THE INFLUENCE OF DIFFERENT TYPES OF LEGITIMACY ACROSS RESOURCE ACQUISITION STAGES IN ENTREPRENEURIAL FIRMS

Eun-Jeong Ko
*Syracuse University, USA, eko03@syr.edu*

Alexander McKelvie
*Syracuse University, USA*

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Resource acquisition is critical for new venture development and growth. However, potential resource providers often rely on credible signals to make decisions due to a lack of track record and information asymmetry of the new ventures they might invest in. We argue that different firm characteristics, such as founders’ human capital and endorsement from prominent investors, have positive effects on resource acquisition. Importantly, we argue that the importance of these factors differs depending on the stage of development as they send signals of legitimacy. We look at various types of signals at different stages of firm development in a sample of 307 new ventures in the advertising industry.

Introduction

Resource acquisition is an important part of firm growth and development (Brush, Manolova, & Edelman, 2008; Hite & Hesterly, 2001). Resource acquisition is especially important in entrepreneurial settings as most new ventures lack resources to transform their ideas into reality (Aldrich & Martinez, 2001; Zhao & Aram, 1995). Scholars interested in new ventures’ resource acquisition have begun to identify factors and mechanisms that attract external resources (Shane & Cable, 2002), particularly financial resources (Chaganti, DeCarolis, & Deeds, 1995; Dimov, Shepherd, & Sutcliffe, 2007; Martens, Jennings, & Jennings, 2007; Shane & Cable, 2002). However, the majority of this work has adopted a static approach and mainly examined one stage – usually the initial one - resource acquisition (Higgins & Gulati, 2006; Stuart, Hoang, & Hybels, 1999), thus being limited to only a snapshot of the entire resource acquisition process in new ventures. This is a notable gap in the literature as resource acquisition in new ventures is a dynamic and continuous process in nature. More specifically, as a new venture acquires external resources at different stages of its development, the factors explaining later resource acquisition might change as well. This resource acquisition process is particularly dynamic in high growth ventures as they tend to raise funds from external investors in a series of stages or rounds (Avnimelech & Teubal, 2006).

The purpose of this study is to propose and test a model that can explain how signals originating from different new venture characteristics help to acquire external financial resources at different stages of funding, particularly in the early stages of development. Our findings contribute to the entrepreneurship literature in several ways. First, we find that different characteristics of a firm may be more important in building a firm’s legitimacy at different stages of a firm development. Particularly, when different characteristics legitimizing a new venture coexist, endorsement legitimacy from prominent initial investors has a stronger impact on resource acquisition than legitimacy from founders’ human capital. Second, even within founders’ human capital, specific types of human capital are more effective at signaling than others at different stages. Third, we draw upon a unique dataset that combines multiple sources of validated data (Crunchbase, VentureXpert,
and LinkedIn) to show how new forms of social network and crowd-sourced websites can be utilized as rich data sources for academic research. The model of this study is grounded in theories of signaling, legitimacy, human capital and inter-organizational endorsements. The theoretical underpinning for our arguments is that signals emanated by different characteristics of a firm contributes directly to a venture’s resource base by allowing it to be legitimate and thus to better attract financial resources at different funding stages.

Hypothesis Development

In the earliest stage of firm development, when new ventures do not have any track records (Stinchcombe, 1965), firms can signal their future prospects through the composition of top management teams or founding team (Cohen & Dean, 2005). It is because the venture’s founding members are likely to have individual reputations or personal characteristics that represent their productivity, effectiveness and desirability (Hallen, 2008; Shane & Stuart, 2002); the firms they represent might not those same reputation or characteristics at that stage of development. Also, investors acknowledge that the most legitimate managers will not choose ventures that lack viable business strategies or substantial economic potential (Cohen & Dean, 2005). In particular, the human capital (Becker, 1964) that founders invest during their career reduces the probability that such founders will allow themselves to be employed in less lucrative firms. Thus, human capital is a good indicator that represents the founding team’s ability for their organization to succeed (Hallen, 2008). To the extent that investors are aware of the importance of founders’ invested human capital, they will view founders’ human capital as a viable indicator of the venture’s economic potential (Cohen & Dean, 2005). In fact, previous scholars find that entrepreneurs’ characteristics are important evaluation criteria used by investors (Chaganti et al., 1995; Ebbers & Wijnberg, 2012; Higgins & Gulati, 2006). Thus, we hypothesize that:

Hypothesis 1: The greater the level of founders’ human capital, the more resources a new venture will acquire in its “initial” resource acquisition stage.

We also argue that founders’ human capital has continuing effects on resource acquisition until the firms have valid indicators that show their economic viability and satisfy resource providers’ expectations for financial returns, or until there has been sufficient time for accomplishments to be expected (Hallen, 2008). Thus we also suggest:

Hypothesis 2: The greater the level of founders’ human capital, the more resources a new venture will acquire in its “subsequent” resource acquisition stage.

Another signal that new ventures can convey in their early stages is through endorsement. As new ventures continue to develop their businesses, they also develop relationships with other business partners or external investors. The relationships can serve as endorsements (Stuart et al., 1999), improving the legitimacy of an organization in the eyes of potential investors due to the example set by the common partners or investors (Galaskiewicz & Wasserman, 1989) and providing signals for new ventures’ access to valuable resources and knowledge critical to early performance. The signal will be stronger when new ventures have relationships with financial investors (Stuart et al., 1999) and the relationships with prominent investors will have a greater signaling impact compared to relationships with less prominent investors (Hochberg, Ljungqvist, & Lu, 2007). An association with prominent firms enhances a perception of the affiliated new venture (Stuart et al., 1999) and relationships with prominent investors signal that the new venture has access to richer experiences and support. Consequently, endorsement from prominent investors helps subsequent investors justify their decisions on the new venture (Galaskiewicz &
Wasserman, 1989). In this regard, we argue that a level of prominence of investors, which can be measured by visible characteristics of the investors (Certo, 2003), may also serve as another discernible guide for resolving uncertainty about a quality of a young or unknown entity. For instance, a round of funding from very large investors in a new venture confers a quality of the venture and decreases the uncertainty about its potential success (Davila, Foster, & Gupta, 2003). Thus, we hypothesize that:

Hypothesis 3: The greater the level of initial investors’ prominence, the more resources it will acquire in its “subsequent” resource acquisition stage.

When different characteristics signaling future prospects of a new venture co-exist, which information is prioritized in legitimizing the venture? At the stage when signals from founders’ human capital and signals from prominent investors’ endorsement are present, we argue that the signals from endorsement will be stronger than signals from founders’ human capital for several reasons. First, founders’ human capital infers future prospects of a firm based on founders’ previous experience, not based on the current organizational environment. Thus the individual level legitimacy partially predicts how well the founding team will address the new organization’s unique challenges (Baum & Silverman, 2004; Eisenhardt & Schoonhoven, 1990). Instead, an endorsement from prominent investors is an accomplishment of the new venture in the current and relevant environment in which a potential investors considers investing. Second, the endorsement endowed by prominent investors signals that the new venture would benefit from skills and tacit knowledge owned by seasoned and experienced prominent investors (Colombo & Grilli, 2010; Davila et al., 2003), which will be particularly beneficial to young organizations with limited track records and management experiences but encountering many potential hazards. Third, the fact that new ventures are selected by prominent investors signals that the new ventures are qualified enough to be selected in the eyes of experienced and strict evaluators (Croce et al., 2013; Sørensen, 2007). Thus, we hypothesize that:

Hypothesis 4: In subsequent resource acquisition stages, the impact of endorsement from prominent investors in an initial funding will have a greater effect than the impact from founders’ human capital.

Method

We construct a more precise dataset about founders, investors, and funding by sing data drawn from a sample of 307 advertising ventures that have been listed in Crunchbase and combining alternate sources of data from VentureXpert, LinkedIn, and company websites. We focus on a singular industry, Internet advertising, to reduce alternative explanations based on industry differences. We select new ventures that have been operating ten years of fewer, following Shepherd’s (1999) definition. We collect this data from over a ten year period, between 2004 and 2013. Most ventures in the sample consist of one (44.63%) or two (37.79%) founders, with all firms having fewer than seven founders.

Our dependent variable, amount of funding received, was measured in dollars received. In terms of the independent variables, we built our operationalizations from the extant literature. We operationalized founders’ human capital using multiple and separate indicators: education level (Becker, 1964; Eisenhardt & Schoonhoven, 1996; Hsu, 2007; Shane & Stuart, 2002); managerial experience (Baum & Silverman, 2004; Brush, Greene, & Hart, 2001); industry specific experience (Tyebjee & Bruno, 1984); and prior founding experience (Hsu, 2007). More than half of teams (55%) in the sample consist of at least two founders (i.e., a team). In this case, we aggregated the...
human capital information of all team members and used the average of all founders or considered whether at least one founder has relevant experience. To be specific, the level of education that measures the maximum educational level of each founder within the four categories (high school, bachelor’s degree, master’s degree, and doctoral degree). We averaged this for all team members to represent a team level education. Years of managerial work experience of all founders were averaged to show the level of human capital of each firm. We log transformed managerial work experience as it was a highly skewed variable. Industry-specific experience and prior founding experience dichotomized with a value of one if any of founders in a team has the experience and zero if not. Similarly, we measured the level of prominence of investors as the size (number of employees) of initial investors, which is a visible but not easily imitable characteristics of investors. Previous scholars argue that organizational size is a good proxy for reputation or organizational prominence because the greater the size of the organization, the more likely the organization will be observed or distinguished itself from other organizations (Gompers & Lerner, 1999; March & Simon, 1958), and past organizational performance is generally recognized as a predictor of prestige perceptions (Sine et al., 2003). We also controlled for five factors that might impact funding size, such as geographic location (Blau, 1977; Sorenson & Stuart, 2001), firm age (Hannan & Freeman, 1989), number of founders (Eisenhardt & Schoonhoven, 1996), and whether firms received funding from an accelerator (e.g. Y-Combinator and Techstars) and year dummies. For the subsequent rounds of financing, we also included an additional dummy variable concerning whether investors in the second round were the same as in the first round.

Results

Due to space limitations we will not provide the full set of descriptive statistics and correlations for our analyses. Please contact the lead author for those. The correlations among independent variables generally are low (the highest is 0.23; p < .01), suggesting that there are limited risks of multicollinearity. Given our reliance on data from multiple sources, there are relatively low risks of same source or common method biases. Our data collection also took into consideration temporal differences between the independent and dependent variables; having time stamped data thereby alleviated risks of reverse causality. We test our hypotheses in two steps. In the first step, we examine the relationship between founders’ human capital and its impact on accumulating financial capital in the first resource acquisition stage. In the second step, we assess the extent to which the effects from founders’ human capital and from endorsement from prominent investors account for subsequent resource acquisition. Since there is a selection component to receiving subsequent amounts of funding being dependent on receiving first amounts, we used the Heckman correction model to account for potential sample selection bias in the second stage of funding. We conducted dominance analysis (Budescu, 1993) to evaluate a variable’s relative importance in reducing prediction error in the prediction of a dependent variable, notably for Hypothesis 4.

Using hierarchical linear regression, we find that legitimacy from founders’ human capital partially has a positive impact both on the amount of initial and subsequent resource acquisition. In particular, founders’ previous founding experience significantly influences the funding amount in the first round (p < 0.01) and founders’ education on the funding amount in the second round (p < 0.05). Thus, Hypotheses 1 and 2 are partially supported. Hypothesis 3 argues that investor’s prominence would have a positive impact on the amount of funding and is supported (p < 0.001). When prominence of first investors and founders’ human capital coexist as predictors in the subsequent resource acquisition stage, both founder’s education (p < 0.05) and investor’s prominence (p < 0.001) have significant impacts on the funding amount. However, based on dominance analysis (Budescu, 1993), we find investor’s prominence has a more influential impact.
on amount of funding received compared to any types of founders' human capital including founders' education. We therefore suggest different types of founder legitimacy have a greater importance at different stages of firm development; in the later stages endorsement legitimacy bestowed from prominent investors is superior in predicting subsequent resource acquisition. We also find some statistically significant impacts of the control variables. For instance, we find that there is a strong positive impact of premium location (p < 0.05) and firm age (p < 0.01). However, there is also a statistically significant and negative impact of being in an accelerator (p < 0.01).

**Discussion and Implications**

Despite the importance of resource acquisition for new ventures, to date, the entrepreneurship literature has lacked a perspective that explains resource acquisition mechanisms of new ventures at different stages. For instance, scholars have vaguely agreed that human capital of top management teams will have a positive impact on firm performance and affiliations with business partners will benefit the firms (Crook, Todd, Combs, Woehr, & Ketchen, 2011; Unger, Rauch, Frese, & Rosenbusch, 2011). However, we do not have a clear understanding of when/how they benefit new ventures. Further, although resource acquisition is a dynamic and continuous process, often staged over time in the case of financial resources, most studies of resource acquisition take a static perspective (Higgins & Gulati, 2006; Stuart et al., 1999), focusing on a specific point of time (e.g. initial stages or at IPO). Thus, different timing impacts of resource acquisition, especially for early stage of venture without any track records, has remained unclear.

This paper addresses this gap by showing that signals from different sources play a critical role in acquiring external resources at different stages of firm development. More specifically, our results show that when new ventures do not have any track records or financial viability to present at the first funding stage, the visible characteristics of founders, notably their previous founding experience, can be a valid signal to predict the firm's viability. In fact, this result is consistent with what previous scholars argued, particularly researchers studying signaling and legitimacy (Ebbers & Wijnberg, 2012; Janney & Folta, 2006). For instance, scholars argue that when organizational capital has not been yet established, individual capital can play a role on behalf of organizational capital (Hallen, 2008). Second, we find that when signals emanating from two different sources coexist, particularly at the second funding stage, the endorsement legitimacy from initial investors trumps the legitimacy from founders' human capital. This shows a hierarchical relationship among different types of signals. Therefore, depending on stage of development, particular firm characteristics can have stronger signaling effects than others. It can be interpreted that organizational capital, in the form of the endorsement endowed by prominent investors in this study, is more impactful in building legitimacy than individual capital (e.g. founder's human capital) in the later stages of funding.

Third, we find that, even within founders' human capital, specific types of human capital are more effective at signaling than others at different stages. This suggests that broadly or uniformly defined human capital measures may not provide sufficient predictive accuracy. This finding is aligned with the suggestion made by Unger et al. (2011), who showed that future research on human capital should take a process view rather than a static view in order to have more precise and correct understandings on human capital because different types of human capital may play different roles at different times. Davidsson and Honig (2003) similarly argued that different types of human capital could be more important at different stages of firm development. In this study, we empirically showed that a particular type of human capital (e.g. previous founder experience) played a superior role in determining the total amount of initial funding, when their firms have...
limited track records. After new ventures were initially screened by financial investors and have acquired some level of recognition from stakeholders on economic viability of the ventures, another type of human capitals such as the level of education of founders, that signals a potential growth of ventures has a strong influence on investment decisions of resource providers. A high-level of education has been associated with receptivity of innovations (Becker, 1970; Kimberly & Evanisko, 1981) and high capacity for information processing (Schroder, Driver, & Streufert, 1967), thus the level of education of founders will be more effective signaling about a potential growth of ventures in the subsequent resource stage.

Our findings contribute to the literature of entrepreneurship in three ways. First, we find that different characteristics of a firm may be more important in building a firm's legitimacy at different stages of a firm development. Most empirical studies on resource acquisition to date have focused on main effects of a specific characteristic of a firm at a particular time period. Our study shows a dynamic and temporal perspective of interactions of different organizational characteristics. Particularly, when different characteristics legitimizing a new venture coexist, endorsement legitimacy from prominent initial investors is more important than legitimacy from founders' human capital. This overcomes a view of generic and simplified signaling arguments for new ventures' resource acquisition and provides how different types of legitimacy interact with each other to determine which signal is prioritized across different firm development stages. Second, by utilizing lagged funding information, we avoid ambiguous causality due to lack of temporal spacing between legitimacy and resource acquisition and clarifies that endorsement legitimacy endowed by prominent investors in the earliest stage has a significant influence on subsequent resource acquisitions. Third, we create a unique dataset that combines multiple sources of validated data (Crunchbase, VentureXpert, and LinkedIn) to more fully understand inter-related individual and firm linkages in new venture development over time. Particularly, Crunchbase and LinkedIn are new forms of social network and crowd-sourced websites that provide self-report, publicly accountable information, but still under-utilized for research. Our study shows how new types of information sources can be utilized as a database for academic research.

As with all studies, ours has some limitations. These open up opportunities for future research. First, we focused on specific types of ventures (i.e. high-growth ventures) in a specific industry (i.e. Internet advertising). The resource acquisition mechanisms identified in this study might not work in the same fashion in the other type of ventures or industries. For instance, low-growth firms tend to eschew external financing and would not be relevant to prominent investors. Second, the amount of funding that new ventures received not only indicates success of resource acquisition of ventures but also reflects new ventures’ goals for external funding. We took several steps to make sure the result is robust with different measures, but we acknowledge that the issue of unobservable heterogeneity related to intended funding goals across different ventures was not completely resolved. In this regard future research can help build upon these issues related to the heterogeneous goals of resource acquisitions. Third, we focused on human capital of founders as initial capabilities that ventures possess, but other characteristics of founders, such as social capital, might also have influences on resource acquisitions. Thus, more comprehensive examinations on resource acquisition mechanism of new ventures will have greater explanatory powers on entrepreneurial resource acquisition phenomenon. Combined, our examination on the role of signaling and legitimacy from different sources in new ventures helps move the needle in research on new venture development, particularly related to external resource acquisitions.

CONTACT: Eun-Jeong Ko; eko03@syr.edu; (T): +1 617-990-7285; Whitman School of Management, Syracuse University, 721 University Ave, Syracuse NY, 13244.