questions.

The first set of explanations for why some transition to entrepreneurship and others do not is that individuals with lower opportunity costs or with better access to financing are more likely to become entrepreneurs (Amit et al., 1995; Iyigun and Owen, 1998). For example, those with higher incomes or parents with greater levels of wealth are likely to have easier access to the funding needed to start a firm and as expected are more likely to become founders (Dunn and Holtz-Eakin, 2000; Blau, 1987). Employees at firms with a slowdown in sales growth are likely to have lower opportunity costs and correspondingly are more likely to found firms (Gompers et al., 2005).

A second set of answers emphasizes cognitive differences between entrepreneurs and non-entrepreneurs (Mitchell et al., 2000). Individuals lower in risk-aversion, higher in need for independence, and lower in their tendency towards counterfactual thinking and regret are more likely to become entrepreneurs (Douglas and Shepherd, 2000; Baron, 2000). Other studies find that individuals with moderate needs for achievement and power were more likely to become entrepreneurs (Roberts, 1991).

Third, demographic factors have also demonstrated predictive power in explaining who transitions to entrepreneurship. These factors

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