

**If I Were Rich? The Impact of Financial and Human Capital on Becoming a Nascent Entrepreneur**

**Phillip H. Kim**

**Department of Sociology  
University of North Carolina at Chapel Hill**  
CB 3210, Hamilton Hall  
Chapel Hill, NC 27599-3210  
919/843.6326  
pkim@unc.edu

**Howard E. Aldrich**

**Department of Sociology  
University of North Carolina at Chapel Hill**  
CB 3210, Hamilton Hall  
Chapel Hill, NC 27599-3210  
919/962.5044  
howard\_aldrich@unc.edu

**Lisa A. Keister**

**Department of Sociology  
Ohio State University**  
300 Bricker Hall  
190 N. Oval Mall  
Columbus, OH 43210  
614/688.8685  
keister.7@sociology.osu.edu

**Draft: January 10, 2003**

**Abstract:**

We test the theory that personal financial resources are an important factor in becoming an entrepreneur. Using data from the Panel Study of Entrepreneurial Dynamics (PSED), we examined the role of financial resources (e.g., household income and wealth) and human capital (e.g., education, prior work and entrepreneurial experience, and influence from family/friends) on the decision to become an entrepreneur. We found that financial resources were not significantly associated with becoming a nascent entrepreneur. Several human capital variables, including education, full-time work experience, previous start-up experience, current self-employment, and percentage of relatives who are entrepreneurs were significantly associated with being a nascent entrepreneur. We suggest that viewing the founding of new organizations through a founder's resources perspective can enhance our understanding of the emergence of new organizations.

**Keywords: Wealth, Entrepreneur, Human Capital**

## **Introduction:**

Starting a new business requires organizing skills, but does it also require financial resources? Surprisingly, the answer to this question has not been settled by empirical research. Some researchers have argued that potential entrepreneurs are constrained by a lack of financial resources, but research has shown that most businesses begin with very little financial investment by their founders. Moreover, budding entrepreneurs might be able to find ways around financial constraints, using various “boot strapping” methods for getting what they need. Perhaps human capital, in the form of work experience or education, helps entrepreneurs compensate for a lack of financial resources.

Previous research on this issue has been hampered by research designs that failed to capture individuals in the early stages of planning their ventures. Ideally, research should focus on nascent entrepreneurs – people still in the process of organizing and assembling the resources they need for a business – but serious obstacles stand in the way of such designs. On an annual basis, only about 4 to 6 percent of the adult population enters the nascent entrepreneur pool. Finding them in sufficient quantities to allow meaningful statistical analysis has been a daunting challenge. Trying to find them early in the process further compounds the difficulty of data collection.

In this paper, we utilize data from a unique sample: the Panel Study of Entrepreneurial Dynamics (PSED). Because of its design, we were able to examine a randomly selected sample of nascent entrepreneurs, alongside a comparison group of non-entrepreneurs. Specific measures of financial and human capital were collected, overcoming a number of limitations that previous researchers have faced.

Our paper is organized as follows. We develop a set of testable hypotheses based on previous findings concerning the relationship between financial resources, human capital variables, and entrepreneurship. We discuss the difficulties in studying the nascent entrepreneur population and review previous approaches, highlighting the strengths and limitations associated with each. Following details related to our sample and estimation methodology, we present multivariate regression results. We conclude with a discussion of our findings and their implications.

## **Theory and Hypotheses**

Entrepreneurship, the creation of new economic entities, is central to the evolution of organizations and economies (Aldrich 1999). Entrepreneurial activity is a vital component of national economic growth and development because it encourages innovation, fosters job creation, and improves global competitiveness for both firms and entire countries (Bednarzik 2000; Keister 2000). New business formation also shapes the nature of social and economic stratification in an economy (Haltiwanger and Krizan 1999). Organizations play an important role in distributing life chances and determining individuals' social standing and chances for social mobility (Haveman and Cohen, 1994). Thus, the rate of new business formation and the nature of emerging economic entities provide the structure within which individuals acquire most of their economic resources and social recognition.

New business formation is also a key potential path for upward social mobility. Entrepreneurship and self-employment enable individuals to accumulate wealth, expand their social contacts, and improve their social and economic standing (Nee and Sanders 1985; Quadriani 1999; Fischer and Massey 2000; Keister 2000). The families of entrepreneurs may also experience upward mobility, both immediately and over time. Many business owners, particularly those who create large firms, employ family members in their business ventures, and some pass on their businesses to their families, either during their lives or as part of an inheritance (Keister 2000). As a result, a small group of self-employed families accumulate great wealth and move to

higher wealth classes over time (Quadrini, 1999). Entrepreneurs who successfully accumulate financial assets are also able to invest in their children's human capital, and they may be able to expand their children's social capital and occupational opportunities as well (Nee & Sanders, 1996).

### Financial Resources

Financial resources can be viewed along two dimensions: household wealth and household income. Examining wealth in addition to income is critical, given the moderate correlation between the two, which is typically around .5 or less (Keister and Moller 2000). We believe financial resources should be aggregated at the household level, rather than studied at the individual level. For example, in the case of a married couple, decisions to pursue a start-up venture will involve jointly owned resources, such as a home, that can be used to raise additional capital. Income aggregated at the household level can provide access to a steady income stream for an individual to rely on when cutting back on regular employment to set up a new venture.

Household Wealth. Research on the impact of financial capital on new business formation has generated mixed results (Dunn and Holtz-Eakin 2000; Reynolds and White, 1997). Some researchers assert that financial capital is critical for entrepreneurship and that *liquidity constraints* inhibit start-ups (Evans and Jovanovic 1989; Bates 1997; Blanchflower and Oswald 1998; Fischer and Massey 2000). They reason that business start-ups often require a substantial sum of money to purchase necessary equipment and supplies. Access to credit markets will be constrained due to risks associated with any start-up venture. This viewpoint emphasizes that equity, particularly from family wealth holdings, allows entrepreneurs to obtain credit, and those with little personal wealth simply cannot secure necessary start-up capital (Bates 1997). Thus, those with high net-worth are expected to be more likely than others to become self-employed (Evans and Leighton, 1989; Fischer and Massey 2000). In support of this view, research has shown that obtaining money from an inheritance increases the likelihood of self-employment (Holtz-Eakin, Joulfaian, and Rosen 1994). Similarly, Dunn and Holtz-Eakin (2000) found a small, but positive influence of assets on transitions to self-employment.

Financing through bank loans or investors can be difficult and disadvantageous for small business owners for many reasons. For those with little or no wealth, financing through institutional loans can exact a high price. Because small businesses are high risk clients for potential financiers, lenders often compensate by increasing the costs associated with the loans, making this a less appealing path to gaining business capital, in comparison to personal savings. In addition to the high costs of using financiers, small businesses also incur the cost of identifying potential financiers and undergoing bonding activities to ensure firm legitimacy. Furthermore, Jurik's (1998) study of home based businesses, which comprise a large proportion of all new businesses, found that few were eligible for bank loans.

Researchers who disagree with the emphasis on financial resources argue that too much importance has been placed on the availability of monetary assets. Many small businesses do not require large amounts of financial capital in their start-up phase. Data from a 1992 survey showed that the majority of business owners started their firms with less than \$5,000 (U. S. Bureau of the Census 1992). Home-based businesses, for instance, which accounted for half of all new businesses in 1992, often require little capital up front. Other research has also shown that personal wealth does not seem to be a major factor in new business ownership (Aldrich, Renzulli, and Langton 1998).

Furthermore, small business owners can often find ways around capital constraints. Many small business owners use financial "boot-strapping" methods to decrease capital needs in the start-up phase (Freear, Sohl, and Wetzel 1995; Harrison and Mason 1997). These methods include relatives working below market salary, using an owner's personal credit card for business expenses, borrowing from relatives, withholding the owner's salary, taking on freelance assignments from other businesses, and leasing equipment rather than buying it (Winborg and

Landstrom 2000). New business owners may be forced to start out by relying exclusively on their own sweat equity

Household Income. In their study of survival prospects of new business ventures, Boden and Nucci (2000) described how individuals may weigh their participation in a start-up venture in terms of *opportunity costs* of their present income from employment. This opportunity cost approach clarifies the concept of “utility” that researchers use in their models to predict an individual’s preference for pursuing self-employment (e.g., Blanchflower and Oswald 1998). An entrepreneur makes two evaluations: prospects for additional income from a start-up relative to present income, as well as perceived future income from the current place of employment. At lower income levels, individuals may find that the opportunity cost is low enough to pursue the uncertainties of income from a new venture. For example, if the venture fails, an individual may be able to find wage employment elsewhere at a similar income level. Or, the projected minimal income stream from the new venture may be similar, in the short-term, to the individual’s current income stream. In such cases, an individual would pursue a new venture, given a higher projected long-term income stream.<sup>1</sup>

However, in higher income brackets, individuals may find that the prospective gains from an entrepreneurial venture are outweighed by the loss of present and future income from their current place of employment. Furthermore, future employment prospects associated with their present occupation may be perceived more favorably than the uncertain outcome from an entrepreneurial venture. Individuals at higher income levels may perceive income streams from wage and salary employment to be more predictable and thus be reluctant to pursue a start-up venture.

In another argument for a potential negative association between income and the likelihood of becoming a nascent entrepreneur, Evans and Leighton (1989) argued that low wage workers are forced to pursue self-employment when they are excluded from the traditional wage labor market. Such “necessity entrepreneurship” can be contrasted with “opportunity based entrepreneurship,” which would occur independently of someone’s current income level (Reynolds, et. al. 2001). To the extent that opportunity based entrepreneurship dominates over necessity based entrepreneurship, the association between income and becoming a nascent entrepreneur will be attenuated.

Based on our review of the role of financial resources, we propose the following hypotheses:

- Hypothesis FR1: Increasing household wealth increases the likelihood of becoming a nascent entrepreneur.
- Hypothesis FR2: Increasing household income reduces the likelihood of becoming a nascent entrepreneur.

### **Human Capital**

In opposition to the view that wealth and income matter, some theorists argue that there may be ways to compensate for a lack of personal financial resources. These theorists contend that many entrepreneurs require little or no capital to begin a new business (Aldrich 1999). Instead, a nascent entrepreneur’s human capital might be the crucial factor in business formation. Human capital is defined as an investment in skills and knowledge that boosts earning power (Becker [1964] 1993), and we believe it plays an important role in new business formation. Education, workplace experience, and family ties are the most common indicators of human capital used in labor force participation analyses, and these characteristics have been associated with the success of entrepreneurs (Bates 1997; Evans and Leighton 1989; Greene 2000).

---

<sup>1</sup> For example, Devine (1994) argued that among women, self-employment is a response to higher potential income from business ownership, as opposed to wage and salary work.

## Education

The impact of formal education on the decision to become an entrepreneur can be viewed along two dimensions: acquisition of skills and credentialing. General business skills, as well as industry specific skills, might help entrepreneurs avoid common mistakes and guide them in setting up basic business functions. Formal education, as credentials, can provide access into certain social networks (e.g., alumni network) or serve as an indicator in an evaluation for resources (e.g., venture capital financing). However, the acquisition of skills and credentials may create more attractive opportunities for an individual to work for others, rather than to pursue self-employment. Moreover, individuals with limited formal education may be viewed as lacking necessary qualifications in the labor market and may need to resort to entrepreneurship as an alternative means of employment. Thus, the association between education and entrepreneurship is not straightforward.

Research on education's impact on entrepreneurship has been inconclusive. Some researchers have found that better educated people are the most likely to become entrepreneurs (Fairlie and Meyer 1996; Bates 1997). In an analysis of 1980 U.S. Census Data, Robinson and Sexton (1994) and Carr (1996) reported that education had a positive association on self-employment for both men and women. In contrast, data from the General Social Survey in 1991 showed that education was negatively related to self-employment (Butler and Herring 1991). A study of women entrepreneurs found that education had either no effect or a negative effect on entrepreneurship (Greene 2000).

In 1992, over 55 percent of all business owners did not have a college degree (U.S. Bureau of the Census 1992). In knowledge-based service industries, such as finance, real estate, and insurance, education is clearly relevant to business acumen. Those who start small businesses in trades such as construction or carpentry have little need for a college degree; instead they draw on their acquired technical skills and on-the-job experience. Although education has not been very important for self-employment in the past, as the U.S. labor market becomes increasingly service and information based, education will probably play an increasingly important role in facilitating new business formation. Thus, we hypothesize that, on balance, education will be positively associated with an increased likelihood of entrepreneurship.

- Hypothesis HC1: Formal education increases the likelihood of becoming a nascent entrepreneur.

## Work Experience

Aldrich, Renzulli, and Langton (1998) proposed the term "entrepreneurial capital" to refer to the experience and skills associated with business ownership and managerial experience. We believe previous work experience is an important dimension of human capital for a nascent entrepreneur (Brüderl, Preisendörfer, and Ziegler 1992). The concept of work experience can be decomposed into four components: general full-time work experience, managerial experience, previous start-up experience, and current self-employment.

General full-time work experience gives individuals opportunities to learn general business-related skills. If the work experience takes place within the industry in which the new venture is located, individuals gain opportunities to understand industry specific market forces and identify potential market opportunities to exploit. Furthermore, work experience increases opportunities for individuals to obtain positions within various social networks that can be tapped into for market information, access to capital, hiring employees, and developing supplier and customer relationships. Previous managerial experience can give people skills needed to coordinate and administer diverse activities in the early phases of a start-up (Boden and Nucci 2000). In previous research using "age" as a proxy for accumulated human capital, age exhibited a curvilinear effect, peaking at certain level, beyond which its effects decreased. Accordingly, we expect a similar relationship for general and managerial work experience.

Prior start-up experience and current self-employment are additional ways in which

potential entrepreneurs could develop experience relevant to planning and executing decisions for the start-up phase. Individuals with prior experience starting new business might be more likely to avoid mistakes than individuals without such experience. However, they might also have become discouraged by negative feedback from that experience and thus disinclined to take part in another startup.

Research suggests that those who are currently self-employed are more likely to be involved in other new business ventures than those who are working for others. For example, Reynolds and White (1997: 41) found that self-employed persons were more likely to be nascent entrepreneurs than those working for someone else. People already in business have many opportunities to develop valuable contacts, as well as accumulate the additional wealth that can use to begin a new venture. They are also well placed to spot new opportunities in their own or contiguous industries. Thus, we believe that persons already in business will be more likely than others to start another one.

We propose the following set of work experience related hypotheses:

- Hypothesis HC2: Years of general full-time work experience increase the likelihood of becoming a nascent entrepreneur, but at a declining rate.
- Hypothesis HC3: Years of managerial experience increase the likelihood of becoming a nascent entrepreneur, but at a declining rate.
- Hypothesis HC4: Previous start-up experience increases the likelihood of becoming a nascent entrepreneur.
- Hypothesis HC5: The likelihood of becoming a nascent entrepreneur increases when the individual is currently self-employed.

#### Exposure to Entrepreneurship through Family and Friends:

The children of the self-employed are more likely to become self-employed in their adult careers (Altonji and Dunn 1991; Aldrich, Renzulli, and Langton 1998; Dunn and Holtz-Eakin 2000; Lentz and Laband 1990). For example, Butler and Herring (1991) and Hout and Rosen (2000) both found a positive association of father's self-employment with male self-employment. These "second-generation" entrepreneurs benefited from exposure, perhaps at early ages, to an entrepreneurial environment, ranging from practical matters of running business operations to developing social networks to coping with the risks associated with self-employment (Aldrich, Renzulli, and Langton 1998).

Some researchers have suggested that parents hand down their businesses to their children upon retirement or provide capital for new businesses (Robinson 1984; Robinson and Garnier 1985). Recent research does not support this claim (Aldrich, Renzulli, and Langton 1998). Self-employed parents rarely keep their children in the family business, so inheritance does not explain why the children of self-employed parents are so often found in self-employment.

Researchers have speculated that self-employed parents might encourage the development of entrepreneurial attitudes in their children through socialization. Parents may somehow be instilling a learned preference for self-employment in their children, possibly by providing work experiences at a young age, or through exposing their children to the entrepreneurial lifestyle and the social networks tied to their businesses (Carroll and Mosakowski 1987; Hout 1989; Aldrich, Renzulli, and Langton 1998). We thus expect that having self-employed parents will positively affect the chances of someone becoming a nascent entrepreneur.

Family exposure to self-employment includes not someone's parents but also other relatives within families, as well as someone's friends. Other family within the same generation (i.e., siblings, cousins) can influence individuals' beliefs about entrepreneurship, as well as provide role models and practical knowledge. We view this informal training – "pre-market" experience (Lentz and Laband 1990) – as a separate component of human capital that might

increase someone's interest in a start-up project. This training can take place both formally (e.g., as an employee) or informally (e.g., advice) and can be accessed through the individual's network of relationships.

Thus, we offer three hypotheses regarding family and friends:

- Hypothesis HC6: Individuals with parents who are entrepreneurs are more likely to be nascent entrepreneurs.
- Hypothesis HC7: Individuals with relatives who are entrepreneurs are more likely to be nascent entrepreneurs.
- Hypothesis HC8: Individuals with friends who are entrepreneurs are more likely to be nascent entrepreneurs.

## **Data and Methods:**

### Problems in Studying Entrepreneurs

Researchers are faced with a number of empirical challenges in studying the influence of financial resources and human capital among potential entrepreneurs. The primary limitations are finding data on a rare population (i.e., approximately four to six percent of the US adult population [Reynolds 2000]) and the poor quality of the measures available as indicators for financial and human capital constructs.

[INSERT TABLE 1 ABOUT HERE]

To fully appreciate the complexities of these empirical constraints, we describe research designs used by previous researchers who have studied the effects of financial resources on the transition into self-employment. In Table 1, we summarize six types of data and highlight their strengths and limitations. First, the National Longitudinal Surveys<sup>2</sup> have been widely used in a number of research programs. Researchers use various analytical techniques, such as lagging key explanatory variables (such as income and net assets) to examine the transition phase into entrepreneurship. The strengths of longitudinal analyses are offset in some cases by cohort-related restrictions, and in some cases by the gender, age, and race of the respondents in these samples. Second, researchers have examined data collected on small businesses, such as the Characteristics of Business Owners and Dun and Bradstreet databases. These samples are typically large, with over-samples of females and minorities, but any conclusions derived from analyzing these data encounter the selection bias of not including entrepreneurs who have abandoned their efforts prior to when data were collected.

Third, investigators have used tax records. These analyses focus primarily on aspects of the tax and legal codes, but are limited by the lack of demographic information on entrepreneurs, such as race and education, to use as control variables. Fourth, researchers have analyzed individual level Census data, such as the Current Population Survey. Although wage data is available, along with other important control variables, the quality of the data is somewhat questionable, due to high non-response rates (Devine 1995). Fifth, efforts to include additional control variables by using the General Social Survey (GSS) have improved our understanding (Butler and Herring, 1991; Greene 2000; Hout and Rosen 2000). However, these improvements are limited because these data are not specifically focused on entrepreneurs. We catalogue these analytical strategies to highlight how the inherent strengths and limitations of types of data may influence the contributions to theory that researchers are able to make.

### The PSED Data:

To test our hypotheses, we analyzed data from the Panel Study of Entrepreneurial Dynamics. Reynolds (2000) fully detailed the study's background and sampling methodology. Accordingly, we only highlight several methodological issues from this background report that

---

<sup>2</sup> For example, National Longitudinal Survey of Young Men, National Longitudinal Survey of Labor Market Experience, Panel Study of Income Dynamics.

are of interest to our research. Using data from the PSED allows us to extend our inquiries beyond a number of the limitations highlighted in Table 1. We are able to assess directly the effect of explanatory variables during the period in which individuals are in the process of becoming entrepreneurs. With random sampling of the U.S. adult population, conclusions can control for key variables such as age, race, gender, and region.

The PSED was designed to identify a large sample of nascent entrepreneur respondents who are in the transition phase, from which a secondary sample was selected to be interviewed. Specific criteria are used to determine whether an individual qualifies as a nascent entrepreneur in this data set. In previous research, by contrast, the definition of self-employment used to categorize cases has been inconsistent, restricting the comparability of previous findings. Over-sampling of minorities and women in the PSED enhanced the quality of the data in these respective groups. Finally, since we examine characteristics of nascent entrepreneurs during their start-up phase, we minimize the selection bias associated with analyzing existing data sets that do not include individuals who have abandoned entrepreneurial pursuits.

The final data set we analyzed is a combination of two sub-samples. The “Nascent Entrepreneur” sub-sample targeted individuals who qualified as nascent entrepreneurs based on screening questions. This sub-sample was supplemented by two over-samples of women and minorities. Data collection for the Nascent Entrepreneur sub-sample used a retrospective design<sup>3</sup> in order to yield enough cases for a rare sub-population of adults in the United States (i.e., approximately four to six percent). Sampling was performed in two stages. First, a screening interview identified and qualified respondents as nascent entrepreneurs to form a potential pool of interested respondents; second, from this pool, nascent entrepreneurs were randomly drawn and invited for participation in the study.

The “Comparison Group” sub-sample was also created in two phases. Individuals were invited to participate in a survey of work and career patterns of Americans. Individuals were randomly drawn to form the sample and contacted to complete the interview for the comparison group. A minority over-sample supplemented the primary comparison group sub-sample. These respondents answered the same set of basic background questions as the Nascent Entrepreneur sub-sample.

National screening of the United States adult population (18 years of age and older, within the contiguous 48 states) took place between July, 1998 and January, 2000, using random digit dialing (RDD) methodology to locate the first adult in a household willing to participate. Both groups of respondents were contacted to participate in a phone survey, supplemented with a mail survey. Respondents in the Nascent Entrepreneur sub-sample were contacted 12 months and 24 months after the initial full-length interview for follow-up questions. We examined data only from Wave 1. The interview questions focused on the respondent’s start-up involvement and related background characteristics. Respondents also provided information for up to five members of their start-up team.

As researchers, we would prefer a study design that interviewed respondents who did not qualify as nascent entrepreneurs when initially selected in the Nascent Entrepreneur sub-sample, hence eliminating the need for a Comparison Group sub-sample. However, financial considerations made that design unfeasible. Instead, we combined the Comparison Group sub-sample with the Nascent Entrepreneur sub-sample into one final sample<sup>4</sup>.

#### Weights:

Individual case weights for both Nascent Entrepreneur and Comparison Group sub-samples were utilized in our analyses. The weights address differences in selection probabilities

---

<sup>3</sup> Cases were initially selected based on whether an individual was a nascent entrepreneur or not.

<sup>4</sup> 816 nascent entrepreneur cases were weighted to 74 cases (6% of total sample); 409 comparison group cases were weighted to 1148 cases (94% of total sample)

based on age, education, race, and sex (based on the Current Population Surveys conducted by the U.S. Census) and correct for differences due to differential non-response rates. Since these weights were originally calculated based on the respective sub-samples, we recalculated the weights so that each case accurately reflects the population when both sub-samples were combined into one sample.<sup>5</sup>

#### Variables:

Descriptive statistics for the variables in our model appear in Table 2.

[INSERT TABLE 2 ABOUT HERE]

Dependent variable: Our primary focus was to assess if financial and human capital variables were associated with an individual becoming a *nascent entrepreneur*. Thus, we created a dichotomous variable (coded 1 = nascent entrepreneur, 0 = otherwise). To be classified as a nascent entrepreneur, a respondent must have answered yes to either or both of the following questions (Reynolds 2000):

- Are you, along or with others, now trying to start a new business?
- Are you, along or with others, now starting a new business or new venture for your employer? An effort that is part of your job assignment?

Furthermore, those individuals who replied yes to the above two questions must also have met three additional qualifications:

- They expect to be owners or part owners of the new firm.
- They have been active in trying to start the new firm in the past 12 months.
- The effort is still in the start-up or gestation phase and is not an infant firm<sup>6</sup>.

In the final sample, 816 respondents were identified as nascent entrepreneurs and 409 respondents were in the comparison group, for a total of 1225 cases<sup>7</sup>. We “weighted down” the 816 nascent entrepreneur cases to represent their actual proportion of the United States’ population.

#### Independent variables:

*Financial resources:* Two indicators were used to operationalize financial resources in our model: household net worth and household income. The correlations between the financial resources variables are low<sup>8</sup>, suggesting that these two variables, in combination, provide a composite picture of an individual’s financial well-being.

- Household net worth: This includes the value of total assets (e.g., physical property and investments, including primary residence) net of outstanding debt (e.g., mortgage, home

---

<sup>5</sup> Final weights for Nascent Entrepreneur cases reflected their selection probability, relative to the Comparison Group cases. In other words, since probability of selecting a nascent entrepreneur was much lower in the population, we needed to “weight down” our sample to account for this. Our weight down factor was based on the number of cases that passed the first two out of the four qualifications in the initial screening interview. These two qualifications were that the individual expects to be an owner or part owners in the start-up firm and has been actively in the start-up phase during the past 12 months. The weight down factor was 6.03%. Although two additional qualifications were used to determine a nascent entrepreneur (i.e., start-up is not an infant firm and majority ownership by a non-person, such as a venture capital firm), these qualifications were not asked during the screening interview. As a result, our final descriptive results were slightly biased upward since we have not completely weighted down our cases. However, we suspected the magnitude of this bias to be small, since the number of cases eliminated at this phase was relatively small.

<sup>6</sup> A start-up firm was considered an “infant firm” if the start-up had a positive monthly cash flow that covered expenses and the owner-manager salaries for more than three months.

<sup>7</sup> Shaver, et. al. (2001) provided complete selection rules.

<sup>8</sup> The correlation between household net worth and income is .44; between household net worth and home value it is .54; and between household income and home value it is .36. The correlation between net worth and income is similar to other survey data of a 0.5 correlation between the two variables. (Keister 2000)

equity and car loans). These questions are same questions used in the Survey of Consumer Finances that is conducted by the Federal Reserve Board. We transformed the raw wealth variable into a positive integer (by adding all values by the most negative wealth value plus one) and took the natural logarithm of this transformed wealth variable<sup>9</sup>. We included an indicator variable to signify cases where wealth was less than or equal to zero.

- Household income: This includes all sources of income including work, government benefits, and pension before taxes in the previous year.<sup>10</sup> We also transformed the raw income value by adding one to all cases where income equaled zero and took the natural logarithm.

For the value of household wealth, we utilized a calculated value that was based on the wealth components which were asked about separately (i.e., assets minus liabilities), when available. To increase the item response rate for both the household income and wealth variables, respondents could answer two sets of questions, in addition to the specific questions about the components of wealth. Respondents who did not provide an actual number for an open-ended question about their total household wealth or income were then asked a series of questions in which they were asked to estimate their appropriate income and wealth range.

For cases with partial missing information on the components of wealth, we employed a set of decisions rules that included using a single wealth report and midpoints of wealth categories. Similarly, for cases with partially missing income information, we implemented decision rules to determine a midpoint income value, based on categorical information.<sup>11</sup> The quality of these data is high, given the high response rate for the income and net worth variables.<sup>12</sup>

*Human Capital:* We operationalized the concept of human capital along three primary dimensions: formal education attainment, work experience, and self-employed family and friends. We describe the indicators used below.

- Education: Categorical variable of highest level of education completed [Up to high school degree, technical/vocational, some college (including associates degree), bachelors degree, post college].
- Work Experience: We included three variables to assess the effects of the respondent's work experience<sup>13</sup>.
  - Years of full time work experience (except for managerial experience): We transformed the raw experience value by adding one to cases with no work experience and taking the natural logarithm, after subtracting years of managerial experience.
  - Years of Managerial Experience: This measure focuses on the number of years of managerial, supervisory, or administrative experience of the respondent only. We also transformed the raw experience value by adding one to cases with no managerial experience and taking the natural logarithm.
  - Helped start other businesses: 1 = Yes, 0 = No.

---

<sup>9</sup> We believe keeping all cases, including cases where wealth is less than or equal to zero, provides a more accurate assessment of how wealth is associated with becoming an entrepreneur. In contrast, Evans and Jovanovic (1989) deleted negative net worth cases in their analysis.

<sup>10</sup> Since data collection took place at different times for different sub-samples, these figures were relative figures, rather than absolute figures for a specific year.

<sup>11</sup> Detailed coding rules are available from the authors upon request.

<sup>12</sup> Response rates: household net worth: 93%; household income: 97%

<sup>13</sup> We operationalized these variables in ways similar to those of other researchers (e.g., Schoonhoven, Eisenhardt, and Lyman 1990).

- Self-employed/Small business owner: 1 = Currently self employed/small business owner, 0 = No
- Impact of Family and Friends: We followed other researchers who have explored the impact of the respondent’s family self-employment (e.g., Carroll and Mosakowski 1987). To test for effects of experience gained through family and other relationships, we included the following variables in the model.
  - Parents who are business owners: 1 = Yes, 0 = No
  - Percentage of Relatives (other than family) who are business owners and Percentage of Friends and neighbors who are business owners: We transformed the original categorical variables (none, few, some, most) into continuous variables based on percentages (0%, 25%, 50%, and 75%)

*Control Variables:* We included seven additional control variables in our models.

- Age: We transformed the raw age value by taking the natural logarithm, based on the theory that the likelihood of individuals becoming a nascent entrepreneur increases up to a certain age and plateaus thereafter (Evans and Leighton 1989).
- Gender: Male = 1, Female = 0
- Race: White, Black, Hispanic, Other<sup>14</sup>

The following two variables served as proxy for whether or not there is an influence from being a first or second-generation immigrant.<sup>15</sup>

- Foreign Born: 1 = Yes, 0 = No
- Parents of Respondent Foreign Born: 1 = Yes, 0 = No
- Marital Status: 1 = Married, 0 = Other
- Region: Northeast, South, Midwest, West (based on Census Regions)

## Methods

Our dependent variable was dichotomous (i.e., whether an individual is a nascent entrepreneur). Accordingly, we utilized logistic regression methodology to estimate parameters according to the following general equation:

$$\log [P_i / (1 - P_i)] = \beta_0 + \mathbf{FR}_i \beta_1 + \mathbf{HC}_i \beta_2 + \mathbf{CV}_i \beta_3,$$

where  $\log [P_i / (1 - P_i)]$  is the log of the odds that an individual is a nascent entrepreneur, and  $P_i$  is the probability of the outcome. In this equation, we included  $\mathbf{FR}_i$  as a vector of financial resource variables,  $\mathbf{HC}_i$  as a vector of human capital variables, and  $\mathbf{CV}_i$  as a vector of control variables. We assessed improvements in model specification by calculating the Akaike Information Criterion (AIC) for each model. A decrease in AIC across models indicated improvements in model fit.

## **Results:**

We present the logit coefficients and odds-ratios for the parameters of our maximum likelihood estimation model in Table 3<sup>16</sup>.

[INSERT TABLE 3 ABOUT HERE]

<sup>14</sup> “Other” included Native American Indian, Asian, and Something Else.

<sup>15</sup> Although an individual could be foreign born, but technically not an immigrant (i.e., born to U.S. citizens while temporarily outside the United States), there is no way to distinguish this in the responses.

<sup>16</sup> We ran three models: Models 1 and 2 include financial resource and human capital variables, respectively along with the control variables. Model 3 is our full model that is presented in Table 4. Based on the AIC values, model specification improved with each subsequent model (AIC Model 1 = 480.32; Model 2 = 469.81; Model 3 = 434.07).

Hypotheses FR1 and FR2 were not supported. Neither financial resource variable has a statistically significant association with being a nascent entrepreneur<sup>17</sup>. Individuals apparently become nascent entrepreneurs, regardless of their level of household net worth or household income. These results contradict the expectations of liquidity constraint theory, and suggest that other considerations, such as the value of a perceived opportunity, are more salient to nascent entrepreneurs than any limits imposed by financial strictures.

To provide an additional perspective on these findings, we examined the distribution of funding sources sought by nascent entrepreneurs.<sup>18</sup> We highlight three important findings. First, most nascent entrepreneurs started their ventures with very little financial capital. Approximately 80 percent of nascent entrepreneur contributed \$10,000 or less into their ventures, while 50 percent began with only \$2,000. Second, we found that few nascent entrepreneurs were seeking funding from others for their ventures.

[INSERT TABLE 4 ABOUT HERE]

In Table 4, we present the distribution of funding sources pursued by nascent entrepreneurs. Among the financing options, nascent entrepreneurs utilized credit cards the most, followed by support from spouse, friends and other family members. Nascent entrepreneurs resorted to requesting a bank loan as secondary options, perhaps after exhausting all other resources. This may be partly due to difficulties in accessing credit markets. However, we believe that nascent entrepreneurs follow a financial resources “pecking order” – accessing credit markets by applying for a bank loan comes only after other primary options have been pursued. Third, while nascent entrepreneurs with zero or negative net worth applied for a bank loan more often than higher net worth individuals, they were just as likely to be approved as were positive wealth nascent entrepreneurs (Table 5).

[INSERT TABLE 5 ABOUT HERE]

These findings, coupled with our regression results, suggest two implications. First, financial resources do not appear to play a significant role in an individual’s decision to pursue a start-up venture, at least in the nascent stage of planning the new business. When funding the venture becomes an issue, nascent entrepreneurs will likely pursue all available options to raise the necessary resources. Second, the assumption of constrained access to the credit markets for lower wealth nascent entrepreneurs is questionable. Although not a study of entrepreneurial loan approval rates, our descriptive findings point toward a credit market that is willing to fund individuals who do not have significant wealth. These new ventures simply do not require large financial investment in the short-term, and thus, may not encounter a liquidity constraint.

In contrast to our negative results for financial resources, several human capital variables had significant associations with being a nascent entrepreneur. In terms of formal education, HC1 was supported, as individuals who have some college or are college graduates ranged from being 1.5 to 2.3 times as likely as those up to a high school degree to be associated with being a nascent entrepreneur.

Only two of the four work experience variables were significantly positively associated with being a nascent entrepreneur. Additional general full-time work experience increased the likelihood of being a nascent entrepreneur at a decreasing rate (HC2), while managerial experience (HC3) did not. We believe that our measure of work experience improves upon previous proxies such as age, especially given that age and general work experience are both significant in opposite directions. Individuals with previous start-up experience (HC4) were actually 50 percent less likely to be nascent entrepreneurs. HC5 was supported, however, as individuals currently self-employed or small business owners were significantly more likely to be

---

<sup>17</sup> The financial resource variables are also not significant only when included in a model with only the control variables.

<sup>18</sup> Because they had not tried to found a business, respondents from the comparison group were not included in these analyses.

nascent entrepreneurs. The magnitude of the coefficient may be due in part to the broad definition of self-employment or small business ownership status as used in the survey<sup>19</sup>. We note that the majority of the nascent entrepreneurs in the sample are first-time entrepreneur (52 percent).

There are two possible explanations for these contradictory findings. One explanation is that as an indicator, previous start-up experience does not adequately measure the “entrepreneurial capital” necessary in becoming an entrepreneur. Rather, this indicator reflects the decisions of former entrepreneurs to pursue a new start-up venture. Following this line of reasoning, successful entrepreneurs (e.g., those currently self-employed) are more likely to pursue new ventures. Given the difficulties entrepreneurs face in general, unsuccessful former entrepreneurs are more likely to opt for a wage or salary career, having learned from their previous start-up experience. A second explanation centers on the limitations of cross-sectional data. We only know that former entrepreneurs are 50 percent less likely to be a nascent entrepreneur at the time of the interview, and they may well become involved at some point in the near future.

Somewhat surprisingly, levels of self-employment among family and friends had mixed association with being a nascent entrepreneur. Only the percentage of relatives who are business owners (HC7) was positively associated with being a nascent entrepreneur; our Human Capital Hypotheses 6 and 8 were not supported. The presumed advantages of having at least one self-employed parent were not apparent in our results – these people were no more likely than the children of wage and salary workers to be associated with being a nascent entrepreneur. Instead, the entrepreneurial influence resided with extended family and kin. Having friends or neighbors who were entrepreneurs made no difference.

Among the control variables, we highlight the significant results for black individuals. Fairlie (1999) argued that African-American men were one-third as likely to be self-employed as white men, citing lower asset levels and rate of self-employed fathers. Similarly, Butler and Herring (1991) and Hout and Rosen (2000) reported that African-Americans and Latino men were less likely to pursue self-employment after controlling for father’s self-employment status. In contrast to previous results, we found that both blacks and Hispanics were *more likely* than whites to be a nascent entrepreneur, net of other variables. This may be a leading indicator to a shift in the rate of entrepreneurship of these minority groups, relative to whites.

## Discussion

We offer several possible reasons for why our results contrast with previous findings. First, we employed a fairly stringent set of criteria to qualify an individual as a nascent entrepreneur. In previous studies, the concept of “entrepreneurship” depended on more general indicators for the dependent variable, such as self-employment or small business owner.

---

<sup>19</sup> Our intent with this variable was to determine if respondents were currently running a business, independent of the current start-up activity. However, given the high coefficient for this variable and associated possibility of endogeneity, we believe that the respondents may have misinterpreted the question. Some respondents may have inadvertently included the current start-up activity in deciding how to respond. Nonetheless, there is some evidence that nascent entrepreneurs may, in fact, be rather ambitious in their occupational pursuits. For example, many nascent entrepreneurs who reported being a small business owner or self-employed also reported being involved in other work-related activities. That is, they “multi-tasked” among other activities. Of these respondents, 54% reported working for someone else, in addition to their own business. Involvement in a part-time venture may contribute to the decision to pursue a separate full-time start-up venture – this variable appeared to capture to some degree the impact of such involvement. We also believe that their pursuit of multiple occupational options reflects a strong desire to pursue multiple channels of employment in order to earn a great deal of money within a short period of time.

Definitions established by researchers vary from survey to survey, lacking a clear baseline for reference. Previous researchers have mostly examined people who are already running an operating business. In contrast, the PSED focused on nascent entrepreneurs, who were in the initial phase of pursuing a start-up venture.<sup>20</sup> These individuals cannot be directly compared to entrepreneurs, because a significant proportion of nascent entrepreneurs decide to drop their start-up plans and thus do not survive the start-up phase (Reynolds and White 1997). In this respect, our findings correct for the selection bias inherent in other analyses of entrepreneurs.

Second, the PSED was specifically designed to study the nascent entrepreneur population. We thus were able to include more precise measures of financial resources, human capital, and various socio-demographic characteristics of potential entrepreneurs than previous studies. Such measures reduced model misspecification encountered in other data sets.

Third, we must acknowledge that the data collection for the PSED took place during a period of strong economic growth within the United States. Our results should be interpreted within the context of low unemployment, significant returns from equity markets, and greater access to both credit markets and venture capital funding. However, we believe that our findings advance our understanding of the impact of financial and human capital resources on decisions to pursue entrepreneurship.

Our findings exhibit the Schumpeterian quality of entrepreneurship: combining existing resources in innovative ways to spur development (Schumpeter 1934). Entrepreneurs, we propose, are creatively finding ways to maximize resources to launch new ventures in industries, even without significant financial resources. A decision to pursue a start-up venture is not hindered by these restrictions, as a rational-choice model might conclude. Instead, entrepreneurs move beyond these barriers and employ different combinations of available resources to exploit perceived market opportunities.

We believe several lines of additional research could extend our initial findings. Given our mixed finding that work experience is significantly associated with nascent entrepreneurship, are there some specific dimensions of previous experiences that consistently have an impact? Do entrepreneurs imitate and copy existing organizational practices from others within their start-up industry, thus lowering their need to expend resources on exploratory activities? Given the high risk associated with the “liability of newness” (Aldrich and Auster 1986; Stinchcombe 1965), do low wealth entrepreneurs face any inherent disadvantages?

### **Conclusion**

Entrepreneurs face enormous risk as they bring new organizations into existence. We brought together two important streams of research: transitions into self-employment and organizational foundings. Previous findings on transitions into self-employment have faced limitations due to data availability. We showed that financial resources do not have a significant association with becoming a nascent entrepreneur, contrary to what liquidity constraint theory predicts. Human capital, by contrast, does make a difference, although less so than we had expected. These findings, we believe, should spur additional research into organizational foundings.

### **References:**

- Aldrich, Howard E. 1999. *Organizations Evolving* London: Sage.
- Aldrich, Howard and Ellen R. Auster. 1986. “Even Dwarfs Started Small: Liabilities of Age and Size and Their Strategic Implications.” In Research in Organizational Behavior. 8:165-198.

---

<sup>20</sup> Specifically, we examined individuals actively involved over the last twelve months in the start-up, securing both ownership rights, and operating with a degree of autonomy.

- Aldrich, Howard E., Linda A. Renzulli, and Nancy Langton. 1998. "Passing on Privilege: Resources Provided by Self-Employed Parents to Their Self-Employed Children." In *Research in Social Stratification and Mobility* 16: 291-317.
- Altonji, Joseph G. and Thomas A. Dunn. 1991. "Relationships Among the Family Incomes and Labor Market Outcomes of Relatives." *Research in Labor Economics* 12:269-310.
- Bates, Timothy. 1997. *Race, Self-employment, and Upward Mobility: An Illusive American Dream*. Washington, D.C.: Woodrow Wilson Center Press.
- Becker, Gary S. [1964] 1993. *Human Capital: A Theoretical and Empirical Analysis, With Special Reference to Education*. Chicago; University of Chicago Press.
- Bednarzik, Robert W. 2000 "The Role of Entrepreneurship in U.S. and European Job Growth." *Monthly Labor Review* 123(7):3-16.
- Blanchflower, David G. and Andrew J. Oswald. 1998. "What Makes an Entrepreneur?" *Journal of Labor Economics* 16:26-60.
- Boden, Jr., Richard J. and Alfred R. Nucci. 2000. "On the Survival Prospects of Men's and Women's New Business Ventures." *Journal of Business Venturing* 15:347-362.
- Brüderl, Josef, Peter Preisendörfer, and Rolf Ziegler. 1992. "Survival Chances of Newly Founded Business Organizations." *American Sociological Review* 57:227-242.
- Butler, John Sibley and Cedric Herring. 1991. "Ethnicity and Entrepreneurship in America: Toward an Explanation of Racial and Ethnic Group Variations in Self-Employment." *Sociological Perspectives* 34:79-94.
- Carr, Deborah. 1996. "Two Paths to Self-Employment? Women's and men's Self-Employment in the United States, 1980." *Work and Occupations* 23:26-53.
- Carroll, Glenn R. and Elaine Mosakowski. 1987. "The Career Dynamics of Self-Employment." *Administrative Science Quarterly* 32:570-589.
- Devine, Theresa J. 1994. "Changes in Wage-and-Salary Returns to Skill and the Recent Rise in Female Self-Employment." *American Economic Review* 84:108-113.
- ." 1995. "CPS Earnings Data for the Self-Employed: Words of Caution for Use and Interpretation." *Journal of Economic and Social Measurement* 21:213-252.
- Dunn, Thomas and Douglas Holtz-Eakin. 2000. "Financial Capital, Human Capital, and the Transition to Self-Employment: Evidence from Intergenerational Links." *Journal of Labor Economics* 18:282-304.
- Evans, David. S., and Linda S. Leighton. (1989) "Some Empirical Aspects of Entrepreneurship." *American Economic Review* 9(3):519-35.
- Evans, David. S., and Boyan Jovanovic. (1989) "An Estimated Model of Entrepreneurial Choice Under Liquidity Constraints." *Journal of Political Economy* 7 (4):808-27.
- Fairlie, Robert W. 1999. "The Absence of the African-American Owned Business: An Analysis of the Dynamics of Self-Employment." *Journal of Labor Economics* 17:80-108.
- Fairlie, Robert W. and Bruce Meyer. 1996. "Ethnic and Racial Self-Employment Differences and Possible Explanations." *Journal of Human Resources* 35:757-793.
- Fischer, Mary and Douglas Massey. 2000. "Residential Segregation and Ethnic Enterprise in U.S. Metropolitan Areas." *Social Problems* 47:410-424.
- Freear, John, Jeffrey. E. Sohl, and William E. Wetzel, Jr. 1995. "Who Bankrolls Software Entrepreneurs?" *Frontiers of Entrepreneurship Research*.
- Greene, Patrica G. 2000. "Self-employment as an Economic Behavior: An Analysis of Self-Employed Women's Human and Social Capital." *National Journal of Sociology* 12:1-55.
- Haltiwanger, John. and C. J. Krizan. 1999. "Small Business and Job Creation in the United States: The Role of New and Young Businesses." In *Are Small Firms Important: Their Role and Impact*, edited by Zoltan Acs. Boston: Kluwer Academic.
- Harrison, Richard. T. and Colin M. Mason. 1997. "Entrepreneurial Growth Strategies and Venture Performance in the Software Industry." *Frontiers of Entrepreneurship Research*.

- Haveman, Heather A., and Lisa E. Cohen. 1994. "The Ecological Dynamics of Careers: The Impact of Organizational Founding, Dissolution, and Merger on Job Mobility." *American Journal of Sociology* 100:104-152.
- Holtz-Eakin, David Joulfaian, and Harvey S. Rosen. 1994. "Entrepreneurial Decisions and Liquidity Constraints." *RAND Journal of Economics* 25:334-347 (Summer).
- Hout, Michael. 1989. *Following in Father's Footsteps: Social Mobility in Ireland*. Cambridge, MA: Harvard University Press.
- Hout, Michael and Harvey Rosen. 2000. "Self-Employment, Family Background, and Race." *Journal of Human Resources* 35:670-691.
- Jurik, Nancy C. 1998. "Getting Away and Getting By: the Experiences of Self-Employed Homeworkers." *Work and Occupations* 25:7-35.
- Keister, Lisa A. 2000. *Wealth in America: Trends in Wealth Inequality*. Cambridge, UK: Cambridge University.
- Keister, Lisa A. and Stephanie Moller. 2000. "Wealth Inequality in the United States." *Annual Review of Sociology* 6:63-81.
- Lentz, Bernard F. and David N. Laband. 1990. "Entrepreneurial Success and Occupational Inheritance Among Proprietors." *Canadian Journal of Economics* 23:563-579 (August).
- Nee, Victor and Jimmy M. Sanders. 1985. "The Road to Parity: Determinants of the Socioeconomic Achievements of Asian Americans." *Ethnic and Racial Studies* 8:75-93.
- , 1996. "Immigrant Self-Employment: The Family as Social Capital and the Value of Human Capital." *American Sociological Review* 61:231-48.
- Quadrini, Vincenzo. 1999. "The Importance of Entrepreneurship for Wealth Concentration and Mobility." *Review of Income and Wealth* 45:1-19.
- Renzulli, Linda A., Howard Aldrich, and James Moody. 2000. "Family Matters: Gender, Networks, and Entrepreneurial Outcomes." *Social Forces* 79:523-546.
- Reynolds, Paul D. 2000. "National Panel Study of U.S. Business Startups: Background and Methodology." In *Databases for the Study of Entrepreneurship*. 4:153-227.
- Reynolds, Paul D. and Sammis B. White. 1997. *The Entrepreneurial Process: Economic Growth, Men, Women, and Minorities*. Westport, CT: Quorum Books.
- Reynolds, Paul D., S. Michael Camp, William D. Bygrave, Errko Autio, and Michale Hay. 2001. *Global Entrepreneurship Monitor: 2001 Executive Report*. Kansas City, MO: Kauffman Center for Entrepreneurial Leadership.
- Robinson, Robert V. 1984. "Reproducing Class Relations in Industrial Capitalism." *American Sociological Review* 49:182-96.
- Robinson, Robert V. and Maurice A. Garnier. 1985. "Class Reproduction Among Men and Women in France: Reproduction Theory on Its Home Ground." *American Journal of Sociology* 91:250-280.
- Robinson, Peter B. and Edwin A. Sexton. 1994. "The Effect of Education and Experience of Self-Employment Success." *Journal of Business Venturing* 9:141-156.
- Schoonhoven, Claudia Bird, Kathleen M. Eisenhardt, and Katherine Lyman. 1990. "Speeding Products to Market: Waiting Time to First Product Introduction in New Firms." *Administrative Science Quarterly*, 35:177-207.
- Schumpeter, Joseph A. 1934. *The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle*. Cambridge, MA: Harvard University Press.
- Shaver, Kelly G., Nancy M. Carter, William B. Gartner, and Paul D. Reynolds. 2001. "Who is a Nascent Entrepreneur? Decision Rules for Identifying and Selecting Entrepreneurs in the Panel Study of Entrepreneurial Dynamics (PSED)." Paper presented at the Babson-Kauffman Entrepreneurship Research Conference, Jönköping, Sweden.

- Stinchcombe, Arthur. 1965. "Organizations and Social Structure." Pp. 142-193 in *Handbook of Organizations*, edited by J. G. March. Chicago: Rand McNally.
- U.S. Bureau of the Census. 1992. *Economic Census*. Washington, D.C.: U.S. Government Printing Office.
- Winborg, Joakim and Hans Landstrom. 2000. "Financial Bootstrapping in Small Businesses: Examining Managers' Resource Acquisition Behaviors." *Journal of Business Venturing* 16:235-54.

**Table 1: Strengths and Limitations of Data Sources for Studying Nascent Entrepreneurs**

<b>Data Type</b>	<b>Data Sources</b>	<b>Strengths to Studying Nascent Entrepreneurs</b>	<b>Limitations to Studying Nascent Entrepreneurs</b>	<b>Citations</b>
Longitudinal Surveys	National Longitudinal Surveys; Panel Study of Income Dynamics	<ul style="list-style-type: none"> <li>• Observations of transitions into self-employment over time</li> <li>• Ability to model delayed impact of key variables (e.g., financial)</li> <li>• Ability to study intergenerational effects</li> </ul>	<ul style="list-style-type: none"> <li>• Restricted to certain populations (e.g. White, Young Men)</li> <li>• Samples size reduces over time due to attrition</li> <li>• Cohort effects</li> </ul>	<ul style="list-style-type: none"> <li>• Evans and Jovanovic (1989)</li> <li>• Evans and Leighton (1989)</li> <li>• Fairlie (19990)</li> </ul>
Businesses	Characteristics of Business Owners; Dun and Bradstreet	<ul style="list-style-type: none"> <li>• Large samples</li> <li>• Over-sampling of females and minority groups</li> <li>• Industry specific analytical capabilities</li> </ul>	<ul style="list-style-type: none"> <li>• Selection bias towards examining existing businesses</li> </ul>	<ul style="list-style-type: none"> <li>• Bates (1997)</li> </ul>
Tax Records	Internal Revenue Service Tax Returns	<ul style="list-style-type: none"> <li>• Assess specific variables related to legal formation of start-up and financial resources</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of key control variables, such as race and education</li> </ul>	<ul style="list-style-type: none"> <li>• Holtz-Eakin et. al. (1994)</li> </ul>
Census	Current Population Surveys, PUMS	<ul style="list-style-type: none"> <li>• Ability to study impact of wage earnings on the decision to be self-employed</li> </ul>	<ul style="list-style-type: none"> <li>• Quality of wage data raises complications in analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Devine (1994)</li> <li>• Fairlie and Meyer (1996)</li> </ul>
Social Surveys	General Social Surveys	<ul style="list-style-type: none"> <li>• Rich demographic information over time</li> </ul>	<ul style="list-style-type: none"> <li>• Not focused on entrepreneurs</li> </ul>	<ul style="list-style-type: none"> <li>• Butler and Herring (1991)</li> <li>• Greene (2000)</li> <li>• Hout and Rosen (2000)</li> </ul>
Survey of Entrepreneurs	Panel Study of Entrepreneurial Dynamics (PSED)	<ul style="list-style-type: none"> <li>• Targeted at entrepreneurs</li> <li>• Specific measures of background characteristics</li> </ul>	<ul style="list-style-type: none"> <li>• Comparison group not sampled from primary sample of nascent entrepreneurs</li> </ul>	<ul style="list-style-type: none"> <li>• Reynolds (2000)</li> </ul>

**Table 2: Descriptive Statistics for Variables Used (PSED)**

<b>Variable</b>	<b>Value</b>	<b>Variable</b>	<b>Value</b>
<b><i>Dependent Variable</i></b>		<b>CONTROL VARIABLES</b>	
Nascent Entrepreneurs	6%	Mean Age	42.4
Comparison Group	94%	Standard Deviation	13.8
<b><i>Independent Variables</i></b>		Male	47%
<b>FINANCIAL RESOURCES VARIABLES</b>		<b>Race</b>	
Household Net Worth		White	73%
Non-positive	7%	Black	11%
\$0-\$100,000	51%	Hispanic	7%
Mean	\$203,216	Other	8%
Standard Deviation	\$476,035		
Household Income (Annual)		Foreign Born	6%
Mean	\$54,354	Either Parent Foreign Born	12%
Standard Deviation	\$44,456		
<b>HUMAN CAPITAL VARIABLES</b>		<b>Marital Status</b>	
Education		Married	54%
Up to High School Degree	24%	<b>Region</b>	
Technical/Vocational	5%	Northeast	23%
Some College	37%	South	32%
College Degree	18%	Midwest	24%
Post College	15%	West	21%
Mean General Full-time Work Experience (Years)	18.3		
Standard Deviation	11.7		
Mean Managerial Experience (Years)	8.4		
Standard Deviation	8.8		
Currently Self-Employed/Small Business Owner	25%		
Helped start new business	52%		
Either Parent Self-Employed	50%		
Mean Family Members Self-Employed	25%		
Standard Deviation	0.23		
Mean Friends Self-Employed	25%		
Standard Deviation	0.21		

**Table 4: Logistic Regression Analysis of Being a Nascent Entrepreneur on Financial Resources and Human Capital Variables.**

	Odds-Ratio	S.E.	Coefficient
<b><i>Financial Resources</i></b>			
Household Net Worth (Ln)	1.111	(0.097)	0.106
Negative Wealth Indicator	1.422	(0.457)	0.352
Household Income (Ln)	1.035	(0.089)	0.034
<b><i>Human Capital</i></b>			
<b>Education</b>			
Technical/Vocation	1.070	(0.467)	0.068
Some College	1.533*	(0.372)	0.427
College Graduate	2.249**	(0.697)	0.810
Post College	1.702	(0.574)	0.532
Work Experience (Ln)	1.463*	(0.304)	0.380
Managerial Experience (Ln)	0.960	(0.107)	-0.041
Helped Start Other Businesses	0.481**	(0.107)	-0.732
Currently Self Employed	8.227**	(1.837)	2.107
Parents Self Employed	0.762	(0.155)	-0.272
Relatives Self Employed (%)	2.280*	(1.030)	0.824
Friends Self Employed (%)	0.983	(0.497)	-0.017
<b>Control Variables</b>			
Age (Ln)	0.143**	(0.076)	-1.944
Male	2.132**	(0.419)	0.757
<b>Race</b>			
Black	2.333**	(0.555)	0.847
Hispanic	1.743*	(0.562)	0.556
Other	0.829	(0.336)	-0.188
Foreign Born Either Parent	1.281	(0.536)	0.247
Foreign Born Married	0.714	(0.249)	-0.338
<b>Region</b>			
South	1.393	(0.284)	0.332
Midwest	0.832	(0.228)	-0.184
West	0.929	(0.258)	-0.074
West	1.045	(0.316)	0.044
Observations	995		
AIC	434.07		

\* significant at 5% level; \*\* significant at 1% level (one-tailed test)

**Reference Categories:** Education (Up to High School Degree); Race (White); Region (Northeast)

**Table 5: Funding Sources of Nascent Entrepreneurs**

<b>Funding Sources</b>	<b>%</b>
Credit cards	31%
Spouse	21%
Friends/Family	15%
Bank Loan	13%
SBA Loan	4%
Second Mortgage	3%
Venture Capital	3%
Personal Finance Company	3%
Current Employer	3%

**Table 6: Pursuing Bank Funding by Wealth of Nascent Entrepreneurs**

<b>Household Net Worth</b>	<b>Cases</b>	<b>Will Pursue</b>	
		<b>Bank Loan</b>	<b>Approved Bank Loan</b>
Zero or less	14	22%	50%
\$1-\$50,000	33	12%	48%
\$50,001-\$100,000	20	18%	45%
\$100,001-\$250,000	20	13%	58%
Over \$250,001	17	13%	50%
<b>Total</b>	<b>104</b>		