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Abstract

Access to financial capital is an important determinant of new firm survival and success. Drawing upon the literature on human capital and signaling theory, a series of hypotheses were proposed to disentangle the complex relationships among entrepreneurial human capital, a startup's benefit offerings and the probability of its obtaining early-stage external financing. Analysis of the results obtained on a sample of 2791 firms in a longitudinal panel dataset support most of the hypotheses. In particular, a startup's collective benefit offerings have an accelerating positive effect on the probability of its obtaining early-stage external capital. These findings imply that entrepreneurial human capital and a startup's benefit offerings signal the startup's underlying quality, which in turn affects investor decisions.

Introduction

A large number of startups seek external funding when founders have exhausted their own investment and the financial backing of their relatives and friends (Cassar 2004). Private equity financing, including venture capital (VC) and angel investment, in startups has grown tremendously in the U.S. over the past two decades. Researchers and practitioners have turned their attention to the inherent uncertainty of investor decision making; however, only a few studies have examined investor decisions in the context of nascent firms (Plummer, Allison, and Connelly 2016), and none has studied the effects of entrepreneurial human capital and benefit offerings. This study aims to fill this void by investigating the relationships among entrepreneurial generic and specific human capital, benefit offerings and the probability of a startup's obtaining early-stage external financing.

Hypotheses

Development of the hypotheses that follow is built upon signaling theory (Spence 2002) and human capital theory (Becker 1964; Wright, Coff, and Moliterno 2014). Human capital is valuable and rare for a firm, because individuals bring unique knowledge, skills and abilities, particularly highly specialized expertise (Barney 1991; Coff, and Kruscynski 2011; Hatch, and Dyer 2004). A firm with superior human capital can create greater economic value when it accesses and utilizes employees' knowledge, skills and abilities. In deciding whether or not to fund a startup, external investors rely on the quality signals of entrepreneurial human capital, including education, industry and startup experiences.

Hypothesis 1a: The generic human capital of the founders will increase the probability that a startup receives external financing.

Hypothesis 1b: The industry experience of the founders will increase the probability that a startup receives external financing.

Hypothesis 1c: The startup experience of the founders will increase the probability that a startup receives external financing.

Next, the startup's benefit offerings, as a valuable HRM practice, positively influence the probability of receiving external financing. Startups need to offer various benefits to attract, retain and motivate key personnel so as to create and maintain superior human assets. The provision of a combination of various benefits sends strong signals to external investors that the startup aims to enhance its human capital and motivate employees. The adoption of these HRM practices indicates that firms appreciate and support employees' contributions (Jiang, Lepak, Hu, and Baer 2012).

Hypothesis 2a: The HRM practices adopted by a startup will increase the probability that a startup receives external financing.

Hypothesis 2b: The HRM practices adopted by a startup will have an accelerating effect on the probability that a startup receives external financing.

Methods and Results

In this study, the hypotheses were tested with a sample of 2791 firms in the longitudinal panel database from the Kauffman Firm Survey (KFS). All variables were from the confidential KFS dataset provided by the National Opinion Research Center (NORC). The dependent variable external financing is measured by use of a dichotomous variable. The first independent variable, entrepreneurial human capital, is measured using three indicators – education, industry experience, and startup experience. The second independent variable, benefit offerings, is measured using a composite sum of seven indicators and was mean centered in the regression analyses. A comprehensive set of control variables was also included in our analysis.

Logistic regression analyses were used to investigate the determinants of early-stage external financing of startups. The base model in Table 1 included all the control variables. Independent variables were subsequently added in the full models. The analysis results support most of the hypotheses. However, the entrepreneurial industry working experience had no impact on the probability of receiving external capital, which implies that this important signal of entrepreneurial human capital is unnoticed by external investors.

	Model 1		Model 2		Model 3		Model 4	
	B	p value	B	p value	B	p value	B	p value
Control variables:								
Constant	1835.612	.999	1812.162	.999	1672.096	.999	1668.888	.999
State fixed effects		Yes		Yes		Yes		Yes
Metropolitan location	.305	.094†	.306	.097†	.298	.143	.322	.115
Industry fixed effects		Yes		Yes		Yes		Yes
Industry concentration1	.000	.195	.000	.103	.000	.116	.000	.099†
Industry concentration2	.000	.121	.000	.062†	.000	.073†	.000	.059†
Provide service	.226	.251	.191	.340	.354	.099†	.351	.102
Founding size	.162	.170	.037	.762	-.099	.502	-.104	.485
Total assets	-.050	.082†	-.062	.035*	-.085	.010*	-.078	.021*
Intellectual properties	.437	.000***	.365	.000***	.363	.000***	.364	.000***
Initial external financing	-1.669	.000***	-1.643	.000***	-1.622	.000***	-1.623	.000***
White	.064	.766	.166	.445	.378	.122	.372	.128
Highest working hours	.168	.000***	.179	.000***	.204	.000***	.212	.000***
Independent variables:								
Highest education			.199	.016*	.123	.183	.114	.221
Highest industry experience			.075	.323	.088	.299	.086	.310
Highest startup experience			.520	.000***	.525	.000***	.516	.000***
HRM					.128	.017*	.016	.824
HRM squared							.055	.021*
Model chi square	342.384		379.056		363.529		368.830	
p value	.000***		.000***		.000***		.000***	
Pseudo R ²	.244		.268		.300		.304	

Table 1: Logistic Regression Analysis: Determinants of External Financing

Discussion

The undervaluation of industry working experience might contribute to the "market for lemons" adverse selection in the capital market (Akerlof 1970; Krausert 2016). Because access to external capital plays an important role in new firm survival and success, our in-depth analysis of the determinants of early-stage external financing reveals a dilemma created by the undervaluation of some signals in the external financing market.

In business practice, entrepreneurs without startup experience should be better equipped with regard to training on private equity financing. In the context of early stage financing, entrepreneurs need to send clear signals about their capabilities and actions that might otherwise go unnoticed by potential investors. External investors need to interpret positively not only the entrepreneurs' startup experience, but also their other characteristics, such as industry working experience.

References

- Akerlof, G. A. (1970). "Market for Lemons - Quality Uncertainty and Market Mechanism," Quarterly Journal of Economics 84 (3), 488-500.
- Barney, J. (1991). "Firm Resources and Sustained Competitive Advantage," Journal of Management 17 (1), 99-120.
- Becker, G.S. (1964). Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education. Chicago, IL: University of Chicago Press.
- Cassar, Gavin (2004). "The Financing of Business Start-Ups," Journal of Business Venturing 19 (2), 261.
- Coff, R. and Kruscynski, D. (2011). "Drilling for Micro-Foundations of Human Capital-Based Competitive Advantages," Journal of Management 37 (5), 1429-1443.
- Hatch, N. W. and Dyer, J. H. (2004). "Human Capital and Learning as a Source of Sustainable Competitive Advantage," Strategic Management Journal 25 (12), 1155-1178.
- Jiang, K. F., Lepak, D. P., Hu, J. and Baer, J. C. (2012). "How Does Human Resource Management Influence Organizational Outcomes? A Meta-Analytic Investigation of Mediating Mechanisms," Academy of Management Journal 55 (6), 1264-1294.
- Krausert, A. (2016). "Hrm Signals for the Capital Market," Human Resource Management 55 (6), 1025-1040.
- Plummer, L. A., Allison, T. H. and Connelly, B. L. (2016). "Better Together? Signaling Interactions in New Venture Pursuit of Initial External Capital," Academy of Management Journal 59 (5), 1585-1604.
- Spence, M. (2002). "Signaling in Retrospect and the Informational Structure of Markets," American Economic Review 92 (3), 434-459.
- Wright, P. M., Coff, R. and Moliterno, T. P. (2014). "Special Issue Editorial Strategic Human Capital: Crossing the Great Divide," Journal of Management 40 (2), 353-370.

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