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Signaling for more money: The roles of founders' human capital and investor prominence in resource acquisition across different stages of firm development[☆]

Eun-Jeong Ko[a], Alexander McKelvie[b,*]

[a] Silberman College of Business, Fairleigh Dickinson University, Madison, NJ 07940, United States
[b] Department of Entrepreneurship & Emerging Enterprises, Whitman School of Management, Syracuse University, Syracuse, NY 13244, United States

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ABSTRACT

We use signaling theory to explain how new ventures effectively signal future prospects to acquire external resources. Based on a sample of 235 new ventures drawn from a unique dataset combining multiple sources, we examine the signals of founders' human capital (i.e., education, industry experience, and founding experience) and investor prominence and their influence on the amount of external funding received across two stages of venture funding. We find that founders' founding experience and education have the greatest effects for acquiring first-round financing, but in later stages, only the signaling effect from education remains. Furthermore, we find important interactions between founders' human capital and investor prominence in the second round of funding. By utilizing lagged funding information, we show that different types of signals have a dynamic and temporal impact on new ventures' resource acquisition, including the persistence of some signals and the temporariness of others.

Executive summary

Acquiring financial resources is an important step in the development of new ventures. Most of the research on the topic has examined only one stage of financing, such as the initial round or at IPO. This is problematic as new venture financing is an ongoing and multi-stage process. We use signaling theory to argue that investors focus their attention on different signals depending on funding stages and different types of signals interact with each other when they coexist. Our approach is novel in that we examine the extent to which signals that are important in one stage are less relevant in other stages, and considers the simultaneous and interactive impact of signals.

We test our model on a sample of 235 new ventures in the internet advertising industry. We combined data from Crunchbase, VentureXpert, LinkedIn, Archive.org, newspapers, and company websites and social media feeds to increase the accuracy of our founder, venture, and investor data. We find that the human capital of the founders, and in particular their education and prior founding experience, offer important signals that directly impact the amount of funding received in the first round of financing. In the second round of financing, we find that the prominence of the investors in the first round of financing and the education of the

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* Corresponding author.
E-mail addresses: eko@fdu.edu (E.-J. Ko), mckelvie@syr.edu (A. McKelvie).

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founders provide significant signals that impact the amount of funding received. We also find that having prior founding experience magnifies the impact of prominent investors, resulting in larger amounts of funding received in the second round. However, there is a complementary effect among founders with prior founding experience that are not endorsed by prominent investors, whereby the effect of education is less prominent for ventures with prominent investors. Rather than providing a synergistic effect, once investor prominence is accounted for, there is no additional benefit of having higher education.

These insights illustrate that changing nature of signals over the development of the new venture and stages of financial acquisition. Also, when different types of signals co-exist, the impact of a signal can differ depending on other types of signals also present. The implications are that founders need to attend to certain signals at select times, and there seems to be a payoff to aligning with prominent investors at earlier stages of venture development, assuming founders want larger amounts of financing. Combined, our findings help to shed new light in the area of new venture signals (e.g. Plummer et al., 2016) as we examine the relative impact of various signal sources at different stages of venture development, and on the amount of funding acquired.

1. Introduction

Financial resource acquisition is an important part of venture growth and development (Brush et al., 2008; Hite and Hesterly, 2001). Scholars interested in new venture resource acquisition have begun to identify the factors and mechanisms that attract external resources, including factors like network ties (Shane and Cable, 2002), social co-optation (Starr and MacMillan, 1990), founders' human capital (Ebbers and Wijnberg, 2012; Gulati and Higgins, 2003), business plans (Delmar and Shane, 2004), social capital (Florin et al., 2003), symbolic mechanisms (Zott and Huy, 2007), and endorsement (Carter and Manaster, 1990; Janney and Folta, 2006; Plummer et al., 2016).

The purpose of this study is to propose and test a model that explains how signals originating from different new venture characteristics help firms acquire external financial resources at different funding stages. The majority of the existing work investigating the relationship between signals and new venture resource acquisition has adopted a static approach and has mainly examined one singular round of financial resource acquisition (Elitzur and Gavious, 2003; Higgins and Gulati, 2006; Plummer et al., 2016; Zimmerman, 2008). While these studies have provided important insights, this approach is problematic as it provides only a snapshot of the entire resource acquisition process (Gompers, 1995) despite resource acquisition being a continuous process whereby different signals may have distinct influences at various stages of venture development and different signals may act in concert over time. This is a notable gap in the entrepreneurship literature related to signaling theory, particularly if signals that are important in one stage are less relevant in other stages or if multiple signals simultaneously and interactively affect organizational outcomes.

Using data drawn from a sample of 235 internet advertising ventures listed in CrunchBase combined with alternate data sources from VentureXpert, LinkedIn, Archive.org, news articles, and company websites, we construct a more precise dataset about founders, investors, and new venture funding. We test our claims in two steps. In the first step, we examine the relationship between signals from founders' human capital (i.e., education, industry experience, and founding experience) and their impact on acquiring financial capital in the first resource acquisition stage. In the second step, we assess the extent to which signals from founders' education and from prominent investors' endorsements account for subsequent amounts of financial resource acquisition. In this second step, we also examine the combined impacts of human capital and investor prominence.

Our study contributes to the literature on signaling and new venture financing in multiple ways. First, extant studies have focused almost exclusively on the signaling effects of firms during a specific round of funding, such as during initial public offering (IPO) (Bruton et al., 2010; Zimmerman, 2008) or seed funding (Elitzur and Gavious, 2003), even though new venture financing is a continuous process (Gompers, 1995). As such, we argue that signaling mechanisms are dynamic (rather than stable) across different stages of venture development and financing. Our approach takes into account the different types of uncertainty that a new venture is likely to face over time and the additional organizational characteristics that a new venture acquires as it grows. In adopting a temporal perspective of signaling effects, we theoretically argue and empirically illustrate that different signals emanating from a venture can offer varying levels of importance over time. Consequently, we expand prior findings of signaling effects on the financial resource acquisition literature concerning new ventures.

Second, we untangle the disparate signaling effects of different types of human capital in the resource acquisition process by examining multiple human capital measures as suggested by Tornikoski and Newbert (2007). Based on the challenges associated with different stages of venture development, we argue that some human capital components have a specific temporal impact. For instance, we argue that founders' education provides a persistent signal for investors over time, whereas prior founding experience only provides a temporary signal useful for the first round of funding. Our findings are meaningful in that they respond to calls by scholars (e.g., Davidsson and Honig, 2003; Unger et al., 2011) to adopt a dynamic and temporal view rather than a static view when examining the impact of human capital.

Third, this study heeds a recent call to pay attention to the simultaneous effects of multiple signals (Connelly et al., 2011; Plummer et al., 2016) rather than only examining them in isolation. Most new venture signaling studies have focused on a single effect of a specific firm characteristic (e.g., Higgins and Gulati, 2006) or on the direct ceteris paribus effects of these factors (e.g., Gulati and Higgins, 2003; Sanders and Boivie, 2004; Stuart et al., 1999). We pay attention to interactions among different signals (Plummer et al., 2016) to argue for and illustrate combinative and contingency signaling effects, thus revealing conditions conducive for receiving higher amounts of funding. Our contingency perspective helps open up novel theorizing in this area to better understand how different types of signals act in concert.

Finally, we create a unique dataset that combines multiple sources of validated data (CrunchBase, VentureXpert, LinkedIn, Archive.org, news articles, and company websites). Employing CrunchBase and LinkedIn, in particular, as new forms of data that