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START-UP RESOURCES AND ENTREPRENEURIAL DISCONTINUANCE: THE CASE OF NASCENT ENTREPRENEURS[1]

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ABSTRACT

Built on the resource-based view of the firm, this study addresses two major research questions: (1) what resources are salient in entrepreneurial discontinuance; (2) To what extent, does the impact of resources on the odds of discontinuance vary across the nature of startup between high technology and non-technology? These questions are examined using 830 nascent entrepreneurs from the Panel Study of Entrepreneurial Dynamics (PSED). Overall, we find that not all resources are equally salient, especially when comparing technology-based and non-technology-based nascent entrepreneurs. With the exception of education and managerial experience, human capital has limited influence on discontinuance. Our results lend no support for our social capital hypothesis. Financial capital significantly decreases the odds of discontinuance. Additionally, the odds of discontinuance of technology-based and non-technology-based nascent entrepreneurs are affected by a different set of resources. Implications and future research directions are proposed.

Keywords: entrepreneurial discontinuance, PSED, technology, resource-based view

INTRODUCTION

New firms create new jobs, open up opportunities for upward social mobility, foster economic flexibility, and contribute to competition and economic efficiency (Birch, 1987). The constant churning of new business starts and closures (commonly referred to as "creative destruction") creates an atmosphere where the success of a venture is uncertain. Such dynamism leads many to state that failure is a norm, rather than the exception (Dean, Turner, & Bamford, 1997). Yet, businesses do not fail as often as conventional wisdom, according to a study by Headd (2003). According to this study, "Two-thirds of new employer firms

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survive at least two years, and about half survive at least four years. Owners of about one-third of the firms that closed said their firm was successful at closure." Nascent entrepreneurs suffer from the liability of newness which refers to the fact that start-ups often falter because they are not able to adjust quickly enough to their new roles and lack a track record with outside suppliers and buyers (Hagert et al, 2006; Stinchcombe, 1965).

It is impossible to talk intelligently about a theory of entrepreneurship without first acknowledging the pivotal role of entrepreneurial failure (Amaral et al, 2007; McGrath, 1999). Most of the entrepreneurship literature has focused on successful ventures, so little is known about why ventures fail. Even less is known about *how* they fail. Our understanding of entrepreneurship will never be complete until we have a clear understanding of what causes its discontinuation. Similarly, Timmons and Spinelli (2007) raise the question of whether there are any exceptions to the general rule of failure, or, "are we faced with a punishing game of entrepreneurial roulette?" (p. 85). Developing a deeper understanding of new venture failures would provide critical information for several key stakeholders in a new venture —individual entrepreneurs, venture financiers, and government policymakers.

An increasing number of entrepreneurial scholars are using the resource-based view (RBV) of the firm to better understand the role of resources in new venture creation and development (i.e., Chandler & Hanks, 1994; McGrath, 1996; Lichtenstein & Brush, 2001). In the theory of RBV, organizations are viewed as "bundles of resources," which are defined as both tangible and intangible assets that are tied to the firm in a relatively permanent fashion (Caves, 1980; Wernerfelt, 1984). Resources include not only the financial, physical, and human assets, but also the ability of the people in each area to formulate and implement the necessary functional objectives, strategies, and policies (Wheelen & Hanger, 2008). According to these studies, it is the identification and acquisition of resources (rather than deployment and allocation activities) that are crucial for the early stages of new venture development (Katz & Gartner, 1988; Brush & Greene, 1996). Most of studies using a resource-based view so far have focused on the new ventures at inception. Little attention has been paid to the nascent stage during which a new venture is developed.

Based on the resource-based view of the firm, the present research addresses two major research questions: (a) what resources are salient in new venture survival or failure? and (b) to what extent does the impact of resources on new venture survival or failure vary across the nature of high-technology and non-technology start-ups? This research mainly focuses on the venturing activities of nascent entrepreneurs and seeks to predict the survival of nascent entrepreneurs based on factors that can be observed at the time of the initial start-up process. Indicators of initial resource endowment including physical, human, financial and social capitals are taken into consideration to determine how they might bear upon the probability of survival over time. For example, Knotts et al. (2008) found that resources applied to production rather than marketing led to a higher survival rate.

The term "failure" in the *Oxford English Dictionary* is defined as "to become deficient, to be inadequate." In general, many different terminologies are related to business failure, such as firm closures, entrepreneurial exit (Gimeno et al., 1997), dissolution, discontinuance, insolvency, organizational mortality, bankruptcy, and

organizational failures. These terminologies have been used interchangeably with little distinction. Normally, *entrepreneurial failure* is referred to as the cease of operation for financial reasons. Since we examine nascent entrepreneurs during the firm gestation process, one type of entrepreneurial failure is the discontinuance of venturing efforts by entrepreneurs. Here we define *entrepreneurial discontinuance* as an action taken by a nascent entrepreneur to suspend his or her venture creation effort during venture gestation process. The reasons leading to entrepreneurial discontinuance are multiple—the funding may not have materialized, the prospect became less optimistic, or the opportunity costs of leaving a well-paid job were difficult to overcome. In general, entrepreneurial discontinuance has a broader connotation than venture failure. Put differently, there may only be a small number of firms that experience entrepreneurial discontinuance for reasons that can be attributable to failure.

Following Cooper, Gimeno-Gascon, and Woo (1994), our focus here is on the initial resources that have direct bearing on venture creation process. Cooper at al. (1994) provide a few convincing reasons why such a focus is particularly appropriate. First, the characteristics of founding can determine an organization's strategies, which in turn weigh on the capabilities developed in the new venture and whether it survives or fails. Although there is a growing consensus that resource bundles develop and change over time, the initial resource endowment of a new venture does make a great difference in venture survival (Stevenson & Gumpert, 1985). Further, venture creation is a process of experimentation characterized by trial and error. Vinogradov and Isaksen (2008) found lower rates of survival by immigrants versus natives, presumably because immigrants had fewer opportunities for experimentation. Initial resources may act as a buffer against the liability of a new and small business.

The paper is structured as follows: The paper first reviews relevant research related to entrepreneurial failure, including a wide range of variables that have been employed to predict entrepreneurial failure. It is followed by a resource-based model of entrepreneurial failure and a series of hypotheses. Section three details research methodology, including sample description, measures, and statistical models. The next section provides results. Finally, the paper is concluded with discussion and implications for future research.

THEORETICAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

Many resource-based theorists view organizations as consisting of a basic set of resources at the time of their founding (e.g., Wheelen & Hunger, 2008; Wernerfelt, 1984), and these resources confer competitive advantages in and of themselves (e.g., Barney, 1991; Hall, 1992). According to Barney, "firm resources include, among other things, all assets, capabilities, organizational processes, firm attributes, information, knowledge controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness" (Barney, 1991, p. 101). Resources are categorized into several specific typologies, including human, physical, capital, and technological (Grant, 1991). According to this perspective, sustainable competitive advantage exists when the resources possess value, uniqueness, nonsubstitutability, and inimitability (Barney, 2003;, 1991; Wernerfelt, 1984).

An increasing number of entrepreneurship scholars are using the resource-based theory of firms to better understand the role resources play in new venture

development (Wheelen & Hunger, 2008; Chandler & Hanks, 1994; McGrath, 1996). The process of entrepreneurship begins with a business concept envisioned by an entrepreneur and proceeds to the point wherein it is necessary to identify and acquire the physical, human, and capital resources necessary for start-up (Timmons, 1994). In essence, new venture creation is a creative process of combining opportunities and resources (Gartner, 1985; Shane & Venkataraman, 2000). For the new venture to survive and thrive, the entrepreneurs have to create a unique configuration of resources to compete against rivals who are already established in the marketplace.

Entrepreneurs' Human Capital

Most researchers in the field have learned that the founder is the key to venture survival or failure (Hatch & Dyer, 2004). The studies investigated the effects of the founder's education, technical and industry-specific experience, managerial experience (e.g., Bates, 1990a, 1980b). This stream of research is mostly built on human capital theory (Becker, 1975) and in general argues that high human capital endowment of the founder decreases the opportunity for entrepreneurial failure (Bruns et al., 2008). Human capital derives from investments individuals make in themselves as employees, often through education and additional training. Presumably, the more specific the human capital is to the nature of the business start-up, the lower the likelihood of entrepreneurial failure. Conversely, a deficiency in human capital makes new firms more vulnerable.

Bruderl et al. (1992) elaborated on two mechanisms by which human capital improves firm survival chances and decreases failure rates. First, the authors argued that founders with higher human capital are able to recognize attractive business opportunities, have greater knowledge of how to set up a business successfully, and are in a better position to evaluate the prospects of future firms and to set up larger and better financially-equipped businesses. The authors called this "selection effects" (p. 229). Second, they argued that greater human capital leads to higher productivity of the founder, which results in greater efficiency in organizing and managing the production process and the ability to attract more customers and new capital from investors. This is especially true in the early stage of venture development when a firm's legitimacy is in question and customers and bankers often use the human capital of the founder as a screening device. Following Becker (1975), Bruderl et al. (1992) tested the impact of general human capital and specific capital on firm failure rates in a group of 1,849 German business founders. The authors found that general human capital characteristics such as years of schooling and years of working experience significantly decrease a firm's failure rate. For specific human capital, industry-specific experience is crucial. However, self-employment experience, parents' self-employment experience, and a founder's experience in managing and directing employees have no significant direct bearing on firms' failure rates.

In his study of small business in the construction sector in Great Britain, Hall (1994) found that human capital was the most pivotal factor in differentiating survived from failed firms. Using a dataset of 78,441 small traders from firm registration and de-registration in Germany during the years of 1980 to 1984, Preisendorfer and Voss (1990) explored the relationship between the founder's age and firm morality rate. They found that firm mortality rate is low for middle-aged founders but high for young and older founders, suggesting an inverted U-shaped relationship between founders' age and firm mortality. By contrast, using data from the U.S. Bureau of Census, Headd (2000) found gender, race, and age play a small, if any, role in survivability.

But he discovered that founders with college educations have a higher survival rate.

Carter et al. (1997) found that experience starting other businesses, working in the industry, starting a business with partners, and having employees all significantly decrease the odds of discontinuance. Their findings suggest that the human capital of the founder or founding teams and the scale of the business at startup are equally important. Additionally, the researchers also found that after resources and founding strategies are controlled for, female-owned businesses have a higher probability of discontinuance than male-owned businesses.

Based on the above argument, we hypothesize:

H1: *Overall, nascent entrepreneurs' human capital decreases the probability of entrepreneurial discontinuance.*

H1a: *General human capital such as education and age is negatively related to entrepreneurial discontinuance.*

H1b: *Managerial experience is negatively related to entrepreneurial discontinuance.*

H1c: *Industrial experience is negatively related to entrepreneurial discontinuance.*

H1d: *Startup experience is negatively related to entrepreneurial discontinuance.*

Social Capital

Social capital has traditionally been conceptualized as a set of social resources (Adler & Kwon, 2002) embedded in relationships (e.g., Burt, 1992). Scholars have espoused a broader definition of social capital, including not only social relationships but also the norms and values associated with them (e.g., Coleman, 1990). *Social capital* is therefore broadly described by researchers as an asset embedded in relationships of individuals, communities, and networks or societies (Burt, 1997; Nahapiet & Ghoshal, 1998). More recently, the concept of social capital has found its way into entrepreneurship research (e.g., Liao and Welsch, 2003).

Social capital is crucial to entrepreneurs, encompassing both actual and potential resources flowing through a relationship network. Social capital can be converted into tangible and intangible benefits, including increased trust and cooperation from others, financial capital or assets, and equipment purchased at favorable prices (Kuratko & Welsch, 2004). It is an instrumental resource through which an entrepreneur could obtain financial support, gain legitimacy, acquire additional social capital, and facilitate transactions. It is conceivable that social capital plays a significant role in affecting a firm's failure. Based on these arguments, we propose:

H2: *Nascent entrepreneurs' social capital decreases the probability of entrepreneurial discontinuance.*

Financial Capital

For nascent entrepreneurs, financial resources are primarily money that is limited to whatever the founder or founding team is able to raise, usually from personal finances, family, and friends (Shulman, 1997). External funding sources are often unavailable due to the small size, unknown track record, and future uncertainty of the firm. Therefore, the initial financial capital a nascent entrepreneur has or is able to raise is probably the sole source of funds to overcome the new venture liability of newness and smallness. Therefore, we expect:

H3: *Nascent entrepreneurs' financial capital decreases the probability of entrepreneurial discontinuance.*

Compared with non-technology-based start-ups, technology-based start-ups are more complex and have greater expectations for human capital of the nascent entrepreneurs. Technology-based firms that have stronger resources are in a better position to survive environmental shocks and weather the inevitable bad decisions; therefore, they are less likely to be discontinued. Preliminary data from BizMiner Business Failure Rate Index (2008) shows that the technology industry (SIC Code 3500) has a lower two-year failure rate (22.39%) than total U.S. rate combined (35.56%) among start-ups. There is also considerable variation across multiple industries, suggesting that there are other phenomena at work. Thus, the relative salience of resources on entrepreneurial discontinuance would vary across our sample of technology- and non-technology–based nascent entrepreneurs. Therefore, we hypothesize:

H4: *Overall, the impact of resources on entrepreneurial discontinuance for technology-based nascent entrepreneurs would be different as compared to that of non-technology-based ones.*

RESEARCH METHOD

Sample description

The data for this study was obtained from the Panel Study of Entrepreneurial Dynamics (PSED). The PSED is a longitudinal data set of individuals in the process of starting businesses who were identified from a random digit dialing telephone survey of 64,622 adults in the United States who are 18 years of age or older. A nascent entrepreneur is identified if he/she answered yes to the following two questions: (1) Are you, alone or with others, now trying to start a new business? (2) Are you, alone or with others, now starting a new business or new venture for your employer? Is the effort a part of your job assignment? All of these individuals were considered candidates for the nascent entrepreneur interview if they met three additional criteria. First, they were expected to be owners or part-owners of the new firm. Second, they had to have been active in trying to start the new firm during the past 12 months. Third, the effort was still in the start-up or gestation phase and was NOT an infant firm. Follow-up surveys were conducted at 12-month intervals to evaluate the status of the start-up effort. Data related to nascent entrepreneurs was collected using a combination of survey and telephone interviews. Survey questionnaires included items related to opportunity recognition, entrepreneurial climate, start-up problems, start-up context, and reasons for starting a new venture as well as nascent entrepreneurs' demographics, background, and personal dispositions. Telephone interview questions were concerned with the nature of the start-up, start-up activities, start-up team, start-up funding requirements, future expectations for the new business, personal decision-making style, market and competition assessments, and nascent entrepreneurs' social networks. A more detailed description of the background and methodology of the PESD data set can be found in Reynolds (2000).

The dataset used in this analysis consists of 830 nascent entrepreneurs, among which 446 are from a mixed sample, 223 from a woman over-sample, and 161 from a minority over-sample. The general public (control group) was deleted from the database. Discontinued nascent entrepreneurs were identified by comparing the follow-up survey with the first-round survey. Missing from the following up survey is viewed as discontinuation of venturing efforts by a nascent entrepreneur. All nascent entrepreneurs were also asked to identify

the nature of business as a technology- versus non-technology-based startup.

Measurement

Table 1 provides a summary of measures of dependent and independent variables. The identification of technology-based nascent entrepreneurs and non-technology-based nascent entrepreneurs is based upon a self-claimed response to the question, "do you consider your business as technology-based?" Response to yes is coded as "1", otherwise "0".

Table 1: Variable definitions and Measures

Variable Definition	Code	Item Descriptions
Dependent Variable		
Entrepreneurial Discontinuance	ENT_DIS	1 if discontinued; 0 if survived
Independent Variable		
General Human Capital		
Education	Q343	Educational attachment (0 - up to eighth grade; 1 - some high school; 2 - high school; 3 - tech or vocational degree; 4 - some college; 5 - community college; 6 - college; 7 - some graduate training; 8 - MS, MBA, MA; 9 - LLB, Ph.D, degree;
Age	NCAGE	by years
Management Experience		
Year	Q341	Years of managerial, supervisory and administrative experience
Number of people	Q342LN	Number of people supervised; (log transformation)
Professional experience		
General working experience	Q340	Years of paid full time experience
Industry-specific	Q199	Years of working experience in startup industry
Startup Experience		
Personal Startup Experience	Q200	Number of businesses helped to start
Parent's startup experience	Q362	Parents: self-employed/own a business (1 - yes; 0 - No)
Social Capital		
	Q242	Number of people help with career/startup
Financial Capital		
Personal Funding	Q198	Personal fund in startup (1 - Yes; 0 - No)
Other sources	Q271	Asked funding from friends and family (1 - yes; 0 - No)

Models

A logistic regression model is employed to determine the relative impact of different resources on entrepreneurial discontinuance, with entrepreneurial discontinuance as the dependent variable and various resources as the independent variables. With the exception of age, which is entered into the model as squared to examine its curvilinear effect, other independent variables are examined linearly.

Let Y be the dichotomous random variable $P(Y = 1|x) = \pi(x)$ denoting discontinued (1) versus continued (0). Let $X = (x_L, x_2, \ldots, x_{p\text{-}L})$ be a collection of predictors of various resources. Denote the conditional probability that the outcome is present by where $\pi(x)$ has the form:

$$\pi_i = \frac{\exp(\beta_o + \beta_L x_{iL} + \beta_2 x_{i2} + \ldots + \beta_{p\text{-}L} x_{i,p\text{-}L})}{1 + \exp(\beta_o + \beta_L x_{iL} + \beta_2 x_{i2} + \ldots + \beta_{p\text{-}L} x_{i,p\text{-}L})}$$

The same logistic model will be tested across both high technology and non-technology nascent entrepreneurs in an attempt to examine the relative salience of resource across different samples.

RESULTS

Table 2 provides descriptive statistics. On average, the sampled nascent entrepreneurs had a college degree or some college education, were in their early 40s, had more than 9 years of managerial experience and 18 years of working experience. Most of them have invested personal funds into start-ups (88%) and more than half of their parents have had start-up experience.

As indicated in Table 3, the chi-squares for all three models are statistically significant; the scores of the Hosmer and Lemeshow Test for all three models are 5.931 (p = 0.655), 11.077 (p = 0.197) and 8.960 (p = 0.346) respectively. All these indicators suggest satisfactory goodness of fit index for all three models.

Model I of the full sample suggests that most of the various types of resources (human, social, and financial) are negatively related to the probability of entrepreneurial discontinuance, even though not all of them are statistically significant. Specifically, we find that education, managerial experience, general working experience, and startup experience have no direct relevance to the discontinuation of startup process, lending no support for hypotheses H1b and H1d. However, we find a significant curvilinear effect of age on entrepreneurial discontinuance (B = -0.308; $p < 0.05$), providing partial credence to hypothesis H1a. Surprisingly, industrial experience is positively rather than negatively related to the probability of entrepreneurial discontinuance. Such a relationship is statistically significant—this finding is particularly interesting since the other experience variables are not significant (e.g., working, personal start-up, and parent's start-up). Therefore, hypothesis H1c is partially supported, however, in the opposite direction. Overall, our findings provide limited support for hypothesis H1.

Hypothesis H2 stating the relationship between social capital and entrepreneurial discontinuance is not supported (B = 0.025, Wald = 0.533, p>0.1). However, we find significant, negative impact on personal funding on discontinuance (B=-1.036; Wald = 5.26, p<0.05). Financial support from friends and family is negatively related to discontinuance, but statistically insignificant. Therefore, hypothesis H3 is only partially supported.

Model II and Model III compare the relative salience of resources on entrepreneurial discontinuance across both technology-based and non-technology-based nascent entrepreneurs. We find education (B = -0.26, $p < 0.1$), managerial experience (B = -0.136, $p < 0.05$), personal funding (B =-2.386, $p < 0.05$) and financial supports from friends and family (B = -1.566, $p < 0.05$) are all

Table 2: Descriptive Statistics and Correlation Matrix

	Mean	Std. Dev.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Education	4.94	1.98	1.000										
(2) Age	40.37	10.12	0.190***	1.000									
(3) Managerial Experience (yr)	9.23	7.61	0.084	0.530	1.000								
(4) Managerial Experience (number)	2.61	1.25	0.069	0.179***	0.342***	1.000							
(5) Working Experience	18.31	9.70	0.035	0.755***	0.559***	0.196***	1.000						
(6) Industry-specific Experience	10.88	11.21	0.051	0.459***	0.210***	0.175***	0.362***	1.000					
(7) Personal Startup Experience	1.33	2.19	0.003	0.149**	0.222***	0.250***	0.112*	0.119*	1.000				
(8) Parent's startup Experience	0.57	0.50	0.122*	0.036	0.088	0.035	0.058	0.035	0.098	1.000			
(9) Social capital	3.56	4.32	0.063	-0.049	0.024	0.126*	-0.093	-0.061	0.078	0.031	1.000		
(10) Personal funding	0.88	0.32	0.010	-0.009	-0.041	0.028	0.038	-0.082	0.011	-0.017	0.025	1.000	
(11) Funding from friends/family	0.17	0.37	-0.017	-0.186	-0.135**	-0.064	-0.178	-0.058	0.073	0.150	0.106	0.053	1.000

***p<0.01; **p<0.05; p<0.1

Table 3: Logistic Regression Models

	Model I *Full Sample*			**Model II** *Tech Nascent Entrepreneurs*			**Model III** *Non-Tech Nascent Entrepreneurs*		
	B	Wald	Exp(B)	B	Wald	Exp(B)	B	Wald	Exp(B)
(1) Education	-0.123	2.260	0.884	-0.260	2.753*	0.771	-0.134	1.440	0.875
(2) Age*Age	-0.308	5.251**	0.735	0.055	0.056	1.057	-0.589	9.357***	0.555
(3) Managerial Experience (yr)	-0.047	2.646	0.954	-0.136	5.775**	0.873	-0.016	0.130	0.984
(4) Managerial Experience (number)	0.153	1.224	1.166	0.280	0.894	1.324	0.093	0.268	1.097
(5) Working Experience	-0.008	0.100	0.992	-0.014	0.129	0.986	-0.034	0.762	0.967
(6) Industry-specific Experience	0.056	11.547***	1.057	0.056	2.415	1.058	0.087	13.549***	1.091
(7) Personal Startup Experience	-0.033	0.174	0.967	-0.064	0.114	0.938	-0.039	0.130	0.961
(8) Parent's startup Experience	0.220	0.487	1.246	0.978	2.268	2.660	-0.196	0.228	0.822
(9) Social capital	0.025	0.533	1.025	0.111	2.645	1.118	-0.017	0.158	0.983
(10) Personal funding	-1.036	5.260**	0.355	-2.386	6.339**	0.092	-0.073	0.015	0.930
(11) Funding from friends/family	-0.551	1.571	0.576	-1.566	3.190**	0.209	-0.567	0.895	0.567
Constant	4.372	8.051	79.203	1.385	0.248	3.995	7.643	11.995	2086.613
Chi-square (df=11)	37.344***			22.473**			36.655***		
-2 Log likelihood	257.266			77.295			151.836		
Cox & Snell R Square	0.150			0.253			0.221		
Hosmer and Lemeshow Test (Chi-square) (significance, df=8)	5.931 (p=0.655 df = 8)			11.077 (p=0.197 df = 8)			8.960 (p=0.346, df = 8)		

***p<0.01; **p<0.05; p<0.1

negatively related to discontinuance for the technology-based nascent entrepreneurs but not for the non-technology group. By contrast, age (B = -0.589, $p < 0.01$) and industry-specific experience (B = 0.087, $p < 0.01$) all have significant impact on discontinuance for the non-technology-based nascent entrepreneurs, but not for the technology-based group. Therefore, hypothesis H4 is fully supported.

DISCUSSION

Researchers who apply resource-based theory to the field of entrepreneurship generally believe that resources do matter in venture creation and venture performance. However, the question is not whether resource endowment is relevant or not, but how relevant resource endowment is and which resource is most salient. Our examination of human, social, and financial resources of nascent entrepreneurs shed light on these questions. Overall, our findings suggest that resource endowment does decrease the probability of entrepreneurial discontinuance. Nevertheless, not all resources are equally salient, especially when comparing technology-based and non-technology-based nascent entrepreneurs.

As far as human capital is concerned, education and managerial experience are mostly salient in their impact on entrepreneurial discontinuance of technology-based nascent entrepreneurs. Compared with non-technology-based start-ups, technology-based startups are characterized by: (a) a knowledge intensive process, which calls for higher education attainment; and (b) a complex process which requires the entrepreneurs to integrate a wide variety of demands, ranging from market to intellectual property laws to venture capitalists. Nascent entrepreneurs with managerial experience have a vantage point.

We also find an inverted U-shaped relationship between age and entrepreneurial discontinuation. Such a relationship suggests that younger and older nascent entrepreneurs may have higher probability of discontinuation. As age increases, the probability of discontinuation decreases. However, as age reaches a certain point, the probability of discontinuation starts to increase again. Our finding is consistent with Preisendorfer and Voss (1990), which explore the relationship between founders' age and firm mortality rate.

Surprisingly, we fail to identify any significant impact of working experience and start-up experience on discontinuance. Our finding is consistent with Bruderl et al. (1992), but contradictory to Carter et al. (1997). Nascent entrepreneurs with start-up experience could be more adaptive. However, quick adaptation may not necessarily translate into a higher survival rate. For example, failed startup experience coupled with risk aversion propensity may accelerate the process of discontinuance when a start-up effort runs into challenges. On the other hand, successful startup experience in the past coupled with a risk-taking propensity may blindside nascent entrepreneurs from recognizing the potential downfalls that ultimately lead to discontinuance.

Our finding that industry-specific experience increases the odds of discontinuance of the non-technology-based nascent entrepreneurs is counterintuitive. Many researchers have pointed to the importance of industry-specific experience on a firm's survival, and it is widely held that such an experience would decrease the probability of discontinuance (e.g., Bruderl et al., 1992). There are a few possible explanations to our unique findings. First, similar to the argument of "strength of weak tie" (Granovetter, 1985), entrepreneurs

who have long working experience in the industry where the new venture is being created may be less innovative or inflexible than those who have less experience. Second, an entrepreneur with longer experience in an industry may also entrench in the existing system and structure, which blindsides him or her from recognizing opportunities and threats.

Findings from this study also suggest that social capital plays a limited role, if any, in entrepreneurial discontinuance. Empirical studies suggest that social capital is positively related to entrepreneurial growth aspiration for both technology- and non-technology–based nascent entrepreneurs (Liao and Welsch, 2003). However, the impact of social capital may not be symmetrical. Stated differently, we can assume that lack of social capital may definitely lead to discontinuance.

Our results illustrate the importance of financial capital, particularly personal funding in a firm's survival at the nascent stage, when the liability of newness and smallness is great. Ample financial capital enables entrepreneurs to mainly focus on building a business, rather than being constantly under the pressure of balancing cash flows. Consequently, well-funded start-ups should have a significantly lower probability of discontinuance.

CONCLUSIONS

Based on the resource-based theory of the firm, this paper makes several theoretical and methodological contributions. First, our study is among the early research that focuses on entrepreneurial discontinuance —an important yet underexplored topic. So far, too much attention has been paid to venture growth and venture performance. This paper represents an initial effort in examining the relative salience of various resources in entrepreneurial discontinuance. Secondly, this study is a step forward toward building longitudinal entrepreneurship failure research. The nature of phenomenon of entrepreneurial failure calls for a longitudinal research design, which traces down individual firms from birth to death, and then identifies the individual, organizational, and context factors that may contribute to a firm's failure. Instead of seeking out answers after the fact—post-hoc realization and rationalization of why a venture fails—researchers should make ongoing observations of the entrepreneurs, the environments, and the firm. This study first identifies a group of nascent entrepreneurs, and then tracks down four types of nascent entrepreneurs over time: (a) those who discontinue their venture creation efforts; (b) those who create new business ventures but still fail in the end; (c) general public individuals who are not involved in any venture creation activities; and (d) those who continue to operate and grow their businesses. Only through this longitudinal study with a quasi-experimental design approach, will we be able to uncover the factors that differentiate failed group from others.

However, the current findings should be interpreted with caution. One major caveat to the existing study is the inability to draw a causal relationship between various resources and entrepreneurial discontinuance. Additionally, as stated earlier, entrepreneurial discontinuance is an important concept for the research of venture gestation and is different from venture failure. The findings here could not pinpoint as to exactly what causes nascent entrepreneurs to discontinue their venture creation efforts.

Notwithstanding, this study also yields several future research opportunities. First, the inconclusive findings regarding the relationship between start-up experience and the odds of discontinuance call for further research. Requiring further examination is the moderating effects of risk taking propensity. Additionally, resource endowment should be examined

in conjunction with founding strategies. Researchers have used "generalist" (r-strategists) and "specialist" (k-strategists) strategies as the classification scheme for new ventures (Hannan & Freeman, 1977). The generalists offer a wide array of products and services aiming at a broad range of customers, whereas the specialists focus on a niche market to avoid direct competition with larger and more established firms. Consequently, each founding strategy may have its own unique configurations of resources. The match between founding strategy and resource configuration should have direct relevance to firm survival or discontinuance. Finally, relative salience of resource in discontinuance should also take a venture's competitive strategies into consideration. One of the dimensions of competitive strategies is *market aggressiveness*, which is defined as "the depth and rapidity of resource-acquiring activities in either broad or narrow market domains" (Romanelli, 1989, p. 374). Aggressive firms may seek to acquire and control as many resources as possible, as quickly as possible. In contrast, efficient firms seek to protect an established position by harbouring scarce organizational resources. Therefore, it is generally expected that aggressive firms will have a higher likelihood of surviving their early years than efficient firms.

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