

**ANTECEDENTS AND CONSEQUENCES OF  
EARLY ENTREPRENEURIAL BEHAVIORS: PLANNING, ACTION AND INACTION**

**ABSTRACT**

Despite the extensive research on business planning, this research stream has not sufficiently considered what the alternatives to planning might be. Particularly in nascent firms, we suggest that taking other startup activities and being inactive should be discriminated as alternatives of planning because the two have different implications on performance, potentially blurring the performance implications of business planning. In this paper, focusing on early stage of firm development, we investigate the antecedents of the different entrepreneurial behaviors (i.e. early planning and early actions) by relying on the cognitive style literature and propose that people with advanced education tend to engage in early planning. On the other hand, entrepreneurs with more industry and founding experience are more likely to engage in early action but less likely to engage in early planning. We also argue for positive performance implications of early actions as well as early planning. Examining a panel of 343 nascent entrepreneurial firms over a period of six years, we find that our hypotheses are largely supported, with a few exceptions. Our conceptual model and empirical findings provide valuable insights to scholars interested in business plan, entrepreneurial actions, human capital, and the new venture creation process.

**Keywords:**

Business Planning, Entrepreneurial Action, Human Capital, Cognitive Style, Action-Regulation

## 1. INTRODUCTIONS

Action under uncertainty is the defining characteristic of entrepreneurship (McMullen & Shepherd, 2006; Sarasvathy, 2001). When engaging in entrepreneurship, it is impossible to know with any degree of certainty which activities to engage in, when to conduct them, or the outcomes of these actions. Entrepreneurs need to productively manage this uncertainty (Frese, 2009). Otherwise, uncertainty often results in hesitancy and inaction (McMullen & Shepherd, 2006). There is now extensive research on business planning in the entrepreneurship literature (Delmar & Shane, 2003). Unfortunately, this research has not sufficiently considered what the alternatives to planning might be: some of those that don't plan likely procrastinate (Van Gelderen, Kautonen, & Fink, 2015); others may move their ventures forward engaging in less rational approaches on the basis of intuition and experience, emphasizing initial action over planning (Frese, 2009; Sarasvathy, 2001). Unless all these three options are considered simultaneously (planning, action, and inaction), the true implications of planning and action will be misrepresented. Taking explicit considerations of an alternative entrepreneurs' response to uncertainty, we propose positive performance implications of early action, an alternative action of planning, as well as early planning.

In addition, in this paper we build on the cognitive style literature to propose which individual factors potentially predict different entrepreneurial behaviors (i.e. early planning and early actions). People with more human capital in the form of education have a cognitive style that makes them more susceptible to engage in early planning, but less prone for early action. Conversely, those who possess more human capital in the form of experience are more likely to engage in early action but less likely to engage in early planning. Finally, those with less human capital are less likely to do either. By and large, these hypotheses are supported in our analyses.

In carrying out this research we make the following contributions to the literature. First, by explicitly considering the important alternative entrepreneurs' behavior to planning (i.e. action) in the early stage of firm development, we provide a more fine-grained understanding of the role of business planning for new ventures. Second, when we considered alternatives to planning, early action has a positive impact on firm performance, as opposed to planning. This speaks to the relevance of scholars applying theoretical views such as effectuation (Sarasvathy, 2001) and bricolage (Baker & Nelson, 2005), that explicitly focus on alternatives to planning, to the study of early stage entrepreneurship. Third, this study suggests that different types of human capital lead to different entrepreneurial behaviors (i.e. planning and entrepreneurial actions). This finding is meaningful not only it expands the prior findings on the antecedents of business planning (Brinckmann & Kim, 2015; Honig & Karlsson, 2004) but also this implies that individual differences may imprint the way of opportunities being exploited. Fourth, we contribute to the human capital literature in entrepreneurship. We find that human capital appears important in moving a new venture forward, but the nature of that human capital influences which path is chosen can vary, showing the importance of considering a mediating mechanism (e.g., entrepreneurial behaviors in this study) to more precisely examine its impacts on firm performance.

The paper proceeds as follows. In the next section, we review the literature of business plans and extant perspectives on entrepreneurial behaviors and identify how the perspectives on entrepreneurial behaviors can be integrated the business plan literature. Next, we explain how entrepreneurs' different types of human capital (i.e. education, industry experience, and founding experience) explain entrepreneurial firms' discrepant behaviors through entrepreneurs' cognitive mechanisms. Accordingly, specific hypotheses are developed in consideration of the

relationships of human capital, entrepreneurial behaviors, and performance. In the third section, we describe the methodology used to examine these hypotheses. In the fourth section, we review the empirical support for these hypotheses. In the final section, we discuss the implications of the results for entrepreneurship research.

## **2. THEORETICAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT**

### **2.1. Business Plan and Two Perspectives in Entrepreneurial Behaviors**

The value of business planning for new ventures has been extensively debated. Proponents of planning argue that with planning, resources are coordinated more effectively (Delmar and Shane, 2003), members' responses to temporal issues are better regulated (Janicik & Bartel, 2003), and organizational goals are smoothly integrated into people's behaviors (Bandura, 1997). Others suggest that it detracts from more valuable organizing activities (Bhide, 2000; Carter, Gartner, & Reynolds, 1996) and can lead to cognitive rigidities and limited strategic flexibility (Vesper, 1993). Prior research on planning has mainly focused on whether to plan or not (Brinckmann, Grichnik, & Kapsa, 2010), the formality of plans (Hechavarria, Renko, & Matthews, 2012) or the contexts in which planning is more effective (Song, Zhao, Arend, & Im, 2015). However, the debates did not concern specifically about what else entrepreneurs are doing if they do not develop business plans. In fact, if entrepreneurs do not develop plans, particularly in nascent firms, they might do something else or do nothing (P. Reynolds & Miller, 1992). Distinguishing the two alternative options is critical to improve the discussion in planning literature because entrepreneurship is about action (Baron, 2007; McMullen & Shepherd, 2006). Without actions, there will not be entrepreneurship or new ventures because entrepreneurship only occurs when entrepreneurs take actions to pursue business opportunities (Bird & Schjoedt,

2009) and also a new venture can be sustained only through entrepreneurs' continuous actions. In this regard, the case in which entrepreneurs do nothing should be separated from the entrepreneurs doing something, either planning or other startup activities, in the discussion of planning. Particularly, if nascent firms, which do not have any organizational routines, do not actively conduct any startup activities, either planning or something else, it will naturally result in unproductivity or inactivity of the firms. On the other hand, if new ventures execute some startup activities that are directly related to the firms' sales (which we name here as entrepreneurial actions), the entrepreneurial actions will benefit for the ventures' survival and performance. Therefore, the discussion of planning may need to focus on comparing all alternative entrepreneurial behaviors to planning: entrepreneurial actions and inactions in order to more precisely investigate the effects of planning.

Outside the business planning discussion, a number of approaches have recently emerged to emphasize the importance of entrepreneurial actions, e.g., effectuation (Sarasvathy, 2001) and entrepreneurial bricolage (Baker & Nelson, 2005). Sarasvathy (2001) stated that "effectuation processes take a set of means as given and focus on selecting between possible effects that can be created with that set of means," and she also contrasts effectuation processes to causation processes, which is reflected as a linear planning approach (Baker, Miner, & Eesley, 2003). Baker and Nelson (2005) also observed in their field study that "bricolage," often described as making do with "whatever is at hand" (Miner, Bassof, & Moorman, 2001), helped to explain actions of entrepreneurial firms under conditions of tight resource constraints. These two theories were created to explain different phenomena in the entrepreneurship domain, but the entrepreneurial actions associated with both approaches appear to be similar to each other in several respects (Fisher, 2012): the approaches commonly emphasize means rather than goals,

and actions rather than planning. In those perspectives, a trial-and-error is a mechanism for overcoming resource constraints and unpredictable future, thus taking action is encouraged than lingering in the stage of rational analysis and planning. The implications of the new approaches on planning literature is that entrepreneurs might take actions in the absence of plans, and that this approach might be more useful for entrepreneurs. On the other hand, according to traditional business planning literature, entrepreneurs are expected to plan first and then implement startup activities based on their plans.

## **2.2. Entrepreneurial Behaviors and Cognitive Style**

The two different perspectives emphasizing different entrepreneurial behaviors: planning versus entrepreneurial actions have been discussed separately and independently in disparate research streams. However, in fact the two different types of entrepreneurial behaviors are highly related to entrepreneurs' cognitive styles since cognitive style is an important determinant of entrepreneurs' decision-making processes with which entrepreneurs are confronted on a daily basis (Hough & Ogilvie, 2005). Also, the most significant resource in nascent firms is oftentimes founders themselves, thus entrepreneurs' cognitive styles, which are relatively stable over time (Brigham, De Castro, & Shepherd, 2007), will be highly influential deciding on patterns of entrepreneurs' behaviors.

Cognitive style refers to a high order heuristic of individuals reflecting the preferred and consistent approach to gathering, processing, framing, and evaluating information (Brigham, De Castro, & Shepherd, 2007). People perceive decision-making situations according to the schemas they learn and derive solutions by applying the conceptual models they have (Baron, 2004). Prior scholars suggested there are two qualitatively different types of information processing: one can

be best described as analytic, deductive, constrained, rigorous, and critical, whereas the other is best described as inductive, expansive, synthetic, unconstrained, informal, divergent, and creative (Nickerson, Perkins, & Smith, 1985). The two major schemas of individuals reflect what are often referred to as the rational and intuitive cognitive styles of a person. Because of the different ways of gathering, processing, and evaluating information (Riding and Rayner, 1998), the two different cognitive styles (i.e. rational and intuitive) naturally affect entrepreneurs' behavioral patterns. Specifically, entrepreneurs with rational cognitive style will likely focus on developing plans because planning involves sequential, systematic, and articulated thought processes (Mintzberg, 1976). On the other hand, entrepreneurs with intuitive cognitive style seemingly appear action-oriented rather than planning-oriented because the entrepreneurs in this category tend to make their decisions based on their intuition, hunch and lateral reasoning that have been accumulated through un-codified knowledge, experiences and expertise. Further, intuition helps entrepreneurs make quick decisions (Bird, 1988).

### **2.3. Entrepreneurial Behaviors, Cognitive Styles and Human Capital**

Although the cognitive styles in which people process information are stable, they do change over the course of a life as a result of socialization, specialization, or the acquisitions of new methods or procedures for processing information (Austin, Bruner, & Goodnow, 1956). Accordingly, a cognitive style is influenced by types of previously accumulated knowledge or experiences of individuals. We argue that human capital, particularly education and experiences (industry and founding experiences), are important deciding in a cognitive style of an entrepreneur. First, formal education facilitates the development of rational and analytical abilities and preferences. In contrast, both industry and founding experiences help individuals to strengthen their intuition throughout accumulated un-codified information, acquired expertise,

repeated tasks and experiences in similar situations. In the following sections, we will discuss more in detail how education and experiences respectively influence different types of entrepreneurial behaviors: planning versus entrepreneurial actions.

### **2.3.1. Education and Entrepreneurial Behaviors: Planning**

Entrepreneurs with a high level of education are likely to implement planning in the earliest period of firm development because formal education assists in the accumulation of explicit knowledge (Davidsson & Honig, 2003), and students in the formal education system are repeatedly and continuously trained to logically analyze situations with precision and rigor, helping the individuals build and enhance rational and analytical abilities. Thus, entrepreneurs with advanced education tend to be competent in analyzing business opportunity and refining planning. In decision-making situations, the entrepreneurs are likely to apply their competency from their intellectual capital investments to gain competitive benefits particularly when they are faced with a high level of uncertain situations (Dencker, Gruber, & Shah, 2009) and when they lack other competencies to leverage. In addition, highly educated individuals may exhibit self-efficacy beliefs and experience higher satisfaction when they can systematically evaluate information and select actions to implement (Brigham et al., 2007). Further, the people tend to prefer work settings that are oriented towards careful routines, governed by logic, and are clearly structured and organized (Allinson & Hayes, 1996) because these settings are reminiscent of the educational setting. In this regards, the individuals with a high level of education prefer to carry out startup activities through the plans that are clearly structured and organized with logics.

Second, we suggest that entrepreneurs with a higher level of education are likely to be susceptible for normative force of planning, thus they have a tendency to adopt an institutionalized practice, such as planning, (Honig & Karlsson, 2004) earlier than later. The



explicit knowledge that students learn from formal education often reflects social norms of existing institutions because codifying knowledge into formal educational system requires approvals and consensus of many stakeholders in existing institutions, and thus the knowledge in the formal educational system inevitably reflects the consensus of existing institutions and social norms. In this regard, entrepreneurs equipped with more explicit knowledge codified by existing institutions are expected to be in more attuned to behavioral norms and social expectations and thus incorporate more institutionally favored routines and activities in their organizations, such as planning. This suggests that planning may be motivated as much by a broader set of social forces (e.g., isomorphism) as by people's desire to improve decision quality or the efficiency of implementation (Wolf & Floyd, 2013), thus people who have been trained in education system for a long time are likely to follow the normative call and develop the perception that a planning-based approach is preferable (Honig, 2004).

Further, highly educated entrepreneurs are likely to employ plans early is to reduce uncertainty and to acquire legitimacy of their ventures. Planning has been found a commonly employed coping mechanism in order to reduce uncertainty (von Gelderen, Frese, & Thurik, 2000), and planning, in general, is argued to be particularly beneficial when tasks are uncertain and when decision makers cannot rely on experiences or habits to process information (Dencker et al., 2009). On the other hand, entrepreneurs with relevant experiences tend to be confident in their ability to evaluate markets and they believe that their in-depth knowledge all reduce the uncertainty of the venturing evaluation (Dimov, 2010). Also, entrepreneurs' relevant experience often imbue a signaling effect that entrepreneurs have capability to succeed their ventures (Kor & Sundaramurthy, 2008), thus they feel less needs to develop business plan to legitimize their ventures. On the other hand, individuals with a higher education, particularly when they lack

relevant industry of previous founding experiences, tend to prefer to employ planning behaviors (von Gelderen et al., 2000) because their perceived uncertainty is relatively high, thus they are likely to cope it with the competency that they are already equipped with (i.e. rational and analytical skills). Based on the above three reasons, we suggest:

***Hypothesis 1a:*** Formal education has a positive influence on entrepreneurs' extent of early stage planning

In addition, an individual's cognitive style can lead individuals to direct their attention to specific areas of knowledge and certain tasks, and reduce the extent to which they focus on other, similarly important, knowledge and tasks (Kickul, Gundry, Barbosa, & Whitcanack, 2009). Thus, we also suggest:

***Hypothesis 1b:*** Formal education has a negative influence on entrepreneurs' extent of early stage entrepreneurial action

### **2.3.2. Industry and Founding Experiences, and Entrepreneurial Behaviors:**

#### **Entrepreneurial Action**

Contrary to entrepreneurs with a high level of education, we argue that experienced entrepreneurs take actions first and less likely to implement planning in the earliest period of firm development because of the following reasons: experienced entrepreneurs with intuitive schemas consider planning as an inefficient way of spending their time, they are more confident in new ventures and thus rely less on a symbolism effect of planning, and they tend to be effectuators. To be specific, first, experienced entrepreneurs tend to employ their intuitive schemas to make decisions, and they feel less needs to develop formally developed plans that usually consist of time consuming activities, such as extensive market research and competitive

analysis. Also, when individuals use their intuitive cognitive styles, their cognition tends to go through “ambiguous, unordered bits and pieces of information” (Olson, 1985), and intuition foreshortens the decision-making process through rapid (intuitive) information processing (Bird, 1988). Thus, it is likely that entrepreneurs with intuitive cognitive style believe that codifying their un-codified knowledge is inefficient and they can act, without rational analysis, to create an effective business concept and develop efficient operating practices (Mintzberg, 1989). Further, gut feel is one of important components consisting intuition and plays a critical role in decision marking process of experienced entrepreneurs. Since gut feel is hardly codifiable, it adds challenges the entrepreneurs in developing plans. In short, in early stage of firm development experienced entrepreneurs are less likely to employ planning actively, but more likely to implement other startup activities that are directly related to firm performance.

Second, experienced entrepreneurs’ confidence will delay planning but expedite other startup activities that are directly related to operation and sales. Experienced entrepreneurs are usually confident in their capacity of assessment, evaluation, and assembling of resources because experiences can increase the entrepreneur's awareness of industry trends and provide exposure to current developments in processes of production or service delivery, reducing perceived market uncertainty (Delmar and Shane, 2006; Dimov, 2010). As noted, planning is often employed as a coping mechanism to reduce market uncertainty (Gelderen, Frese and Thurik, 2000) or as a conforming behavior to normative forces (Honig and Karlsson, 2004). However, confident entrepreneurs with industry or founding experience feel less needs to develop plans for the purpose of reducing their perceived market uncertainty or presenting their legitimacy. Their experiences that are the result of enactive learning in a relevant market or through previous startup activities also enhances legitimacy of their new ventures by reducing

'liability of newness' (Stinchcombe, 1965), thus mitigating their needs to symbolize their ventures with plans (Castrogiovanni, 1996). Thus, they rather choose to directly commence startup activities that enable their firms up and running instead of engaging the activities that are distantly relevant to firm growth.

Third, according to effectuation theory (Sarasvathy, 2009), experienced entrepreneurs are more mean-oriented rather than goal-oriented and focus more on limiting potential losses rather than maximizing returns. Thus, they "create something new with existing means" (Sarasvathy, 2001) instead of defining detailed business goals that dictate required resources. And, they focus on short-term experiments to examine business feasibility and potential in an unpredictable future rather than predicting an uncertain future by defining the final objective up front. Particularly in the earliest period of firm development, the most unpredictable and ambiguous circumstances, experienced entrepreneurs regard that planning is likely to realize the futility of trying to forecast the future because of the shortage of information about market and lack of means to utilize, thus they tend to employ effectuation approach rather than causation approach (Sarasvathy, 2009). Given the uncertain profit potentials of new businesses, experienced entrepreneurs prefer to limit potential losses than to strive for maximum returns, and thus they might prefer to limit the initial costs of market analysis and research in the earliest stage of firm development. Instead, they would spend their time on engaging in production activities that will directly contribute to revenues or establishing partnerships through pre-commitments from stakeholders (Wiltbank, Dew, Read, & Sarasvathy, 2006) to build means of their business. Thus, experienced entrepreneurs will be less likely to implement plans in the earliest period of firm development but take actions with the resources at hand. Based on the three reasons, we suggest:

*Hypothesis 2a:* Industry experience has a negative influence on entrepreneurs' extent of early stage planning

*Hypothesis 2b:* Industry experience has a positive influence on entrepreneurs' extent of early stage entrepreneurial action

*Hypothesis 3a:* Founding experience has a negative influence on entrepreneurs' extent of early stage planning

*Hypothesis 3b:* Founding experience has a positive influence on entrepreneurs' extent of early stage entrepreneurial action

### **2.3.3. Lack of Human Capital and Entrepreneurial Behaviors: Inaction**

The human capital of founding entrepreneurs is believed to be a critical factor in the performance of new ventures (e.g., Cooper, Gimeno-Gascon, and Woo, 1994; Dimov and Shepherd, 2005). Human capital is particularly important in the early stage of firm development (Davidsson and Honigh, 2003) because entrepreneurs in this stage are facing many different and new tasks. When routines and strategies have yet to be developed, accomplishing daily tasks in the business, solving problems, and making entrepreneurial decisions (e.g., decisions to act upon business opportunities) pose cognitive challenges to the entrepreneurs. In this circumstance, high human capital will assist the entrepreneurs to learn new tasks and to adapt to new situations (Weick, 1996), helping them to quicker and better respond to the new situations. Previous studies have found that entrepreneurs' human capital generally contribute to a progress of startups. For instance, Samuelsson and Davidsson (2009) found that both venture creation experience and formal education contribute to the probability of engaging in nascent activity. Shane and Venkatraman (2000) also argue that human capital increases the capability of owners to perform the generic entrepreneurial tasks of discovering and exploiting business opportunities. Further,

individuals with more or higher quality human capital achieve higher performance, providing firms with a competitive advantage (Hitt, Biermant, Shimizu, and Kochhar, 2001). Particularly, it has been found that market experience, education, and previous entrepreneurial experience are significantly related to entrepreneurial activity (Robinson and Sexton, 1994; Gimeno et al., 1997).

We believe that there are several reasons contributing to a positive relationship between founders' human capital and the productivity of their organizations. First, knowledge tends to lead to action, planning and otherwise. To be specific, the extent of founding experience (e.g., how to attract and retain customers, how to develop new products and processes, how to manage relationships with investors) helps entrepreneurs accumulate tacit knowledge, through "learning by doing" (Pisano, 1994). Industry experience provides knowledge about customers and suppliers as well as social contacts with key stakeholders (Gimeno et al., 1997). Entrepreneurs who already have connections with stakeholders and know how to progress their ventures will be quick to take actions, compared to the ones who do not have the tacit knowledge. In fact, human capital theorists using economic logic defined education, training, and tacit knowledge as productivity-enhancing investments (Becker, 1975; Gimeno et al., 1997). Second, self-efficacy helps entrepreneurs be more productive. Self-efficacy refers to an individual's belief in his or her capacity to execute behaviors necessary to produce specific performance attainments (Bandura, 1977). Specifically, individuals with higher levels of human capital, for instance a more education, have a greater level of self-efficacy in their ability to complete tasks, enabling them to make a choice and act upon their choice toward entrepreneurship. It is because achievement of a higher level of education implies that the people have productively have managed their time, have been less distracted by that things that are less relevant to main tasks, and thus completed

the tasks required to earn their degree. Lastly, entrepreneurs with more human capital, will attempt to achieve their goals at an early stage because their opportunity cost for engaging in entrepreneurship is higher (Cassar, 2006). Specifically, unless their expected returns to entrepreneurship would be sufficiently high and sufficiently immediate, they would seek out alternative employment options, abandoning their startups (Gimeno et al., 1997). In short, we argue that entrepreneurs with more extensive education, industry experience, or founding experience will be more active during their startup attempts and less likely to display inaction. Thus, we hypothesize the following:

*Hypothesis 4a:* Education has a negative influence on entrepreneurs' extent of inactions

*Hypothesis 4b:* Industry experience has a negative influence on entrepreneurs' extent of inactions

*Hypothesis 4c:* Founding experience has a negative influence on entrepreneurs' extent of inactions

## **2.4. Entrepreneurial Behaviors and Firm Performance**

### **2.4.1 Early Planning and Firm Performance**

Although a plan is regarded as an important management tools for new ventures, it would be just an artifact if it does not impact on people's behaviors. An entrepreneur or an entrepreneurial team dedicates their considerable time to formulate and concretize their goals, plans, and specific activities, hoping to effectively implement startup activities according to the plans. Based on action-regulation theory (Frese, 2009), we argue that planning is the mechanism that enables entrepreneurial goals into entrepreneurial actions, thus positively influencing firm performance. To be specific, first, the plans that integrate and concretize goals of entrepreneurs help to realize entrepreneurial intentions and goals into reality. One of the most challenging

problems of organization is to motivate individuals who share only partially congruent objectives to cooperate (Ouchi, 1980), particularly when financial compensation is not clear from their efforts. In this circumstance planning allows a firm founder or a founding team to create a blueprint for the venture development processes that turn broad goals into concrete action steps (Castrogiovanni, 1996). The plans with concrete activities and congruent objectives will help entrepreneurs to clarify goal, set more specific objectives of each founder, and better cooperate. To short, planning is useful in translating entrepreneurial goals and intentions into entrepreneurial actions (Gielnik, Barabas, Frese, Namatovu-Dawa, Scholz, Metzger, & Walter, 2014) and motivating entrepreneurs to collectively achieve action steps and milestones, benefiting for firm performance.

Second, planning facilitates to effectively manage limited entrepreneurial resources by helping entrepreneurs to improve their action steps and to provide tools for managing the supply and demand of resources in a manner that avoids time-consuming bottlenecks (Delmar and Shane, 2003). To be specific, the development of concrete action steps in plans based on organizational goals (Locke & Latham, 1990) facilitates systematic analyses based on multiple variables, and helps entrepreneurs to better understand the relationships between intention, action, and performance (Matthews & Scott, 1995), and thus to determine the best ordering of different organizing activities (e.g., marketing and promotion, obtaining inputs, and searching for capital). This keeps them from focusing on other activities that side track their efforts and helps them to allocate resources according to the priorities (Bower, 1986).

Third, planning will facilitate the formation of group norms that guide people's behaviors and regulate members' commitments on works (Janicik & Bartel, 2003), thus positively influencing firm performance. This positive influence will be stronger in the early stage of firm



development because in the absence of organizational routines and cultures and/or financial compensations, people in new ventures will tend to be disorganized and disoriented, potentially creating inefficiency in work flows. Initial planning helps to build organizational guidelines that will coordinate potential diverse interests of stakeholders, and enable entrepreneurs to conform to the norms of managerial professionalism. Furthermore, planning allows people to make clear appropriate behaviors and expectations of team members, to resolve potential conflicts among them, and to coordinate the expectations and outcomes of their behaviors (Delmar and Shane, 2003). All these impact how well the team functions together and positively influence firm performance. Based on the mentioned three reasons, we suggest:

Hypothesis 5: Early stage planning has a positive influence on performance

#### **2.4.2 Early Entrepreneurial Action and Firm Performance**

As much as plans developed in the earliest period of firm development benefits for firm performance, we also argue that entrepreneurial actions in the earliest period of firm development will benefit entrepreneurial firms to achieve better firm performance. First, early entrepreneurial actions that are directly related to productions and sales will help entrepreneurial firms to initiate communications with customers, benefiting to firm performance. Specifically, early market entry will allow for early market feedback that leads to further refinements of a product or service. The feedback and inputs from these early customers often serve as a source of innovation and collective creativity (Hargadon & Bechky, 2006), which also allow for the development of a more appealing product or service over time. In this respect, engagement with customers and community is a catalyst for venture emergence and growth (Fisher, 2012). Also, by launching a product or service and initiating communication with customers and community

earlier than later, the customers or community served as early users can become "evangelists" selling the product to others through word of mouth. Marketing and promotions are one of the most expensive activities among startup activities. Thus, by engaging with customers early and utilizing them as promoters, the new ventures can potentially save marketing expenses in the future, contributing higher profitability of the new ventures.

Second, early entrepreneurial actions will enable entrepreneurs enter market faster and arrive at a workable solution quicker compared with entrepreneurs who seek to solve problems conceptually (Fisher, 2012). When entrepreneurs initiate their businesses, most startups face rough and competitive rivals, demanding vendors, and unexpected customers' responses. Through the early market experiments, experienced entrepreneurs will actively engage with "problems or opportunities rather than lingering over questions of whether a workable outcome can be created from what is at hand" (Baker and Nelson, 2005). Also, experimenting with different distribution and revenue models, seeking out ways to do things with limited resources, focusing on resources on hand to decide on a realistic course of action, and negotiating agreements with customers and suppliers prior to launching a product or service will help entrepreneurial firms to arrive at a workable solution faster in a efficient way.

Lastly, entrepreneurial actions in the earliest period of firm development benefit entrepreneurial firms by helping them to effectively leverage their limited resources. Most nascent firms have very limited resources (e.g., human, physical, and financial). Elaborated planning and prediction that includes financial projections and market research will incur high costs associated with such activities (Bhide, 2000). Spending precious entrepreneurs' time and resources on other activities that are less directly related to production and sales will detract entrepreneurs from more valuable firm organizing activities (Bhide, 2000; Carter et al., 1996),

and the activities that are directly associated with firm revenue (e.g. product development, production, or sales) will be delayed, postponing the achievement of entrepreneurial profits. For those three reasons above, we suggest:

*Hypothesis 6:* Early stage entrepreneurial action has a positive influence on performance

### **3. METHODS**

#### **3.1. Sample and Research Design**

##### **3.1.1. Sample**

This paper examines how the levels of education, industry experience, and founding experience of founders of new ventures influence entrepreneurial behaviors concerning early planning and early entrepreneurial actions, and how entrepreneurial behaviors impact on firm performance. As such, to test the hypotheses, this study required demographic information of founders, information of early startup activities (i.e. planning, other entrepreneurial actions, and inactions), and firm performance measures of new ventures. In this regard, we investigated the development of pre-launch entrepreneurial teams relying on panel data from Panel Study of Entrepreneurial Dynamics (PSED II), in which over 30,000 Americans constituted the sampling frame to identify individuals engaged in the startup process. Based on three criteria<sup>1</sup> to identify nascent entrepreneurs, a total of 1,214 nascent firms were identified. This dataset contains representative high-quality longitudinal data collected including six waves of interviews from 2005 until 2010. The sampling procedure and details of the data collection process has been presented elsewhere (P. D. Reynolds, 2011).

This data has some notable strengths related to studying the relationships between human capital and entrepreneurial behaviors, and between the behaviors and firm performance,

particularly in the early stage of firm development. First, PSED II includes detailed 34 gestation activities that are required for starting businesses, including several activities related to planning and entrepreneurial actions with specific date information (i.e. year and month). For planning, prior researchers included as a part of planning the processes of gathering and analyzing information, projecting financial developments, and documenting these things in a written plan (Castrogiovanni, 1996; Delmar & Shane, 2003; Sexton & Bowman-Upton, 1991). PSED II provides detailed information about several planning related activities, so the data enables us to analyze the intensity and analytic complexity of planning activities, not simply checking the completion of a written business plan. Also, PSED II provides various startup gestation activities, which enable us to analyze the intensity of entrepreneurial actions that are more directly related to productions and sales in the early stage of firm development. Second, PSED II collects annual data over a 6-year period, including the exact date of startup activities. Using longitudinal data with date information of entrepreneurial behaviors is important because not all startup activities, including planning and others, take place at the same time period across firm development (Katz & Gartner, 1988). In addition, we are mainly interested in “early” entrepreneurial behaviors because timing of entrepreneurial behaviors might have different implications across firms development stages, thus the standard cross-sectional evaluations of effects of business planning on venture development from survey data could be problematic (Shrader, Taylor, & Dalton, 1984). PSED II enables us to overcome the concerns in the planning literature. With the date information of startup activities in PSED II, we are able to identify that the activities that occurred specifically in the earliest stage of firm development. Third, this data also includes the longitudinal information of firm performance (i.e. profitability). By tracking the performances of new ventures longitudinally over time, our tests of the effects of entrepreneurial

behaviors on venture development are more conservative than cross-sectional tests that necessarily overstate the effect of startup activities (Delmar and Shane, 2003). Fourth, PSED II avoids the survival bias of studying established new ventures because many founders disband their efforts before the business is started (Davidsson & Gordon, 2012). This is particularly important in this study because a purpose of this study is to identify antecedents and consequences of early entrepreneurial behaviors. If a sample consists of just established ventures, we would not be able to identify how entrepreneurial behaviors of firms that were disbanded in their earliest periods impacts on firm performance, limiting the generalization of the findings of this study. Fifth, this annual data collected over a 6-year period allows us to conduct the real-time study of the startup process as it unfolds reducing the risk of hindsight bias and memory decay. Sixth, it includes 1,214 entrepreneurial firms with detailed demographic information of up to five owners of each entrepreneurial firm, which can be used to compute a rich set of facets of human capital of entrepreneurs (i.e. education and industry experience in this study).

From the initial sample of 1,214 nascent entrepreneurs chosen from a representative sample of 31,845 adults in the U.S. population (Reynolds and Curtin, 2008), we excluded any firms that include institutional representatives because institutional representatives' behaviors can be impacted by other external factors, not by their own human capital and cognitions. Also, we included only the firms that were established by solo entrepreneur because if there are more than one founder in a startup, the entrepreneurs' behaviors can be influenced by other factors, such as a team's emotional and cognitive conflicts (Amason, 1996; Jehn, 1997; Ensley, Pearson, and Pearce, 2003). Since the mechanism that we are investigating here in this study is not an internal team dynamism, we included just the firms with a solo entrepreneur to exclude alternative explanations. Further, if firms have more than 50 employees, they were also excluded

from the sample because they are outliers. Lastly, similar to other studies (Brannon, Wiklund, & Haynie, 2013) we only included new ventures that initiated at least one gestation activity during a specific time frame prior the first interview. We selected 1 year as the cutoff. This led to a sample of 439 new ventures. Among the 439 ventures, 93 firms (21.18%) consist of owners without any prior industry experience and 242 firms (55.25%) consist of owners without any previous startup experience. On average, owners of 138 firms (22.76 %) have, at least, bachelor degree, which is not significantly different from the initial sample of 1,214 nascent entrepreneurs in PSED II. Over the six times of interviews during which we observe the new ventures, 314 of the ventures were disbanded. This rate of disbanding is fairly typical and is consistent with data on new venture failure rates as provided by the U.S. Small Business Administration and academic researchers (Aldrich, 1999).

### **3.1.2. Research Design**

#### **Selection Correction**

Prior studies have shown that several new ventures are disbanded already during a nascent phase (e.g., Davidsson & Honig, 2004). Thus, any estimation of performance will be biased unless estimates are corrected for such sample selection (Greene, 2010). We use Lee's (1983) generalization of the Heckman selection model to create selection variables to control for venture disbanding in our main models that investigate the relationship between founders' human capital and early entrepreneurial behaviors, and the relationship between the behaviors and firm performance. Specifically, we use the probabilities of disbanding from longitudinal random-effect logistics regression to predict venture disbanding for our 343 ventures to generate a sample correction variable  $\lambda$ :

$$\lambda_{it} = \frac{\phi[\Phi^{-1}(F_i(t))]}{1 - F_i(t)}$$

where  $F_i(t)$  is the cumulative hazard function for firm  $i$  at time  $t$ ,  $\phi$  is the standard normal density function, and  $\Phi^{-1}$  the inverse of the standard normal distribution function (Lee, 1983).

To properly construct the disbanding correction variable, it is important to include at least one variable that should affect venture disbanding but does not have a direct effect on entrepreneurial behaviors or profitability. We included two instruments as additional exogenous covariates. First, whether respondent's parent owned or ran their own business was included because a number of studies have noted that a young person growing up in families in which the parents owned a business develops knowledge of what is involved in running a business, a valuable background for future entrepreneurs (Duchesneau & Gartner, 1990). They may thus be more aware of the challenges they will face and be better prepared and less disheartened when those problems arise (Cooper, Gimeno-Gascon, and Woo, 1994), reducing the possibility of disbanding a new venture when the entrepreneurs are faced with challenges. Second, whether any founder has outside job in addition to the current focal ventures was included as another additional exogenous covariate. It is because the entrepreneur's decision to maintain a full-time or part-time job outside the venture can also influence the perseverance of the venture. Entrepreneurs with outside employment may have low thresholds to exit their new ventures because of lower switching costs or high thresholds due to available income from other employment (Gimeno et al., 1994)

## **3.2. Variables and Measures**

### **3.2.1. Dependent variables:**

We relied on three dependent variables in this study. The first three dependent variables capture different types of entrepreneurial behaviors of nascent firms: *Early Planning*, *Early Entrepreneurial Actions*, and *Inactions*. For early planning, we followed recommendations in the literature and focused on the intensity of planning rather than the outcome of planning (Brinckmann et al., 2010). We used three questions from PSED II about different activities that prior research has indicated are important components of planning. In addition, we used the questions that specifically asked the date (month and year) of starting each activity because each firm was initiated at different times and we want to measure the intensity of each entrepreneurial behavior for a specific and exact time period. Thus, the following questions were included to measure *Early Planning*: (1) in what months and year did you start preparing the business plan? (2) In what month and year did these financial projections begin for this (new) business? and (3) in what month and year did collecting the information of competitors begin? All these activities contribute to the intensity of planning. Also, to be consistent with prior research on new venture organizing activities (Carter et al., 1996; P. D. Reynolds & White, 1997), each activity was dichotomized to 1 if an activity was initiated each year, and if not, 0. Thus, the intensity of planning activities is scaled 0 to 3 (e.g. if none of activity was initiated, 0; if all of three activities were implemented, 3). We defined as the early stage of firm development the first two years of new ventures that initiated startup activities because entrepreneurs consider three years to be long-term future (Bluedorn & Martin, 2008). Thus, the first dependent variable, *Early Planning*, captures planning activities carrier out during the first two years after new ventures initiated the first startup activity. The second dependent variable, *Early Entrepreneurial Actions*, concerns the extent to which firms engaged startup activities directly related to production and sales during the same time period. To measure the intensity of early entrepreneurial actions, we identified



three startup activities that are directly related to productions and sales. The following activities were included: (1) In what month and year did the development of this product or service begin? (2) In what month and year was supplier credit first established? (3) In what month and year did the purchases of any raw materials, inventory, supplies or components begin specifically for this (new) business? All these activities contribute to the intensity of entrepreneurial actions. Similar to early planning, each entrepreneurial action was dichotomized to 1 if an activity was initiated within each period of observation, and if not, 0. Thus, the intensity of entrepreneurial actions is scaled 0 to 3 (e.g. if none of activity was initiated, 0; if all of three activities were implemented, 3). Lastly, the variable of inactions is operationalized by reversing operationalization of six activities related to planning and actions. In terms of *Early Planning*, among 439 new ventures, 55 ventures (12.53%) initiated none of business planning related activities, 124 firms (28.25%) did 1, 142 firms (32.35%) did 2, and 128 firms (26.88%) completed 3 during the early stage of firm development. In terms of *Early Entrepreneurial Actions*, 56 ventures (12.96%) initiated none of entrepreneurial actions, 116 firms (24.42%) did 1, 161 firms (36.67%) did 2, and 106 firms (24.15%) completed 3 during the same period. *For Early Inactions*, 140 ventures (29.61%) complete most (five) or all six startup activities. A majority of ventures (255 ventures, 58.095) completed two to four startup activities. Only 54 ventures (12.30%) did nothing or completed just one activity among six different startup activities

Our fourth dependent variable is *Profitability*, which is an established firm performance measure (Miller & Cardinal, 1994; Russo & Fouts, 1997). PSED II measures this variable by asking whether the monthly revenue exceeded monthly expenses for more than six of the past twelve months The variable was coded 1 for yes and 0 for no.

### **3.2.2. Independent variables:**

We coded the level of *Education* attainment by number of years because the operationalization is the most widely used and an established way of measuring human capital in terms of education. More specifically, the highest level of education that entrepreneurs had completed was coded into number of years (e.g., 16 years for bachelor's degree). We measured *Industry Experience* as the total number of years of experience in the industry related to the current ventures. On average, entrepreneurs had 8.25 years of industry experience, but 93 firms (21.18%) consist of owners without any prior industry experience. *Founding experience* was measured by the number of businesses that the entrepreneur helped before starting the focal business. On average, entrepreneurs helped 0.99 ventures before starting the focal startup, but 242 firms (55.25%) consist of owners without any prior founding experience. We used the log transformation of this variable because the distribution of this variable was heavily skewed, containing several outliers. We corrected for zero years of experience by adding 1 to all values (Delmar and Shane, 2006).

In correspondence with Hypothesis 5 and Hypothesis 6, in the estimation of profitability we used *Early Planning* and *Early Entrepreneurial Action* as independent variables in the equation.

### **3.2.3. Control variables**

We control for a number of individual, organizational, and environmental-level factors that have been found in earlier studies to affect entrepreneurial behaviors and venture performance (e.g. Delmar and Shane, 2003; Honig and Karlsson, 2004; Brinckmann et al, 2014; Senyard, Baker and Davidsson, 2009; Harms and Schiele, 2012). In order to investigate the relationships between founders' education, founders' industry experience, founders' founding experience, and the level of intensity of early planning and early entrepreneurial action, several

individual, organizational, and environmental factors were controlled. As an individual factor, average age of founders was included. As organizational-level factors, initial financial resource endowment (i.e. the total amount contributed to this new business either to purchase ownership or as a loan to this new business) was included. Initial financial resource endowment was included because financial resource endowment can facilitate the implementation of entrepreneurial behaviors. In addition, we accounted for the institutional factors, given that previous studies have identified institutional forces as antecedents for planning (Honig and Karlsson, 2004). Specifically, the following control variables are included in our estimation: professional network (i.e. whether a firm registered for professional membership, yes:1, otherwise:0), investor funding requirement (i.e. whether external funding was sought, yes:1, otherwise:0), and industry group (i.e. 2002 NAICS four-digit codes) (Honig and Karlsson, 2004). Lastly, the level of market competitiveness was included as an environmental-level factor because the level of market competitiveness can affect whether and when new ventures can achieve profits. We measure this based on the founders' perception of competition with a three-point scale administered at the first interview. The scale is: '0' equals 'no other businesses offering the same products or services to your potential customers', '1' equals 'few businesses offering the same products/services', and '3' equals 'many businesses offering the same products/services.'

### **3.3. Estimation Methods**

Our first two dependent variables, early planning and early entrepreneurial action, have an ordinal character from 0 to 3, the level of employment of respective types of startup activities. Thus, an ordered probit estimator was used for the multivariate analysis (Davidson & MacKinnon, 1993) to address the non-linearity. Higher values indicate higher degrees of

engagement of each type entrepreneurial activities. In our second study, where we examine the relationship between the engagement level of each type of entrepreneurial behaviors and the achievement of profitability, we use random-effect binary logit models to test how the intensity of each type of entrepreneurial behaviors influence the achievement of profitability.

#### 4. ANALYSES AND RESULTS

Table 1 reports descriptive statistics and bivariate correlations for the variables for all analysis. The correlations with focal independent variables are generally low ( $r < 0.34$ ). This suggests the absence of major multicollinearity concerns.

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Insert Tables 1 and 2 about here  
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Table 2 reports the full models including the relationships between founders' human capital (i.e. education, industry experience, and founding experience) and early entrepreneurial behaviors (early planning, early action, and early inaction) (Model 1-6), and the relationships between early entrepreneurial behaviors and firm performance (Model 7-8). Particularly, the first two models (Model 1 and 2) were developed to see the factors that influence the implementation of early planning, the next two models (Model 3 and 4) are established to investigate the factors that influence the implementation of early entrepreneurial actions, and the following two models (Model 5 and 6) are developed to examine the factors impacting entrepreneurs' inactions. Across all models, inverse mills ratios that were calculated from selection correction models were included to control for factors that affect venture disbanding and to partial out the factors that influence survival of ventures.

For early planning, Model 1 provides the base model without education, industry experiences, and founding experience variables included. Model 2 adds variables of education, industry experiences, and founding experience of entrepreneurs. Overall model is significant ( $\chi^2 = 411.99, p < 0.0001$ ). Among the control variables, institutional forces are significantly positive (i.e. professional network: coefficient=0.451,  $p < 0.01$ ; investor funding requirement: coefficient=0.546,  $p < 0.01$ ), which is consistent with prior findings (Honig and Karlsson, 2004). Initial financial resource endowment also has a significant and positive impact on entrepreneurs' early planning behaviors. Model 2 also provides support for Hypothesis 1a and Hypothesis 2a. The level of education of entrepreneurs has a significant and positive effect on implementation of early planning (coefficient =0.074,  $p < 0.01$ ). And, the level of industry experience of entrepreneurs has a significant and negative effect on implementation of early business planning activities (coefficient = - 0.016,  $p < 0.01$ ). For early entrepreneurial actions, Model 3 provides the base model without main variables (education, industry experiences, and founding experience) included. Model 4 adds the main variables. Overall model is significant ( $\chi^2 = 408.49, p < 0.0001$ ). Among the control variables, initial financial resource endowment is significant in this model. Model 4 provides support for Hypothesis 2b and 3b, which are that industry experience and founding experience have positive influences on entrepreneurs' extent of early stage entrepreneurial action (coefficient =0.014,  $p < 0.05$  and coefficient =0.088,  $p < 0.01$ , respectively), but Hypothesis 1b is not supported. Contrary to Hypothesis 1b, formal education has a positive and significant influence on entrepreneurs' extent of early stage entrepreneurial action (coefficient =0.089,  $p < 0.001$ ). For early inactions, Model 5 provides the base model without education, industry experiences, and founding experience variables included. Model 6 adds the variables of education, industry experiences, and founding experience of entrepreneurs.

Overall model is significant ( $\chi^2 = 415.77, p < 0.0001$ ). Among the control variables, institutional forces have significant negative impacts (i.e. professional network: coefficient = -0.359,  $p < 0.05$ ; investor funding requirement: coefficient = -0.440,  $p < 0.01$ ). Model 6 provides support for Hypothesis 4a and Hypothesis 4C. The level of education of entrepreneurs has a significant and negative effect on implementation of early planning (coefficient = -0.102,  $p < 0.001$ ). And, the level of founding experience of entrepreneurs has a significant and negative effect on early inactions (coefficient = -0.077  $p < 0.05$ ).

Model 7 and 8 provide the random effects logistics regression showing the impacts of different entrepreneurial behaviors to predict profitability: early planning and early actions. First, we observe that the results across the two models demonstrate the importance of correcting for survival bias because the selection lambda has a significant effect on profitability, particularly in the full model (Model 8) although the significance is marginal (coefficient = -1.974,  $p < 0.10$ ), indicating that failure to correct for selection would potentially yield biased estimates in the prediction of different entrepreneurial behaviors (early planning and early entrepreneurial action) on achieving profitability. Model 7 provides the base model without different early entrepreneurial behaviors. Model 8 adds both early planning variable and early entrepreneurial action variable to test Hypothesis 5 (i.e. early stage planning has a positive influence on performance) and Hypothesis 5b (i.e. early stage entrepreneurial action has a positive influence on performance). In Model 8, early planning doesn't have any significant impact on achieving profitability, thus Hypothesis 5 is not supported. However, early entrepreneurial action has a significant impact on achieving profitability (coefficient = 0.351,  $p < 0.01$ ), supporting for Hypothesis 6. Moreover, the additions of two entrepreneurial behaviors improve the overall  $\chi^2$  of the profitability model ( $\Delta\chi^2 = 12.80$ ), an effect of any entrepreneurial behavior larger than the

addition of any other single variable in our model, which shows an importance of the implementation of entrepreneurial actions in the earliest stage of firm development, compared to the implementation of early planning or any of entrepreneurs' human capital (education, industry experience, and founding experience).

## **5. DISCUSSION AND CONCLUSIONS**

It is important to realize that dealing with uncertainty is difficult and nascent entrepreneurs have very few resources. Thus, they must ensure that they use these resources to the best of their ability. Choosing the appropriate course of entrepreneurial behaviors (i.e. the appropriate amount and type of planning as well as the appropriate type and amount of action) is therefore a very important issue for nascent entrepreneurs. We suppose that entrepreneurs' human capital, particularly education, industry experience, and founding experience, influences entrepreneurs' decision-making process and thus entrepreneurs' course of actions. Therefore, we investigated the mechanisms by which education, industry experience, and founding experience increase the likelihood of specific type entrepreneurial behaviors for new firms (i.e. early planning and early entrepreneurial actions). We find evidence supporting the ideas that education increases a firm's chances of early planning. Also, our study shows that industry experience increases a firm's chances of early entrepreneurial actions but decreases a firm's chances of early planning. Founding experience also has a positive and significant impact on early actions, however, founding experience doesn't have any significant negative impact on early planning. However, in contrast to our hypothesis, education also increases a firm's chances of early entrepreneurial actions. Furthermore, most types of human capital (education and founding experience), except for industry experience, have significant and negative impacts on

entrepreneurs' inactions. In terms of the relationships between early entrepreneurial behaviors and firm performance, only early entrepreneurial actions have positive impacts on firm performance. Below, we discuss our results, as well as their theoretical and practical implications.

### **5.1. The Antecedents of Early Planning**

As hypothesized, we find that education has a positive impact on early planning, and industry experience has a negative impact on early planning. This suggests that founders with advanced education will actively adopt planning as one of early startup activities. We conjecture that their rational cognitive style trained for a long time through formal education, conforming behaviors under institutional pressure, and perceived high uncertainty all contribute to their inclination for planning. This finding also suggests that founders with more industry experience are less likely to conduct planning-related activities in the early period of firm development. It might be that experienced entrepreneurs have usually developed their intuitions through their field-experiences, and thus their knowledge and intuitions are usually hard to be codifiable. With the limited resources in new ventures, experienced entrepreneurs would not spend their valuable time and resources on codifying their knowledge into business plans, which is considered to be time-consuming. Also, they are more confident about their capabilities on managing their new ventures and have less need for legitimizing their firms, reducing the probability of their investments on planning activities. This finding is contracted with what Brinckmann and Kim (2015) assumed about the antecedents of planning: they hypothesized all types of human capital (whether it is from education or experience) would have positive impacts on planning because the information, knowledge, and skills previously gained would help business planning process. Our study shows that different types of knowledge would reinforce different types of



entrepreneurial behaviors: entrepreneurs' education helps facilitating business planning process, but entrepreneurs' prior industry experiences rather impede entrepreneurs to engage in planning process because their intuitive cognition ability in fact substitutes for the role of business planning.

## **5.2. The Antecedents of Early Entrepreneurial Actions**

As hypothesized, we find that both industry and founding experience have positive impacts on early entrepreneurial action. Particularly, entrepreneurs with industry experience seem to have a clear pattern in terms of their early entrepreneurial behaviors, particularly considering the finding about their behaviors on early planning (i.e. experienced entrepreneurs are less likely to implement early planning). It seems that industry experienced entrepreneurs have a clear behavioral pattern in the earliest period of firm development: they tend to take more actions and plan less in the earliest period of ventures. It proves that confident experienced entrepreneurs depend more on their intuition and gut feelings rather than rational analysis, and they are more mean-driven than goal-driven, thus they rather make do whatever they have and effectuate. Cassar (2014) recently found that entrepreneurs' industry experience is associated with more accurate forecast on their performance. His study supports our finding on why experienced entrepreneurs may not necessarily rely on market research, rational analysis, or systematic planning in the earliest period of firm development. For founding experience, although entrepreneurs with founding experience do not show a clear pattern on early planning versus early action as much as entrepreneurs with industry experience, the results clearly show that entrepreneurs with founding experience do not tend to develop business plans in the early stage of firm development, but they evidently act earlier than entrepreneurs without founding experience. However, contrary to what we hypothesized, highly educated entrepreneurs are more

likely to engage with entrepreneurial actions as well. In other words, entrepreneurs' high level of education does not seem to necessarily detract them from engaging with actions, or rather it might contribute to more entrepreneurial actions. This suggests that especially for the ones with a high level of education two different types of entrepreneurial behaviors might have positive relationships. They tend to be diligent and perseverant, so they are less likely to procrastinate or postpone their actions. Thus, they will actively take actions according to the timelines of their plans, thus possibly facilitating early entrepreneurial actions earlier than later.

### **5.3. Early Entrepreneurial Behaviors and Firm Performance**

We find that only early entrepreneurial actions, have positive impacts on firm performance and that the positive impact of early planning on firm performance was not supported. First, in terms of early actions, early entrepreneurial action seems to contribute to the firm performance by helping entrepreneurs to effectively cope with external uncertainties through interactions with market (e.g. refinements and development of their products/service based on customer feedback and faster arrivals on workable solutions through iterative process with relevant stakeholders). Also, it is interesting to observe that the effect of early planning on performance is not significant when entrepreneurs' alternative behavior to planning was considered. Some studies on planning have argued that human capital is positively related to planning, which in turn, positively impacts success (Baum et al., 2001; Frese et al., 2007). However, we find that there is no linear positive relationship among human capital, planning, and firm outcomes particularly when alternative actions were considered. It may signify that to achieve profitability taking action is more important than planning, managing external uncertainty is more critical than managing internal uncertainty, and finding marketable products/services and workable solution are more significant than regulating actions of

entrepreneurs or internal teams. This provides an important implication particularly to the scholars who have been investigating business planning. The implications of this study on business planning literature will be discussed further in depth in the next section.

#### **5.4. Implications for Theory and Research**

Our findings have three key implications for business planning, entrepreneurial behaviors and human capital literatures. First, prior discussions on planning literature mostly focused on whether having plans (e.g., Brinckmann, Grichnik, and Kapsa, 2010) or whether having formalized plans (e.g., Hechavarria, Renko, and Matthews, 2012) benefits firm performance or not. However, the alternatives to planning should not be uniformly classified within an identical category: non-planning. It is important to acknowledge that entrepreneurs use different strategies to deal with uncertainty when starting firms: (1) researching, analyzing, and planning, (2) taking more practical actions that are directly related to firm performance, or (3) doing nothing. Contrary to doing nothing, taking actions (i.e. entrepreneurial actions) will have a positive implication on performance, thus, distinguishing two alternative behaviors is important. This study suggests that experienced entrepreneurs have a disposition not to plan in the earliest stage, instead implement other important startup activities that might be directly related to productions and sales based on their intuitive appraisals. In the field of entrepreneurship, experienced entrepreneurs are regarded as an important group achieving successful businesses, thus omitting their behavioral patterns will not provide exact understanding about the impacts of planning. Thus, considering both sides of entrepreneurial behaviors (i.e. early planning and early actions) may help to resolve prior inconsistent results on planning literature (Delmar and Shane, 2003; Carter et al, 1996; Bhide, 2000) especially in the earliest period of startups. In addition, the result shows that only the effect of entrepreneurial actions has a positive impact on performance. This

suggests that entrepreneurship scholars should develop a more nuanced understanding of the startup activities in new firm creation: early planning may not be important as much as other scholar argued for (e.g., Chen, Yao, & Kotha, 2009), and other type of entrepreneurial actions might be as much as or more important for success of new ventures. Or, planning might be important in a specific context such as soliciting for external funding. However, current planning handbooks emphasize that all firms devote a great deal of time and effort to planning.

The second contribution of this paper is the comprehensive and nuanced identification of the antecedents of entrepreneurial behaviors, particularly in terms of business planning. Prior empirical studies uncovering antecedents of planning primarily identified that institutional forces will have positive impacts on planning (Honig & Karlsson, 2004; Karlsson & Honig, 2009) or all types of human capital will have uniformly positive impacts (i.e. education and experiences) (Brinckmann and Kim, 2015). This study suggests a nuanced implication of human capitals as antecedents of planning. Furthermore, the result shows that different types of human capital lead to different entrepreneurial behaviors: planning versus entrepreneurial actions. Theoretically connecting entrepreneurs' prior knowledge and experiences to their dominant cognitive styles, this study provides theoretical explanations on how prior knowledge and experience impact on early entrepreneurial behaviors. Many studies have investigated the relationships between prior knowledge and opportunity discovery (Ardichvili, Cardozo, & Ray, 2003; Shane, 2000), but the relationship between prior knowledge and opportunity exploitation has not been examined as much. In this study, we elucidated why discrete types of prior knowledge and experiences would differently reinforce the ways of exploiting opportunity. This finding is important because it provides a clue that individual-level attributes be more likely to generate large, statistically significant, robust, and consistent differences of entrepreneurial firms' behaviors.

Additionally, we shed light on the implications of the literature of human capital (Becker, 1964). To date, the interest in human capital continues, and most authors conclude that human capital is related to success (Cassar, 2006; Cooper, Gimeno-Gascon, & Woo, 1994). The magnitude of this relationship, however, remains unknown or seems to vary considerably across studies (Cooper et al., 1994; Frese, Krauss, Keith, Escher, Grabarkiewicz, Luneng, Heers, Unger, & Friedrich, 2007). We conjecture that human capital might be too distant factors that can significantly influence success of firms because there would be many other factors reinforcing or distracting the relationship between human capital and firm performance. This study also shows the limited explanation power of human capital on firm performance: education, industry experience, and founding experience have significant impacts on entrepreneurial behaviors, however the human capitals do not have any direct impacts on firm performance after survival bias has been corrected and when entrepreneurial behaviors were included in the last model in the second study. On the other hand, entrepreneurial behaviors have significant and direct impacts on firm performance. Based on the results, we suggest that, instead of directly applying human capital to firm performance, considering the mediating mechanism, such as entrepreneurial behaviors, would increase the explanatory power of the relationship between human capital and firm performance.

### **5.5. Limitations and Future Research**

As with all research, there are some limitations in this research that need to be acknowledged. These limitations open the door for future researchers to make a contribution to this field. First, we did not explicitly measure cognitive styles although we built on the literature of cognitive style to examine the relationship between human capital and entrepreneurial behaviors. Studies that explicitly examine the relationships among human capital, cognitive

style, and entrepreneurial behaviors would be of great value in order to understand the antecedents of early entrepreneurial behaviors. Second, this study mainly investigates entrepreneurial behaviors in the earliest stage of firm development. The mechanisms would potentially differ in the later firm development stage because the level of uncertainty and the level of organization developments are dissimilar. Third, we measured entrepreneurial behaviors based on their level of intensity during the first two years after startups were initiated. That being said, we did not measure an exact sequence of startup activities: whether planning happens before entrepreneurial actions or vice versa. In future research it would be valuable to study the sequence of startup activities to understand how different entrepreneurial behaviors interact with each other.

**Table 5 Descriptive Statistics and Correlations <sup>a</sup>**

Variable	Obs	Mean	S.D.	Min	Max	1	2	3	4	5	6	7	8	9	10	11
1 Early Planning	878	1.736	0.99	0	3	1.00										
2 Early Entrepreneurial Action	878	1.722	0.97	0	3	0.34 ***	1.00									
3 Average Education	878	13.95	2.40	8	21	0.19 ***	-0.02	1.00								
4 Average Industry Experience	878	8.251	9.64	0	43	-0.01 ***	0.09	0.05 *	1.00							
5 Average Startup Experience	876	0.986	1.75	0	20	0.09 ***	-0.03	0.11 ***	0.03	1.00						
6 Average Age	864	43.2	12.64	18	81	0.02	0.02	0.20 ***	0.32 ***	0.23 ***	1.00					
7 Professional Network	878	0.121	0.33	0	1	0.17 ***	0.02	0.15 ***	0.00	0.13 ***	0.08 ***	1.00				
8 Investor Funding Requirement	878	0.132	0.34	0	1	0.19 ***	-0.03	0.03	0.03	0.09 ***	0.00	0.16 ***	1.00			
9 Financial Resource Endowment	872	17569	146023	0	3E+06	0.08 **	-0.03	0.10 ***	0.01	0.03	0.00	0.16 ***	0.18 ***	1.00		
10 Market Competitiveness	872	1.183	0.70	0	2	0.03 *	-0.02	0.02	0.02	-0.08 ***	-0.06 ***	0.07 ***	0.12 ***	0.08 ***	1.00	
11 Parents Owned Business	872	0.502	0.50	0	1	0.05 ***	-0.02 †	-0.02	-0.01	0.10 ***	-0.01	0.06 ***	0.07 ***	0.00	0.00	1.00
12 Outside Job	878	0.483	0.50	0	1	-0.02	0.08 ***	0.01	0.00	-0.12 ***	-0.16 ***	-0.03 *	0.01	-0.01	0.02 †	-0.05 **

<sup>a</sup> n = 878

† p < .10

\* p < .05

\*\* p < .01

\*\*\* p < .001

**Table 6 Lee's (1983) Heckman Two-Stage Model <sup>b</sup>**

<i>Dependent Variable:</i>	<b>Ordered Probit</b>						<b>Random Effect Logistics</b>	
	<b>Early Planning</b>		<b>Early Actions</b>		<b>Early Inactions</b>		<b>Profitability</b>	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
<b><u>Entrepreneur(s)' Behaviors</u></b>								
Early Planning							0.093 (0.10)	
Early Actions							0.351 ** (0.11)	
Early Inactions								
<b><u>Entrepreneur(s)' Human Capital</u></b>								
Education		0.074 ** (0.02)		0.089 *** (0.02)		-0.102 *** (0.02)	-0.023 (0.08)	-0.051 (0.08)
Industry Experience		-0.016 ** (0.01)		0.014 * (0.01)		0.000 (0.01)	0.017 (0.02)	0.013 (0.02)
Founding Experience		0.040 (0.03)		0.088 ** (0.03)		-0.077 * (0.03)	0.025 (0.06)	0.00 (0.06)
<b><u>Control Variables</u></b>								
Average Age	-0.005 (0.00)	-0.001 (0.01)	0.001 (0.00)	0.000 (0.01)	0.000 (0.00)	-0.001 (0.01)	-0.015 (0.01)	-0.014 (0.01)
Professional Network	0.451 ** (0.17)	0.436 * (0.17)	0.142 (0.17)	0.127 (0.17)	-0.359 * (0.16)	-0.333 * (0.16)	0.461 (0.28)	0.424 (0.28)
Investor Funding Requirement	0.546 ** (0.16)	0.518 ** (0.16)	0.178 (0.16)	0.196 (0.16)	-0.440 ** (0.15)	-0.429 ** (0.15)	0.374 (0.27)	0.328 (0.26)
Initial Financial Resource Endowment	0.000 * (0.00)	0.000 * (0.00)	0.000 ** (0.00)	0.000 † (0.00)	0.000 (0.00)	0.000 (0.00)	0.000 (0.00)	0.000 (0.00)
Market Competitiveness	0.018 (0.07)	0.003 (0.07)	0.121 (0.07)	0.028 (0.07)	-0.071 (0.07)	-0.030 (0.07)	0.234 † (0.14)	0.221 (0.14)
Inverse Mills Ratio	-0.132 (0.69)	0.603 (0.79)	-0.446 (0.69)	1.414 † (0.80)	0.353 (0.65)	-1.269 † (0.74)	-1.888 (1.17)	-1.974 † (1.17)
Constant							0.929 (2.38)	0.593 (2.35)
Number of Observations	761	761	761	761	761	761	2058	2058
Number of Groups							343	343
4-digit Industry Dummies Included	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummy Included	Yes	Yes	Yes	Yes	Yes	Yes		
Prob > F	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
LR Chi2 / Wald Chi2	391.20	411.99	383.38	408.49	387.92	415.77	137.91	150.71
Pseudo R2	0.194	0.204	0.191	0.204	0.140	0.150		

<sup>b</sup> Unstandardized estimates are reported, with standard errors.

† p < .10

\* p < .05

\*\* p < .01

\*\*\* p < .001



## REFERENCES

- Aldrich, H. (1999). *Organizations evolving*: Sage.
- Allinson, C., & Hayes, J. (1996). The cognitive style index. *Journal of Management Studies*, 33(1), 119-135.
- Ardichvili, A., Cardozo, R., & Ray, S. (2003). A theory of entrepreneurial opportunity identification and development. *Journal of Business Venturing*, 18(1), 105-123.
- Austin, G. A., Bruner, J., & Goodnow, J. (1956). A study of thinking. *New York*.
- Baker, T., Miner, A. S., & Eesley, D. T. (2003). Improvising firms: Bricolage, account giving and improvisational competencies in the founding process. *Research policy*, 32(2), 255-276.
- Baker, T., & Nelson, R. E. (2005). Creating something from nothing: Resource construction through entrepreneurial bricolage. *Administrative science quarterly*, 50(3), 329-366.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*: Macmillan.
- Baron, R. A. (2004). The cognitive perspective: a valuable tool for answering entrepreneurship's basic "why" questions. *Journal of Business Venturing*, 19(2), 221-239.
- Baron, R. A. (2007). Behavioral and cognitive factors in entrepreneurship: Entrepreneurs as the active element in new venture creation. *Strategic Entrepreneurship Journal*, 1(1-2), 167-182.
- Becker, G. S. (1964). *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education*, by Gary S. Becker: London.
- Bhide, A. (2000). *The origin and evolution of new businesses*: Oxford University Press.
- Bird, B. (1988). Implementing entrepreneurial ideas: The case for intention. *Academy of Management review*, 13(3), 442-453.
- Bird, B., & Schjoedt, L. (2009). Entrepreneurial behavior: Its nature, scope, recent research, and agenda for future research *Understanding the entrepreneurial mind* (pp. 327-358): Springer.
- Bluedorn, A. C., & Martin, G. (2008). The time frames of entrepreneurs. *Journal of Business Venturing*, 23(1), 1-20.
- Bower, J. L. (1986). *Managing the resource allocation process: A study of corporate planning and investment* (Vol. 3): Harvard Business Press.
- Brannon, D. L., Wiklund, J., & Haynie, J. M. (2013). The varying effects of family relationships in entrepreneurial teams. *Entrepreneurship theory and practice*, 37(1), 107-132.
- Brigham, K. H., De Castro, J. O., & Shepherd, D. A. (2007). A Person-Organization Fit Model of Owner-Managers' Cognitive Style and Organizational Demands. *Entrepreneurship theory and practice*, 31(1), 29-51.
- Brinckmann, J., Grichnik, D., & Kapsa, D. (2010). Should entrepreneurs plan or just storm the castle? A meta-analysis on contextual factors impacting the business planning-performance relationship in small firms. *Journal of Business Venturing*, 25(1), 24-40.
- Brinckmann, J., & Kim, S. M. (2015). Why We Plan: The Impact of Nascent Entrepreneurs' Cognitive Characteristics and Human Capital on Business Planning. *Strategic Entrepreneurship Journal*.
- Carter, N. M., Gartner, W. B., & Reynolds, P. D. (1996). Exploring start-up event sequences. *Journal of Business Venturing*, 11(3), 151-166.
- Cassar, G. (2006). Entrepreneur opportunity costs and intended venture growth. *Journal of Business Venturing*, 21(5), 610-632.

- Cassar, G. (2014). Industry and startup experience on entrepreneur forecast performance in new firms. *Journal of Business Venturing*, 29(1), 137-151.
- Castrogiovanni, G. J. (1996). Pre-startup planning and the survival of new small businesses: Theoretical linkages. *Journal of Management*, 22(6), 801-822.
- Cooper, A. C., Gimeno-Gascon, F. J., & Woo, C. Y. (1994). Initial human and financial capital as predictors of new venture performance. *Journal of Business Venturing*, 9(5), 371-395.
- Davidson, R., & MacKinnon, J. G. (1993). Estimation and inference in econometrics. *OUP Catalogue*.
- Davidsson, P., & Gordon, S. R. (2012). Panel studies of new venture creation: a methods-focused review and suggestions for future research. *Small Business Economics*, 39(4), 853-876.
- Davidsson, P., & Honig, B. (2003). The role of social and human capital among nascent entrepreneurs. *Journal of Business Venturing*, 18(3), 301-331.
- Delmar, F., & Shane, S. (2003). Does business planning facilitate the development of new ventures? *Strategic Management Journal*, 24(12), 1165-1185.
- Dencker, J. C., Gruber, M., & Shah, S. K. (2009). Pre-entry knowledge, learning, and the survival of new firms. *Organization Science*, 20(3), 516-537.
- Dimov, D. (2010). Nascent entrepreneurs and venture emergence: Opportunity confidence, human capital, and early planning. *Journal of Management Studies*, 47(6), 1123-1153.
- Duchesneau, D. A., & Gartner, W. B. (1990). A profile of new venture success and failure in an emerging industry. *Journal of Business Venturing*, 5(5), 297-312.
- Fisher, G. (2012). Effectuation, causation, and bricolage: a behavioral comparison of emerging theories in entrepreneurship research. *Entrepreneurship theory and practice*, 36(5), 1019-1051.
- Frese, M. (2009). *Toward a psychology of entrepreneurship: An action theory perspective*: Now Publishers Inc.
- Frese, M., Krauss, S. I., Keith, N., Escher, S., Grabarkiewicz, R., Luneng, S. T., . . . Friedrich, C. (2007). Business owners' action planning and its relationship to business success in three African countries. *Journal of Applied Psychology*, 92(6), 1481.
- Gielnik, M. M., Barabas, S., Frese, M., Namatovu-Dawa, R., Scholz, F. A., Metzger, J. R., & Walter, T. (2014). A temporal analysis of how entrepreneurial goal intentions, positive fantasies, and action planning affect starting a new venture and when the effects wear off. *Journal of Business Venturing*, 29(6), 755-772.
- Greene, W. (2010). A stochastic frontier model with correction for sample selection. *Journal of productivity analysis*, 34(1), 15-24.
- Hargadon, A. B., & Bechky, B. A. (2006). When collections of creatives become creative collectives: A field study of problem solving at work. *Organization Science*, 17(4), 484-500.
- Hechavarria, D. M., Renko, M., & Matthews, C. H. (2012). The nascent entrepreneurship hub: goals, entrepreneurial self-efficacy and start-up outcomes. *Small Business Economics*, 39(3), 685-701.
- Honig, B. (2004). Entrepreneurship education: Toward a model of contingency-based business planning. *Academy of Management Learning & Education*, 3(3), 258-273.
- Honig, B., & Karlsson, T. (2004). Institutional forces and the written business plan. *Journal of Management*, 30(1), 29-48.

- Hough, J. R., & Ogilvie, D. (2005). An Empirical Test of Cognitive Style and Strategic Decision Outcomes\*. *Journal of Management Studies*, 42(2), 417-448.
- Janicik, G. A., & Bartel, C. A. (2003). Talking about time: Effects of temporal planning and time awareness norms on group coordination and performance. *Group Dynamics: Theory, Research, and Practice*, 7(2), 122.
- Karlsson, T., & Honig, B. (2009). Judging a business by its cover: An institutional perspective on new ventures and the business plan. *Journal of Business Venturing*, 24(1), 27-45.
- Katz, J., & Gartner, W. B. (1988). Properties of emerging organizations. *Academy of Management review*, 13(3), 429-441.
- Kickul, J., Gundry, L. K., Barbosa, S. D., & Whitcanack, L. (2009). Intuition versus analysis? Testing differential models of cognitive style on entrepreneurial self-efficacy and the new venture creation process. *Entrepreneurship theory and practice*, 33(2), 439-453.
- Klepper, S. (2001). Employee startups in high-tech industries. *Industrial and Corporate Change*, 10(3), 639-674.
- Kor, Y. Y., & Sundaramurthy, C. (2008). Experience-based human capital and social capital of outside directors. *Journal of Management*.
- Lee, L.-F. (1983). Generalized econometric models with selectivity. *Econometrica: Journal of the Econometric Society*, 507-512.
- Leonard, D. A. (1998). The Role of Tacit Knowledge in Group Innovation California Management Review, 40 (3), 112–132 (1998). *California management review*, 40(3), 112-132.
- Locke, E. A., & Latham, G. P. (1990). *A theory of goal setting & task performance*: Prentice-Hall, Inc.
- Matthews, C. H., & Scott, S. G. (1995). Uncertainty and planning in small and entrepreneurial firms: an empirical assessment. *Journal of Small Business Management*, 33(4), 34.
- McMullen, J. S., & Shepherd, D. A. (2006). Entrepreneurial action and the role of uncertainty in the theory of the entrepreneur. *Academy of Management review*, 31(1), 132-152.
- Miller, C. C., & Cardinal, L. B. (1994). Strategic planning and firm performance: A synthesis of more than two decades of research. *Academy of Management Journal*, 37(6), 1649-1665.
- Miner, A. S., Bassof, P., & Moorman, C. (2001). Organizational improvisation and learning: A field study. *Administrative science quarterly*, 46(2), 304-337.
- Mintzberg, H. (1976). *Planning on the left side and managing on the right*: Harvard Business Review July-August.
- Mintzberg, H. (1989). *Mintzberg on management: Inside our strange world of organizations*: Simon and Schuster.
- Nickerson, R., Perkins, D., & Smith, E. (1985). The teaching of thinking. Hillsdale, NJ: Lawrence Erlbaum Associates. Inc. *Nickerson The teaching of thinking 1985*.
- Ouchi, W. G. (1980). Markets, bureaucracies, and clans. *Administrative science quarterly*, 129-141.
- Reynolds, P., & Miller, B. (1992). New firm gestation: Conception, birth, and implications for research. *Journal of Business Venturing*, 7(5), 405-417.
- Reynolds, P. D. (2011). Informal and early formal financial support in the business creation process: exploration with PSED II data set. *Journal of Small Business Management*, 49(1), 27-54.
- Reynolds, P. D., & White, S. B. (1997). *The entrepreneurial process: Economic growth, men, women, and minorities*: Quorum Books Westport, CT.

- Russo, M. V., & Fouts, P. A. (1997). A resource-based perspective on corporate environmental performance and profitability. *Academy of Management Journal*, 40(3), 534-559.
- Sarasvathy, S. D. (2001). Causation and effectuation: Toward a theoretical shift from economic inevitability to entrepreneurial contingency. *Academy of Management review*, 26(2), 243-263.
- Sarasvathy, S. D. (2009). *Effectuation: Elements of entrepreneurial expertise*: Edward Elgar Publishing.
- Sexton, D. L., & Bowman-Upton, N. B. (1991). *Entrepreneurship: Creativity and growth*: Macmillan Pub Co.
- Shane, S. (2000). Prior knowledge and the discovery of entrepreneurial opportunities. *Organization Science*, 11(4), 448-469.
- Shrader, C. B., Taylor, L., & Dalton, D. R. (1984). Strategic planning and organizational performance: a critical appraisal. *Journal of Management*, 10(2), 149-171.
- Song, M., Zhao, Y. L., Arend, R. J., & Im, S. (2015). Strategic planning as a complex and enabling managerial tool. *Strategic Management Journal*.
- Stinchcombe, A. L. (1965). Social structure and organizations. *Handbook of organizations*, 142-193.
- Van Gelderen, M., Kautonen, T., & Fink, M. (2015). From entrepreneurial intentions to actions: Self-control and action-related doubt, fear, and aversion. *Journal of Business Venturing*.
- Vesper, K. H. (1993). *New venture mechanics*: Prentice Hall.
- von Gelderen, M., Frese, M., & Thurik, R. (2000). Strategies, uncertainty and performance of small business startups. *Small Business Economics*, 15(3), 165-181.
- Wiltbank, R., Dew, N., Read, S., & Sarasvathy, S. D. (2006). What to do next? The case for non-predictive strategy. *Strategic Management Journal*, 27(10), 981-998.
- Wolf, C., & Floyd, S. W. (2013). Strategic Planning Research Toward a Theory-Driven Agenda. *Journal of Management*, 0149206313478185.