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DOES BUSINESS PLANNING FACILITATE THE DEVELOPMENT OF NEW VENTURES?

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Many prior researchers have criticized business planning, arguing that it interferes with the efforts of firm founders to undertake more valuable actions to develop their fledgling enterprises. In this paper, we challenge this negative view of business planning, arguing that business planning is an important precursor to action in new ventures. By helping firm founders to make decisions, to balance resource supply and demand, and to turn abstract goals into concrete operational steps, business planning reduces the likelihood of venture disbanding and accelerates product development and venture organizing activity. Empirically, we examine 223 new ventures initiated in the first 9 months of 1998 by a random sample of Swedish firm founders and provide support for our hypotheses.

INTRODUCTION

Although some exceptions exist (see, for example, Matthews and Scott, 1995; McGrath and MacMillan, 2000), the prior literature generally contends that business planning offers little advantage to new venture founders (Bhide, 2000; Carter, Gartner, and Reynolds, 1996). Arguing that planning interferes with the efforts of firm founders to undertake more valuable firm organizing actions to develop their fledgling enterprises, the extant literature views business planning as a form of 'administrative behavior' that is harmful to new venture creation (Bhide, 2000). Instead of engaging in business planning, the literature generally argues that firm founders should move directly to action—buying facilities and equipment, seeking external capital, and initiating marketing and promotion (Bhide, 2000; Carter *et al*., 1996).

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In this paper, we challenge prior criticism of business planning. We define business planning as those efforts by firm founders to gather information about a business opportunity and to specify how that information will be used to create a new organization to exploit the opportunity (Castrogiovanni, 1996). Following prior researchers, we include as part of business planning the processes of gathering and analyzing information, evaluating required tasks, identifying risks and strategy, projecting financial developments, and documenting these things in a written plan (Castrogiovanni, 1996; Sexton and Bowman-Upton, 1991).

We examine the effect of business planning on three aspects of new venture development: product development, which we define as the creation of the product or service that the venture will sell; venture organizing activity, which we define as activities to establish the organization that will provide the new product or service; and disbanding, which we define as the cessation of efforts to develop the new venture. We focus on these three dimensions because they are

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necessary conditions for the creation of a new firm.

We argue that business planning helps firm founders to undertake venture development activities because planning facilitates goal attainment in many domains of human action (Cyert and March, 1964; Simon, 1964; Smith, Locke, and Barry, 1990). Specifically, we argue that planning helps firm founders to make decisions more quickly than with trial-and-error learning; to manage resource supply and demand in ways that minimize time-consuming bottlenecks; and to turn abstract goals into concrete operational activities more efficiently.

Empirically, we examine the hazard of disbanding and the level of new product development and venture organizing activity in 223 new ventures initiated in the first 9 months of 1998 by a random sample of Swedish firm founders and followed over their first 30 months. We first explore the effects of planning on the hazard of new venture disbanding, controlling for the effects of time, industry, venture strategy, and venture performance, using piece-wise exponential event history models. We then explore the effects of planning on product development and venture organizing activity, controlling for the effects of time, industry, venture strategy, venture performance, and unobserved venture-level heterogeneity, using fixed-effects regression. We find that business planning reduces the hazard of disbanding, and facilitates both product development and venture organizing activity.

Our empirical effort is important for several reasons. First, we provide insight into the creation of new organizations, an important but little understood aspect of business (Aldrich, 1999). Prior research has shown that the factors that explain the ongoing operations of established organizations often do not explain the creation of new organizations (Gartner, Bird, and Starr, 1992; Katz and Gartner, 1988), and that very little research actually explores the creation of new organizations (Aldrich, 1999). The development of a product or service, the creation of the organization that will deliver that product or service, and the continuation of the venture are three central parts of the new organization creation process (Bhave, 1994). By examining the relationship between business planning and product development, venture organizing activity, and venture disbanding, we provide insight into an important but poorly understood business phenomenon: the creation of new organizations.[1]

Second, we fill a void in the existing literature, which offers little in the way of a theoretically grounded explanation for why business planning should enhance product development, organizing activity, or the survival of new ventures (for an interesting exception see McGrath and MacMillan, 2000). By offering an explanation for why business planning is a useful activity, and then testing that argument empirically, we fill an important gap in the literature.

Third, we seek to offset a bias present in the existing literature. Although some researchers argue in favor of business planning (see, for example, Matthews and Scott, 1995; McGrath and MacMillan, 2000; Risseeuw and Masurel, 1994), the existing literature generally holds that business planning is not a worthwhile activity for firm founders (Bhide, 2000; Carter *et al*., 1996). Citing evidence from retrospective studies (Bhide, 2000; Shuman, Shaw, and Sussman, 1985), the literature generally argues that firm founders are better off relying on intuition than engaging in business planning (Allinson, Chell, and Hayes, 2000; Bird, 1988). By demonstrating that undertaking business planning reduces the hazard of venture disbanding and enhances venture organizing and product development activities, we hope to offset this bias.

Fourth, we seek to provide evidence of the relationship between *business* planning and the development of *new* ventures (Castrogiovanni, 1996). Most prior researchers have examined the relationship between *strategic* planning and financial measures in small, *established* firms (see Boyd, 1991, and Schwenk and Shrader, 1993, for reviews). However, this research offers little insight into the value of business planning in *new* ventures, particularly as it facilitates the venture development process. As a result, we have little information on the value of business planning activities to new venture development.[2]

[1] Although a variety of factors likely influence disbanding, product development, and organizing efforts in new ventures, we focus on the role of planning because previous research indicates that trial-and-error learning is ineffective for these activities in the early stages of a new venture (Van de Ven and Polley, 1992).

[2] Moreover, the limited empirical results we do have often come from static cross-sectional regression analyses that confound the venture opportunity with business planning activity. The need for panel data with techniques to partial out these sources of heterogeneity in empirically testing this question is described in greater detail in the methodology section.

THEORETICAL DEVELOPMENT

Many prior researchers have argued that business planning is not very helpful under the uncertain conditions that surround new venture formation. Four explanations for this have been offered in the literature. First, business planning takes time away from more valuable firm organizing actions that signal the 'reality' of the new venture to stakeholders. For example, Carter *et al*. (1996: 154) explain:

> Behavior such as buying facilities and equipment might be a more significant indicator to others that a nascent business is real than undertaking a behavior such as planning. Buying facilities may show others that the entrepreneur has made a significant commitment to creating a new business compared to what might be a less public demonstration of commitment like planning.

Second, firm founders have limited downside risk if they make a mistake. As Bhide (2000: 57) explains: 'entrepreneurs do not have much to lose from an erroneous forecast of relative ability or market size . . . They usually do not put much capital at risk.' Third, firm founders possess attributes that make them better off relying on intuition than engaging in planning. Allinson *et al*. (2000) argue that entrepreneurial intuition makes firm founders better able than other people to identify and evaluate opportunities. Fourth, the uncertainty and fast pace of entrepreneurial situations undermine the value of business planning (Bird, 1988). As a result, entrepreneurs are better off relying on intuition than seeking information that is likely to be inaccurate or outdated (Allinson *et al*., 2000).

However, these arguments conflict with the principles of organization theory, which holds that planning before taking action improves the quality of most human action (Ansoff, 1991; Locke and Latham, 1980), and suggest that business planning should facilitate new venture development. Planning is an important precursor to action because it provides a framework within which subsequent action takes place (Ansoff, 1991), thereby facilitating the achievement of goals (Locke and Latham, 1980). In particular, planning provides three benefits to people engaged in new venture development: (a) planning facilitates faster decision making by identifying missing information without first requiring the commitment of resources; (b) planning provides tools for managing the supply and demand of resources in a manner that avoids time-consuming bottlenecks; and (c) planning identifies action steps to achieve broader goals in a timely manner.

First, planning allows people to make faster decisions than they would with trial-and-error learning by facilitating the rapid discovery of missing information (Ansoff, 1991). By planning first and then acting second, people can test their assumptions without undertaking the time-consuming process of first expending resources (Armstrong, 1982). For example, a person can use a plan for building a house to decide whether to use wood or steel framing. By planning, the person can test assumptions about the design without having to build the structure to examine those assumptions.

Second, planning helps people to manage the supply and demand of resources, minimizing bottlenecks that slow their activity. By helping people recognize the relationship between actions and resource flows, planning allows people to more accurately estimate the timing of resource needs and resource slack (Armstrong, 1982). By allowing people to better estimate the timing of resource flows in the activity in which they are engaged (Bracker *et al*., 1988), planning minimizes the occurrence of bottlenecks that cause delays.

Third, by setting concrete objectives for the future, planning helps people develop specific steps for the achievement of their goals (Brews and Hunt, 1999), thereby facilitating the timely pursuit of their objectives. In particular, planning helps people approach their goals in a systematic way (Shrader *et al*., 1989), and keeps them from focusing on other activities that sidetrack their efforts (Robinson, 1984).[3] Moreover, when outcomes deviate from stated goals, planning facilitates the rapid correction of that deviation by allowing people to identify the source of deviation more quickly (Smith *et al*., 1990). Furthermore, planning allows people to make clear their preferences for timetables in ways that can be transmitted to others (Bird, 1992). Finally, planning helps people communicate their goals to others (Locke and Latham, 1980), thereby enhancing the pace at which others can act on those goals.

[3] Research in both psychology and organizational behavior has confirmed that setting objectives enhances people's ability to achieve their goals by focusing their attention (see Locke and Latham, 1980, and Rousseau, 1997, for reviews).

HYPOTHESES

Although the above arguments suggest that planning is beneficial for all business activity, we posit that business planning is particularly useful in the context of new venture development for three reasons. First, new venture development is based on self-set goals (e.g., complete product development), rather than relative performance goals (e.g., make greater profits than other firms). When people perceive that they have the opportunity and ability to influence the outcome of their own behavior, as is the case with the formation of a new venture, self-set goals have greater motivational properties than relative performance goals (Locke and Latham, 1980). Second, planning is more effective when the time span between planning and feedback is short (Locke and Latham, 1980). Because the time plan between business planning and feedback is much shorter during the new venture start-up process than is the case in operation of a large, mature organization, planning may be more valuable in this context. Third, planning is more valuable when the ratio of assumption to actual information is higher. When people do not have a track record of past performance to use as a guide, other tools become more important in evaluating the accuracy of assumptions. Because new ventures are new, much of the information on which founders make decisions takes the form of unproven assumptions rather than past results. By checking the internal consistency of different assumptions (e.g., is the hiring plan consistent with the projected level of sales?), business planning can improve the accuracy of founders' assumptions.

Consistent with the general argument presented above, business planning helps a firm founder make more timely venture development decisions; manage resource flows in a way that minimizes time-consuming bottlenecks; and turn broad venture goals into concrete operational steps that can be achieved in a timely manner. We describe each of these relationships in turn.

First, business planning speeds venture development decisions by helping firm founders anticipate problems and information needs. By anticipating potential problems and information needs, firm founders can identify solutions without engaging in slower trial-and-error learning. For example, a firm founder might evaluate the feasibility of developing two different types of launch vehicles for space tourism in his or her business plan. If the plan reveals that the development of launch vehicle A would be too costly, but launch vehicle B would not, developing a business plan allows the founder to develop the appropriate launch vehicle more quickly than if he or she had to develop both vehicles to make this decision. Similarly, a firm founder might evaluate the feasibility of purchasing different inputs for the development of the new venture. If the plan reveals that certain inputs would be too costly given the sales projections of the venture, the firm founder can shift to obtaining different inputs without the time-consuming detour of purchasing the wrong inputs.

Second, developing a business plan helps a firm founder manage the supply and demand for resources in product development and venture organizing activity, thereby minimizing bottlenecks that slow these processes. As MacMillan and Narasimha (1987) explain, business planning helps a firm founder determine when to focus effort and attention in different areas (product development, marketing, purchasing, etc.). By helping the founder determine when to focus effort and attention, business planning helps determine the best ordering of different organizing activities (e.g., marketing and promotion, obtaining inputs, and searching for capital), thereby minimizing the likelihood that the venture will be delayed by undertaking activities in an ineffective sequence. Moreover, Bird (1992) explains that the act of business planning makes more concrete people's expectations for the timing of venture development activities, thereby facilitating understanding of the appropriate sequence. For example, the identification of a critical development path in a business plan allows a firm founder to identify the milestones that should be achieved before resources are committed to other activities, thereby reducing bottlenecks.

Third, business planning allows a firm founder to create a blueprint for the venture development processes that turn broad goals into concrete action steps (Castrogiovanni, 1996). The creation of 'blueprints' for these processes speeds venture development because it creates timetables for how long the founders expect that it will take to complete tasks, such as obtaining inputs or building a prototype (Bird and Jelinek, 1988). Because a firm founder's preferences influence, at least in part, the pace at which these activities take place,

a founder can alter the pace of venture development by setting certain time horizons for particular action steps in his or her plans.

In addition, business planning communicates specific goals to others performing the tasks, thereby enhancing the rate of transfer of the founder's overall vision to others responsible for acting on that vision. In particular, the establishment of particular timeframes for milestones (e.g., approach investors) aligns expectations and makes those milestones into symbolic events that focus the attention of stakeholders, further enhancing venture development (Bird, 1992).

Furthermore, by specifying operational steps to achieve a broader goal, business planning keeps founders from diverting their attention to other activities that sidetrack their efforts. Because firm founders have many responsibilities, their ability to achieve venture development goals requires a focus on key activities. By establishing a plan with specific operational steps outlined ahead of time, the founder is better able to focus attention on those actions that will help achieve venture development goals, and is thus more likely to complete those activities in a timely manner.

Finally, business planning facilitates the rapid correction of deviation from objectives by providing the founder with a framework in which to put feedback about the venture's progress (Smith *et al*., 1990). For example, dividing the goal of developing a 'high-quality product' into concrete milestones, like completing design, developing a prototype, and testing the prototype, identifies actionable steps that firm personnel can follow and that can be tracked. This identification of action steps allows the founder to learn whether completing design, developing a prototype, or testing the prototype was the source of deviations from the goal and helps him or her make timely corrections. These arguments lead to the following three hypotheses:

Hypothesis 1: Business planning reduces the hazard of new venture disbanding.

Hypothesis 2: Business planning facilitates product development in new ventures.

Hypothesis 3: Business planning facilitates venture-organizing activity in new ventures.

METHODOLOGY

Design and sample

Examination of the relationship between planning and venture disbanding, product development, and venture organizing activity requires longitudinal data from the earliest days of a new venture's existence forward in time because neither planning nor venture development takes place instantaneously at firm founding (Katz and Gartner, 1988). Standard cross-sectional evaluations of the effects of business planning on venture development from retrospective survey data are problematic (Shrader, Taylor, and Dalton, 1984). Not only does this approach introduce hindsight and recall biases that undermine the validity of the evidence, it precludes examination of the effects of the ordering of activities, which are important for accurate estimation of the effects of planning on venture disbanding, product development, and venture organizing activity (Castrogiovanni, 1996; Smith *et al*., 1990).

To overcome these problems, we track longitudinally a random sample of 223 new ventures established in Sweden in 1998 from the exploitation of the venture opportunity forward in time. Because no defined sampling frame of new ventures exists, during the first 9 months of 1998 we initially contacted 35,971 individuals randomly selected from the general population between the ages of 16 and 70 living in Sweden who could be contacted by telephone. This sampling effort yielded 30,427 individuals (84.6%) who were willing to participate in the study.

We asked each respondent a series of questions to identify those individuals who had initiated a new venture in the first 9 months of 1998. To be considered a founder of a new venture during this time period, the respondent had to answer that: (1) they were in the process of starting a new business either alone or jointly with others, (2) the first activity that they took to start the new venture occurred during the first 9 months of 1998,[4]

[4] Because our research design assumes that firm founders can begin their ventures by initiating a variety of different activities, we cannot ask the respondents when they first began particular activities. Instead, we asked the respondents when they first began work on the venture. We distinguish when the respondents began work on the venture from when they began thinking about the venture by also asking them when they first began thinking about the venture opportunity. In all cases the respondents indicated that they began work on the venture at the same time or after they began thinking about it, lending confidence to this approach.

(3) the new venture was not part of an effort by an existing organization,[5] and (4) the respondent was a member of the founding team as opposed to a consultant or passive investor.[6] The 35,971 individuals screened yielded 223 people who had initiated a new venture in the first 9 months of 1998.

We treated the 223 ventures that these individuals initiated as the sample for our study. We asked the 223 founders to participate in a structured, telephone survey about their ventures. Although researchers studying large, established organizations often seek information from several respondents about their organizations, we used a single respondent approach in this study because a multiple respondent approach is not necessary, and frequently not possible, in the case of a new venture. A single respondent in a large organization may lack information about many parts of the organization because of the division of labor, or may disagree with other respondents about the appropriate answers to questions. However, neither of these conditions is present in the new ventures we examine. In 40 percent of the ventures we study, the entire staff consists of a single founder. In these cases, the views of the founders are the same as the average views of the venture's staff. Moreover, the scale of new ventures is so small at the point in time that we study them that the respondents possess detailed information about the activities of all aspects of the ventures.

Because we sought to gather panel data about the ventures over time, we resurveyed the respondents after 6, 12, 18, and 24 months or until the venture had been disbanded.[7] We obtained high response rates for the successive waves: 90.5 percent at 6 months, 91.9 percent at 12 months, 98.5 percent at 18 months, and 96.1 percent at 24 months. In fact, only 12 of the ventures that ceased to participate at one of the waves of data collection never returned to participation. We examined the differences for responses on all of the variables in our study between the 12 ventures that dropped out of participation and the 211 ventures that continued to participate. We find that the only statistically significant difference between the two groups was on the expectation of competition (the ventures that ceased to participate in the study expected less competition).

Over the 30 months that we observe the new ventures, 82 of the ventures 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 (See Aldrich, 1999, for a discussion of new venture failure rates).

Event history models

Because approximately one-third of the ventures in our sample disband during the observation period, we first examine the hazard of venture disbanding. To predict the hazard of venture disbanding, we analyze our data using piece-wise exponential event history models with robust clustering on each venture. We use the piece-wise exponential specification because it allows the hazard rate to vary with venture age (assuming that they are constant within each piece) without demanding parametric assumptions. We selected age pieces that matched the waves of the survey: less than 7 months old, 7–12 months old, 12–18 months old, and 19–24 months old.[8] Because we asked respondents to indicate the month in which the venture was disbanded (if it was disbanded), the event history models have monthly spells.

Selection correction

To predict product development and venture organizing activity, we need to correct our sample for those ventures that were disbanded because the disbanding of a venture precludes business planning from enhancing venture organizing activity and product development. We use Lee's (1983)

[5] Respondents had the option of indicating that their new venture was undertaken on behalf of their employer or other existing organization. Those individuals who indicated that their start-up effort was not independent were excluded from the sample.

[6] Because we randomly sample the Swedish workforce, we do not collect information from all founders of a given venture for those ventures with multiple founders. However, we do not face any bias from contacting only some of the founders because the random selection of the founder with whom we speak avoids systematic biases that occur from speaking to particular types of founders (e.g., the technical founder, the CEO, etc.).

[7] We analyzed the duration between the month of survey and the month of venture initiation to determine if the interval between the two influenced our outcome measures. We found that the timing of the survey did not have a large or a statistically significant effect on the outcome measures.

[8] To confirm the accuracy of our choice of distribution, we also analyzed our regression model with other distributions. The results were qualitatively the same across all distributions tested, indicating the robustness of our choice of distribution.

generalization of the Heckman selection model to create a selection variable to control for venture disbanding in the fixed effects regression models used to predict product development and venture organizing activity. The inclusion of this control allows us to obtain more precise estimates for our independent variables than would be the case if we did not correct for venture disbanding because failure to correct for selection effects leads to omitted variable bias (Greene, 2000). Specifically, we use the probabilities of disbanding from the piecewise exponential model to predict venture disbanding for our 223 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 project i at time t, ϕ is the standard normal density function, and Φ^{-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 product development or venture organizing activity. We include the number of prior start-ups of the venture team as an additional exogenous covariate. This variable should predict venture disbanding (Bates, 1990; Schoonhoven, Eisenhardt, and Lyman, 1990) because decisions to disband ventures are influenced by the founders' tacit knowledge of the firm creation process. λ_{it} is then included as a variable in the fixed effects regression models to predict product development and firm organizing activity.

Venture fixed effects

Research on new venture development generally infers effects from static cross-sectional analyses that confound differences between venture opportunities and the actions taken by the founders (Shane, 2000). This confounding introduces bias into efforts to examine the effect of business planning on the development of new ventures. Specifically, the effects of planning proxy for unobserved characteristics about the opportunity when the characteristics of an opportunity are correlated with business planning, as would be the case if firm founders' with larger-scale business opportunities, were more likely to write business plans (Heckman, 1981). As a result, prior empirical evidence for the effects of business planning tends to be biased because firm size, firm growth, and the quality of business opportunities are all correlated with business planning (Goldenberg and Kline, 1999; Orser, Hogarth-Scott, and Riding, 2000; Shrader *et al.*, 1989).

This problem is mitigated by the employment of panel data techniques that control for venture fixed effects. By comparing business planning and new venture development at various points in time, while controlling for unobserved characteristics about the venture, fixed effects regression partials out the effect of venture-level factors, such as the quality of the venture opportunity, and allows for an unbiased estimate of the relationship between business planning and the outcome under investigation (Griliches, 1986). Therefore, we incorporate fixed effects regression in our analysis.

We adopt a fixed effects regression model of the following form:

$$y_{it} = X_{it}\beta + \upsilon_i + \upsilon_t + \varepsilon_{it}$$

where

y_{it} = the level of product development from 1 to 5 (the level of venture organizing activity from 1 to 8) for venture i at time t;
X_{it} = the effect of the measured covariates for venture i at time t;
υ_i = the fixed effect of venture i's opportunity;
υ_t = the effect of the time period on all ventures;
ε_{it} = unobserved variance that affects venture i at time t.

Advantages of the design

Our approach to generating the sample provides three major advantages over other efforts to examine new ventures. First, we avoid the sample selection bias inherent in examining new ventures from lists of new firms provided in industry directories or government records, which fail to record new ventures that fail very early in their existence (Aldrich and Wiedenmayer, 1993; Aldrich *et al.*, 1989; Carroll and Hannan, 2000; Katz and Gartner, 1988). By drawing upon a random sample of the adult Swedish population, we can construct a sample of new ventures that accurately represents the population of new ventures initiated in Sweden in the first 9 months of 1998. This allows us

to generalize more accurately to the overall population of firms than is the case with convenience samples of new ventures.

Second, we observe all new ventures at repeated intervals from the time that they were initiated. This approach allows for the examination of the evolution of planning and venture development during earliest days of the ventures' lives and documents the actual timing of these activities. By tracking new ventures longitudinally over time, our tests of the effects of planning on venture development are more conservative than cross-sectional tests that necessarily overstate the effect of business planning.

Third, our design enables us to obtain information from respondents about both independent and dependent variables without problems of common method or single source bias that affect cross-sectional designs of similar questions. This is important because new ventures often involve only founders at the very early stages. Because no informants other than the founders are available to provide information about the venture, researchers must obtain information from respondents about both the independent and dependent variables. We mitigate the effects of common method and single source bias because longitudinal designs greatly reduce these problems (Lindell and Whitney, 2001). In addition, we use fixed effects regression to control for venture effects. Because the same ventures are measured repeatedly over time, the tendency of the respondents to answer questions about the independent and dependent variables in a systematic way is captured by the venture effect variable (Greene, 2000). Therefore, common method and individual level biases, if present, will not influence the coefficients on the hypothesized variables, but will overstate the effect of the venture fixed effect.

Dependent variables

Because we examine new ventures from the point of their initiation forward over their first 30 months of life, we focus on the period before the firm founder pursues financial performance goals, but instead seeks to achieve such milestones as the development of a product or service, or the organization of the company (Block and MacMillan, 1992). For this reason, our dependent variables are venture disbanding, the level of product development, and the level of venture organizing activity, rather than measures of financial performance.

We predict the dependent variables at each point in time as a function of a variety of covariates described below. The dependent variables are lagged by 1 month to ensure that the predictor variables occurred before the dependent variables.

Venture disbanding

We define venture disbanding as the cessation of the venture by all members of the team pursuing it. We require the entire venture team to cease pursuit of the opportunity to define a venture as disbanded because the composition of venture teams often changes over time and the cessation of effort by the respondent does not necessarily indicate the disbanding of the venture.

We identify disbanding by asking respondents at each wave of the survey whether all parties pursuing the venture have ceased their effort to pursue it and, if so, in what month that effort ended. By identifying the specific month of cessation, we can create event history models that measure monthly spells for the new ventures. In the month that all members of the venture team ceased pursuit of the venture, we code the venture with a '1.' Otherwise, we code this variable as '0.' Those ventures not disbanded by the end of our 30-month observation were treated as censored.

Product development

We measured product development as follows: every 6 months we asked respondents, 'At what stage of development is the product or service this start-up will be selling?' The scale of responses was '1' equals 'No work has been done to develop a product or service;' '2' equals 'Work to develop the product or service is still in the idea stage;' '3' equals 'A model or procedure is being developed;' '4' equals 'A prototype or procedure has been tested with customers;' and '5' equals 'The product or service is completed and ready for sales or delivery.' By measuring the stage of product development repeatedly over time, we capture both improvements and decreases in product development.

Venture organizing activity

Venture organizing consists of those activities that establish the physical structure and organizational processes of a new firm (Bhave, 1994). We measure venture organizing activity by generating the total score to eight dichotomous questions that prior research has shown are steps founders take to organize new ventures (Carter *et al*., 1996; Reynolds and White, 1997). We administer the questions in dichotomous form to be consistent with prior research on new venture organizing activities (see Carter *et al*., 1996; Reynolds and White, 1997). We note that prior research has shown that these dimensions can be combined into an overarching measure (Carter *et al*., 1996; Gatewood, Shaver, and Gartner, 1995).

Every 6 months, beginning with the initial survey, we asked respondents the following questions, coded as '1' if the respondent answered 'yes' and '0' if the respondent answered 'no': (1) 'Has the venture filed the necessary forms with the tax authorities?' (2) 'Has the venture registered with government authorities?[9] (3) 'Has discussion about the product or service the start-up will sell been initiated with potential customers?' (4) 'Have any raw materials, inventory, supplies, or components for the start-up been purchased?' and 'Have any major items like equipment, facilities, or property been purchased, leased, or rented for the new start-up (major was defined as an item with a retail value of greater than U.S. $1000)?' (5) 'Has the venture sought to obtain a patent, copyright or trademark?' (6) 'Has the venture sought to obtain necessary permits or licenses to operate?' (7) 'Has the venture sought to obtain financing?' (8) 'Has the venture initiated marketing or promotion efforts?' To mitigate the possibility that the respondents would overstate that they had completed these activities when, in fact, they had not, the interviewers requested information that confirmed the respondents' statements. We obtained no information that disconfirmed the respondents' statements.

Predictor variables: Business planning

We use two operationalizations of a business planning measure in our study. First, we include a dichotomous variable: 'Has a business plan been completed?' We use the dichotomous variable because the different components of our composite measure may not be of equal importance, suggesting that a single dichotomous measure may be superior to a hierarchical measure.

However, a non-dichotomous hierarchical measure also has methodological advantages. Therefore, in alternative regressions, we also use a composite measure of business planning based on four questions about different activities that prior research has indicated are important components of business planning, and that prior research has shown can be combined to create a composite measure (Gatewood *et al*., 1995).[10] We administer the questions in dichotomous form to be consistent with prior research on new venture organizing activities (see Carter *et al*., 1996; Reynolds and White, 1997).

To create the non-dichotomous measure, every 6 months, beginning with the initial survey, we asked respondents the following questions, coded as '1' if the respondent answered 'yes' and '0' if the respondent answered 'no': (1) 'Have financial projections been developed?' (2) 'Has the venture gathered information about the market and competition?' (3) 'Has a business plan been completed?' (4) 'Has a formal, written business plan document been prepared?' In scoring the business planning measure, we created a scale that added these scores together. If the information on the market and competition had been gathered by the time of the wave, the venture received a score of one. The venture also received a score of one if the financial projections had been completed by the time of the wave. If these two sections had been combined into a completed business plan the venture received an additional score of one. Finally, the venture received another score of one if the business plan had been completed in a written form suitable for presentation to others. Because the score on this variable can increase over time, it captures the idea of ongoing maintenance and updating of plans.

We used the response to the question 'Has a business plan been completed?' rather than the

[9] In Sweden, like many European countries, firm founders are required by law to register their ventures with government authorities when the venture is initiated.

[10] We do not examine many dimensions of strategic planning because prior research has indicated that these activities are not important to firm organizing or product development in new ventures (Castrogiovanni, 1996). We also do not examine many dimensions of operational planning, such as specific plans for acquiring facilities, layout of space, or the design of manufacturing plants, because these are industry and opportunity specific.

response to the question 'Has a formal, written business plan document been prepared?' as our dichotomous measure of business planning for three reasons. First, business plans can be complete even if they are not presented in the formal, written form suitable for presentation to others. In fact, many respondents to our survey considered their business plans complete even though they did not yet take the form expected by investors or government agencies. Second, our survey protocol used nested questions. To make the administration of the survey efficient, the instrument asked certain questions only if the respondent had answered 'yes' to other questions. As a result, the question 'Has a formal, written business plan document been prepared?' was only asked if the respondent had indicated, 'A business plan has been completed.' Given the nested structure of the survey protocol, the completed plan question is a more appropriate choice of a single-item measure of business planning than the formal plan question. Third, our discussions with entrepreneurs indicated that a formal, written document was much more likely to be prepared if the respondent was seeking outside capital because investors had specific requirements about the form of a business plan that was not necessarily the same as that used by respondents to manage their own operations. As a result, we believe that the question 'Has a business plan been completed?' is a better single item to measure the concept business planning than 'Has a formal, written business plan document been prepared?'

Definitions of 'financial projections,' 'gathered information on the market and competition,' 'completed business plan,' and 'written, formal business plan document' were provided to ensure that the respondents understood these concepts. For instance, to ensure that respondents understood the meaning of the term 'business plan' and did not confuse it with other terms, such as 'operational plan,' the interviewers provided a clear definition of a business plan when surveying the respondents. To ensure that the respondents understood the term 'financial projections,' the interviewers explained that financial projections included projected balance sheets, cash flows, income statements, and break-even analyses. Moreover, to mitigate the possibility that the respondents would overstate that they had completed these activities when, in fact, they had not, the interviewers requested information that confirmed the respondents' statements. We found no cases in which the additional information disconfirmed the statements made by the respondents.

Control variables

Start-up experience

We control for the start-up experience of the founders of the ventures with a count of the number of firms previously established by the venture team.

Number of employees

We include a measure of the number of employees at each wave of the interviews. We count part-time employees as one half of each full time employee.

Received external capital

We include a dummy variable to indicate whether or not the venture had received external capital at the time of each wave of interviews.

Competitive advantage

We measure the founder's perception of a competitive advantage with a dichotomous variable asked of the founder at each wave: 'Does your new venture have a competitive advantage?'

Level of competition

We measure the founders' perception of competition with a four-point scale administered at each wave. The scale is: '0' equals 'expect no competition,' '1' equals 'expect low competition,' '2' equals 'expect moderate competition,' and '3' equals 'expect strong competition.'

Attractive products/services

We measure the founders' perception that it is important for the new venture to have more attractive products and services than its competition by employing a four-point scale administered at each wave. The scale is: '1' equals 'insignificant,' '2' equals 'marginal,' '3' equals 'important,' and '4' equals 'critical.'

Manufacturing

We control for manufacturing businesses with a dummy variable one for manufacturing firms (service firms was the omitted case). This dummy variable is generated from information collected at the time of the first survey.

Average firm age in industry

We control for the average age of firms in the industry using data collected from Statistics Sweden[11] that measure the average age of all registered firms in the new venture's five-digit Standard Industrial Code in that year.

Average firm size in industry

We control for the average size of firms in the venture's industry with data from Statistics Sweden that measure the average number of employees in all registered firms in the venture's five-digit Standard Industrial Code in that year.

Exit rate in the industry

We control for the exit rate of venture's industry with data from Statistics Sweden that measure the percentage of registered firms in the new venture's five-digit Standard Industrial Code that exited in that year.

Industry level of sales

We control for the level of sales in the industry with data from Statistics Sweden that measure the total value of revenues of all registered firms in the new venture's five-digit Standard Industrial Code in that year. The industry level of sales is reported in Swedish crowns.

Start-up rate in the region

We control for the new firm formation rate in the region with data from Statistics Sweden that measure the total number of new firms per workforce-aged inhabitant launched in the region in that year.

Time effects

Because we expect a natural trend towards planning, disbanding, venture organizing activity, and product development over the lives of new ventures, these variables could be correlated simply as an artifact of the passage of time. To mitigate this problem, we control for the effect of time with a series of age pieces in the event history models and a series of dummy variables for each of the waves of data collection in the fixed effects models. By including these variables, we partial out the portion of the variance that is explained solely by the passage of time.

RESULTS

Table 1 presents the descriptive statistics for the entire panel and by wave. This table provides support for the use of fixed effects regression to control for variation across ventures in opportunities. First, the table indicates that sufficient progress is made in product development and venturing organizing over their first 30 months to justify panel data analysis. The mean on the product development variable rises from 3.13 at the time of the first wave of data collection to 4.67 at the time of the fifth wave, 2 years later. The mean on the venture organizing variable rises from 1.55 at the time of the first wave to 5.06 at the time of the fifth wave. Second, the low level of differences across the five waves on the variables measuring the venture opportunity/strategy suggests that controlling for unobserved heterogeneity through fixed effects is appropriate and will minimize bias in the regression analysis.[12]

Table 2 provides a correlation matrix. This table provides several interesting insights into the data. First, the significant positive correlation between planning and receiving external capital suggests the importance of controlling for the receipt of external capital to partial out the portion of planning that may operate indirectly through efforts to persuade external stakeholders to support the venture. Second, the absence of high levels of

[11] All firms in Sweden that conduct legal economic activity are listed in Statistics Sweden's business register. This database is updated every 2 weeks with information from the Swedish tax authorities. The business register data can be divided by five-digit standard industrial codes, which we use to create the industry variables. We update these annually, using data for 1998, 1999, and 2000.

[12] We also asked the respondents at each wave if the venture opportunity that they were pursuing had changed since the time of the last interview. We found that the opportunity changed for only 15 of the 223 ventures between *any* of the waves. This information provides additional support for the assumption that we could control for the nature of the opportunity through the use of fixed effects regression.

Table 1. Descriptive statistics

	Overall sample		Wave 1		Wave 2		Wave 3		Wave 4		Wave 5	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Product development	4.43	1.01	3.13	1.19	4.46	0.94	4.63	0.87	4.67	0.83	4.67	0.87
Venture organizing activity	3.72	2.16	1.55	1.39	3.51	1.73	4.61	1.76	4.89	1.77	5.06	1.79
Business planning	1.91	1.31	0.80	0.90	1.72	1.10	2.41	1.18	2.58	1.19	2.63	1.19
Completed plan	0.40	0.49	0.06	0.23	0.25	0.43	0.59	0.49	0.64	0.48	0.66	0.48
Number of employees	1.11	12.69	0.17	0.87	0.51	2.17	0.73	3.32	3.20	28.86	1.62	9.43
Obtained external capital	0.18	0.38	0.00	0.07	0.10	0.29	0.25	0.44	0.30	0.46	0.34	0.48
Attractive products important	2.49	0.95	2.56	0.93	2.46	0.90	2.48	0.98	2.45	0.98	2.45	1.00
Expect competition	2.04	0.93	1.98	0.97	1.99	0.96	2.06	0.96	2.10	0.85	2.12	0.88
Competitive advantage	0.60	0.49	0.59	0.49	0.61	0.49	0.59	0.49	0.63	0.48	0.61	0.49
Average firm age in ind.	6.55	2.60	6.46	2.52	6.45	2.50	6.64	2.68	6.54	2.66	6.75	2.70
Average firm size in ind.	2.97	5.45	3.05	6.73	2.83	5.28	2.97	5.05	3.00	5.22	3.03	4.04
Industry sales ('000)	159.60	212.76	147.77	197.54	153.58	202.88	162.04	220.30	163.47	224.39	179.19	228.31
Exit rate in industry	1.80	8.60	3.05	12.24	3.06	12.29	0.56	0.93	0.60	0.98	0.79	1.67
Manufacturing firm	0.14	0.34	0.14	0.35	0.14	0.34	0.13	0.34	0.14	0.35	0.12	0.33
Firm formation rate in region	0.67	0.21	0.65	0.18	0.65	0.18	0.67	0.22	0.67	0.22	0.73	0.25
Team start-up experience	2.53	11.59	2.14	10.36	2.31	10.95	2.69	12.09	2.85	12.51	2.85	12.51

Table 2. Correlation matrix for the panel data analysis

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Product dev.	1.00																		
2. Organizing activity	0.33*	1.00																	
3. Business planning	0.32*	0.61*	1.00																
4. Attractive products	−0.09*	0.04	0.07*	1.00															
5. Competition	0.05	0.05	0.10*	0.13*	1.00														
6. Competitive adv.	0.02	0.14*	0.13*	0.03	−0.05	1.00													
7. Team start-up exp.	−0.02	−0.03	0.06	0.01	0.05	0.05	1.00												
8. Employees	−0.02	0.12*	0.04	0.08*	0.03	0.06	0.00	1.00											
9. Received capital	0.13*	0.47*	0.32*	−0.06	−0.06	0.01	−0.01	0.13*	1.00										
10. Manufacturing	−0.04	0.00	0.02	−0.04	−0.02	0.07*	−0.01	0.08*	0.03	1.00									
11. Industry sales	0.04	0.10*	0.01	0.03	0.07	0.03	−0.04	0.06	0.04	−0.03	1.00								
12. Industry exit rate	−0.08*	−0.11*	−0.07*	0.04	−0.05	−0.06	0.00	−0.01	−0.03	−0.03	−0.13*	1.00							
13. Average firm age	−0.04	0.08*	−0.03	−0.08*	−0.05	0.01	−0.04	−0.02	0.00	0.02	−0.01	−0.36*	1.00						
14. Average firm size	0.00	0.05	0.03	−0.02	0.01	0.10*	−0.01	−0.01	−0.04	−0.04	0.02	−0.07	0.26*	1.00					
15. Regional start-ups	0.14*	0.05	0.01	−0.04	0.18*	−0.02	−0.07*	−0.05	−0.04	0.01	0.11*	−0.05	−0.01	0.03	1.00				
16. 7 months	0.02	−0.05	−0.08*	−0.01	−0.03	0.01	−0.01	−0.03	−0.12*	0.00	−0.02	−0.08*	−0.02	−0.01	−0.05	1.00			
17. 13 months	0.09*	0.20*	0.18*	−0.00	0.01	−0.01	0.01	−0.01	0.09*	−0.01	0.01	−0.07*	−0.02	−0.00	−0.00	−0.26*	1.00		
18. 19 months	0.11*	0.25*	0.23*	−0.02	0.03	0.02	0.01	0.07*	0.15*	0.01	0.01	−0.06	0.00	0.00	0.00	−0.25*	−0.22*	1.00	
19. 25 months	0.11*	0.28*	0.24*	−0.02	0.04	0.00	−0.02	0.02	0.19*	0.02	0.04	−0.05	0.03	0.00	0.12*	−0.24*	−0.21*	−0.20*	1.00

* $p < 0.05$

correlation between independent variables suggests that problems of multicollinearity are likely not manifest in this analysis. Third, the low level of correlation between team start-up experience and product development and venture organizing activity indicates that this variable meets the exogeneity requirements for use in creating the selection correction lambda.

Table 3 presents the results for the piece-wise exponential models to predict the hazard of venture disbanding. Model 1 provides the base model without the business planning variable included. Model 2 adds the continuous measure of business planning. Overall this model is significant ($\chi^2 = 47.29$, $p < 0.0001$). Among the control variables, team start-up experience has a significant negative effect (coefficient $= -0.25$, $p < 0.01$), which translates to a 22 percent reduction in the hazard of venture disbanding. In addition, the 7- to 12-month age piece has a significant positive effect (coefficient $= 1.44$, $p < 0.001$), which translates to a hazard rate for the 7- to 12-month age piece that is four times as high as the hazard for the 25- to 30-month age piece. Model 2 also provides support for Hypothesis 1. Business planning has a significant negative effect (coefficient $= -0.21$, $p < 0.05$), which translates to a 19 percent reduction in the hazard of disbanding.

These results are confirmed by Model 3, which substitutes the dichotomous measure of business planning for the continuous measure. Overall this model is significant ($\chi^2 = 58.71$, $p < 0.0001$). Team start-up experience again has a negative effect (coefficient $= -0.25$, $p < 0.01$), which translates to a 22 percent reduction in the hazard of disbanding. The 7- to 12-month age piece has a positive effect (coefficient $= 1.33$, $p < 0.01$), which translates to a hazard of disbanding in the 7- to 12-month age piece that is almost four times as high as it is in the 25- to 30-month age piece. More importantly, having completed a business plan has a negative effect (coefficient $= -0.91$, $p < 0.01$), which translates to a 60 percent reduction in the hazard of disbanding.

Table 4 provides the fixed effects regression to predict product development and venture organizing activity. Models 1–3 test Hypothesis 2. Models 4–6 test Hypothesis 3. The results show the importance of controlling for venture-level fixed effects in examining the effect of planning on product development. Venture effects explain 72 percent of the variance in product development ($\rho = 0.72$ in Model 2) and 74 percent of the variance in venture organizing activity ($\rho = 0.74$ in Model

Table 3. Piece-wise exponential models to predict the hazard of venture disbanding

Variable	Model 1 Coeff. (S.E.)	Model 2 Coeff. (S.E.)	Model 3 Coeff. (S.E.)
Less than 7 months	0.88 (0.51)^{t}	0.63 (0.52)	0.51 (0.50)
7–12 months	1.57 (0.48)***	1.44 (0.49)**	1.33 (0.48)**
13–16 months	0.62 (0.55)	0.59 (0.55)	0.58 (0.55)
17–24 months	−0.09 (0.63)	−0.09 (0.63)	−0.09 (0.63)
Business planning	#	−0.21 (0.10)*	#
Completed business plan	#	#	−0.91 (0.31)**
Start-up experience	−0.27 (0.10)**	−0.25 (0.10)*	−0.25 (0.10)**
Competitive advantage	−0.17 (0.22)	−0.11 (0.23)	−0.13 (0.22)
Level of competition	−0.05 (0.13)	−0.02 (0.13)	−0.01 (0.13)
Attractive product	0.03 (0.12)	0.04 (0.12)	0.04 (0.12)
Number of employees	−0.99 (0.63)	−0.93 (0.60)	−0.90 (0.57)
Obtained external capital	−0.55 (0.43)	−0.47 (0.43)	−0.37 (0.44)
Industry exit rate	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Average firm age	0.02 (0.04)	0.01 (0.04)	0.01 (0.04)
Average firm size	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)
Industry sales	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Manufacturing business	−0.12 (0.34)	−0.10 (0.34)	−0.09 (0.34)
Start-up rate in region	−0.02 (0.61)	−0.09 (0.61)	0.13 (0.62)
Log-likelihood	−214.45	−212.54	209.63
χ^2	47.29****	54.35****	58.71****

**** $p < 0.0001$; *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; ^{t} $p < 0.10$ in two-tailed tests. The analysis file contains 5093 firm–month observations, 223 cases and 82 failures. # Variable not in the regression.

Table 4. Fixed effects regression to predict new venture development

	Model 1 Product Dev. Coeff. (S.E.)	Model 2 Product Dev. Coeff. (S.E.)	Model 3 Product Dev, Coeff. (S.E.)	Model 4 Venture Org. Coeff. (S.E.)	Model 5 Venture Org. Coeff. (S.E.)	Model 6 Venture Org. Coeff. (S.E.)
Business planning	#	0.13 (0.04)****	#	#	0.47 (0.05)****	#
Completed business plan	#	#	0.17 (0.08)*	#	#	0.53 (0.12)****
Competitive advantage	−0.01 (0.08)	0.01 (0.08)	−0.01 (0.08)	−0.06 (0.12)	−0.01 (0.11)	−0.04 (0.12)
Level of competition	0.02 (0.04)	0.04 (0.04)	0.03 (0.04)	−0.09 (0.07)	−0.04 (0.06)	−0.05 (0.06)
Attractive product	−0.05 (0.04)	−0.05 (0.04)	−0.05 (0.04)	0.03 (0.06)	0.03 (0.06)	0.03 (0.06)
Number of employees	−0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)	0.01 (0.02)	0.01 (0.01)	0.01 (0.01)
Obtained external capital	−0.25 (0.09)**	−0.28 (0.09)**	−0.27 (0.09)**	1.32 (0.14)****	1.22 (0.13)****	1.25 (0.14)****
Industry exit rate	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)
Average firm age	−0.03 (0.04)	−0.03 (0.04)	−0.03 (0.04)	−0.14 (0.06)*	−0.14 (0.06)*	−0.15 (0.06)*
Average firm size	−0.02 (0.02)	−0.02 (0.02)	−0.02 (0.02)	−0.02 (0.03)	−0.01 (0.03)	−0.01 (0.03)
Industry sales	−0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)
Manufacturing business	−0.19 (0.07)**	−0.20 (0.07)**	−0.20 (0.07)**	−0.02 (0.10)	−0.03 (0.10)	−0.03 (0.11)
Start-up rate in region	−0.50 (0.64)	−0.37 (0.63)	−0.45 (0.64)	−1.75 (0.93)t	−1.28 (0.88)	−1.58 (0.92)t
Month 7	0.52 (0.06)****	0.38 (0.08)****	0.48 (0.07)****	2.01 (0.09)****	1.51 (0.11)****	1.89 (0.10)****
Month 13	0.67 (0.08)****	0.50 (0.09)****	0.61 (0.09)****	2.50 (0.11)****	1.87 (0.13)****	2.28 (0.12)****
Month 19	0.61 (0.10)****	0.46 (0.11)****	0.56 (0.10)****	2.41 (0.15)****	1.87 (0.15)****	2.23 (0.15)****
Month 25	0.67 (0.12)***	0.51 (0.12)***	0.61 (0.12)****	2.69 (0.17)****	2.09 (0.17)****	2.49 (0.17)****
Selection lambda	0.20 (0.11)t	0.08 (0.11)	0.15 (0.11)	0.70 (0.16)****	0.29 (0.16)t	0.55 (0.16)***
Constant	4.64 (0.58)****	4.46 (0.58)****	4.61 (0.58)****	3.52 (0.85)****	2.85 (0.80)****	3.43 (0.84)****
Sigma_*u*	0.96	0.94	0.95	1.48	1.37	1.42
Sigma_*e*	0.60	0.59	0.59	0.87	0.82	0.86
Rho	0.72	0.72	0.72	0.74	0.74	0.73
R^2 within	0.21	0.22	0.21	0.73	0.77	0.74
R^2 between	0.03	0.05	0.04	0.28	0.36	0.32
R^2 overall	0.04	0.07	0.06	0.40	0.48	0.44
Change in overall R^2	#	0.03	#	#	0.08	#
F-value	10.31****	10.61****	9.95****	110.69****	122.58****	108.17****
F-test that all $u\_i = 0$	7.09****	6.95****	6.71****	8.26****	8.49****	7.61****
N	881	881	881	881	881	881

t $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; **** $p < 0.0001$ in two-tailed tests. # Variable not in the regression.

5). Moreover, the assumption that all unobserved firm-level characteristics were equal was strongly rejected (in Model 2, $F = 6.95$, $p < 0.0001$, and in Model 5, $F = 8.49$, $p < 0.0001$). Because most of the variance in product development and venture organizing activity is explained by differences between ventures rather than by differences in the planning activities undertaken by the ventures

over time, failure to control for venture-level fixed effects would result in biased estimation of the effects of planning on product development and venture organizing activity. This observation is particularly important because none of the prior literature on business planning in new ventures controls for venture-level variation in opportunities.

The results also show the importance of longitudinal examination of the effects of planning on venture development. The effect of the time dummy variables is extremely strong ($B = 0.38$ to 0.51 in Model 2 and 2.01 to 2.69 in Model 5 and significant at the $p < 0.001$ or better in all cases). These results indicate that examination of the effect of business planning on product development and venture organizing activity without controlling for the passage of time will generate upward biased estimates of the effect of business planning.

The results also show some interesting patterns for the control variables. Consistent with previous research, product development progresses more slowly for manufacturing businesses than for service businesses ($B = -0.19$ to -0.20, $p < 0.01$ in Models 1–3). Similarly, venture organizing activity progresses more slowly in industries in which firms are older on average ($B = -0.14$ to -0.15, $p < 0.05$ in Models 4–6). In contrast, obtaining external capital appears to have opposite effects on product development and venture organizing activity. The receipt of external capital has a significant negative effect on product development ($B = -0.25$ to -0.28, $p < 0.01$ in Models 1–3) and a significant positive effect on venture organizing activity ($B = 1.22$ to 1.32, $p < 0.0001$ in Models 4–6). Finally, several of the control variables have no significant effect on product development or venture organizing activity, including: whether the founder perceives that he or she has a competitive advantage; the expected level of competition; the importance of having more attractive products/services than the competition; the number of employees in the venture; the average firm size in the industry; the exit rate in the industry; the level of sales in the industry.

The results also demonstrate the importance of correcting for the selection of new ventures that disbanded during their first 30 months of life. Although the selection lambda has a significant effect on product development only in Model 1 ($B = 0.20$, $p < 10$), it has a significant positive effect on venture organizing activity in all three models ($B = 0.29$ to 0.70, $p < 0.10$ to $p < 0.0001$), indicating that failure to correct for selection would yield biased estimates in the prediction of the effect of business planning on venture organizing activity.

The results provide support for Hypothesis 2. Consistent with this hypothesis, Model 2 shows that business planning increases product development ($B = 0.13$, $p < 0.0001$). Model 3 shows that operationalizing business planning with the dichotomous measure of having a completed business plan also increases product development ($B = 0.17$, $p < 0.05$). Moreover, the addition of the business planning variable improves the overall r^2 of the product development model by 0.03, an effect larger than the addition of any other single variable in our model that is under the control of firm founders.

The results provide support for Hypothesis 3. Consistent with this hypothesis, Model 5 shows that business planning increases the level of venture organizing activity ($B = 0.47$, $p < 0.0001$). Model 6 shows that operationalizing business planning with the dichotomous measure of having a completed business plan also increases venture development ($B = 0.53$, $p < 0.0001$). Moreover, the addition of the business planning variable improves the overall r^2 of the venture organizing activity model by 0.08, an effect larger than the addition of any other single variable in our model that is under the control of firm founders.

DISCUSSION

Many researchers have criticized business planning as a distraction, arguing that it interferes with the efforts of time-constrained firm founders to undertake more valuable actions to develop their fledgling enterprises (Baron, 1998; Bhide, 2000; Carter *et al.*, 1996). In contrast to this literature, we proposed that business planning would enhance founders' product development and venture organizing activities and would reduce the hazard of venture disbanding. We examined 223 new ventures initiated in Sweden in the first 9 months of 1998 by a random sample of Swedish firm founders over their first 30 months and found support for our arguments.

Theoretical implications

From a theoretical perspective, the results of this study have useful implications for research on business planning. Although many entrepreneurship researchers have criticized business planning as a distraction from more important firm organizing activity (Bhide, 2000; Carter *et al*., 1996), other researchers have argued that planning helps people to overcome limits on their cognitive capacity (Simon, 1976). Our results show that business planning is a valuable activity, even in uncertain and ambiguous situations like firm formation.

The results of this study provide a bridge between the planning literature and the entrepreneurship literature. Much of the research on planning at the organizational level has focused largely on *strategic* planning (Castrogiovanni, 1996). However, new firms engage in less strategic planning than mature organizations (Boyd, 1991), focusing instead on business planning. In recent years, entrepreneurship researchers have documented a structural shift toward a higher rate of new firm formation in developed economies (Gartner and Shane, 1995; Shane, 1996). This transformation has led to an interest in understanding the factors that enhance the development of new organizations. Prior planning research has not focused on explaining the relationship between business planning and the development of new organizations. This study provides a step in that direction by showing the value of business planning to new venture development.

Business planning may be a more effective tool during the start-up of a new business than during the maintenance of an established business and therefore may warrant greater theoretical attention in the entrepreneurship literature than in the organization theory or strategy literatures. Two reasons underlie this proposition. First, new venture development is based on self-set goals (e.g., complete product development or organize a company), rather than relative performance goals (e.g., make greater profits than other firms). When people perceive that they have the opportunity and ability to influence the outcome of their own behavior, as is the case with the formation of a new venture, self-set goals have greater motivational properties than relative performance goals (Locke and Latham, 1980). Second, planning is more effective when the time span between planning and feedback is short (Locke and Latham, 1980). Because the time period between business planning and feedback is much shorter during the new venture start-up process than in the operation of a large, mature organization, planning may be more valuable in this context.

The study also enhances our understanding of product development and venture organizing activities in new ventures. Much of the work on product development has not examined the topic in the context of new ventures. Moreover, the literature on organization theory has focused relatively little on the process of organization creation, and has focused instead on the design of mature firms (Aldrich, 1999). As a result, we have little understanding about the factors that enhance product development and organizing activity in new ventures. However, identifying these factors is important because they are a necessary condition of new venture survival and thus subsequent financial performance. In this study, we provide empirical evidence that business planning enhances new venture survival, product development and organizing activity in new ventures. As a result, the study provides guidance for future researchers interested in explaining why and how some new ventures are better than others at these processes.

Methodological implications

This study also makes useful methodological contributions to both the entrepreneurship and planning literatures. The study shows how panel data can be used to overcome the methodological problems generated by unobserved heterogeneity about the qualities of venture opportunities. Although firm founders' decisions likely influence new venture performance, unmeasured differences in the attributes of venture opportunities likely influence both founder decisions and performance measures. Previous researchers have shown evidence of the latter scenario, demonstrating that firm founders that pursue larger and more valuable opportunities are more likely to develop business plans, *and* have faster growing ventures (Castrogiovanni, 1996; Schwenk and Shrader, 1993).

This correlation causes bias in cross-sectional studies of the effect of planning on new venture

performance. Heckman (1981) showed that empirical tests that fail to control for important sources of heterogeneity that affect both the choices made by actors and their performance introduce systematic omitted variable bias that overstates the effects of actors' choices on performance. However, accurate estimates of the effects of entrepreneurial action on new venture performance can be found if researchers use panel data sets with repeated observations for each venture. By repeatedly measuring a venture over time, researchers can partial out the effect of fixed characteristics of the venture (e.g., the value of the opportunity) when examining the effect of choices on performance. As a result, researchers can measure the variance attributable to entrepreneurial decisions with greater accuracy.

The study also provides a contribution to the design of research on planning. Prior research has focused largely on the relationship between planning and financial measures (see Boyd, 1991, and Schwenk and Shrader, 1993, for reviews). While examination of the relationship between predictor variables, such as planning, and financial performance is an effective approach for the study of mature organizations, this approach is much less effective for the study of new ventures (Stuart, Huang, and Hybels, 1999). Because new ventures have often not yet reached positive cash flow or profitability, the objectives that their founders seek to achieve during their earliest months are not financial goals, but milestones such as completing product development or organizing a firm (Block and MacMillan, 1992). This study demonstrates the value of focusing on these types of outcome measures when examining the effect of planning in new ventures.

Furthermore, measurement of the relationship between planning and new venture development is enhanced by the use of longitudinal data from the earliest days of a new venture's existence forward in time. Planning generally does not take place instantaneously at firm founding, but tends to occur over time as new ventures evolve (Katz and Gartner, 1988). The dynamic nature of the planning process means that efforts to examine the effects of planning on performance with longitudinal data yield better results than efforts made with cross-sectional data (Shrader *et al*., 1989). Not only does the longitudinal approach mitigate hindsight and recall biases, it more accurately estimates the effects of planning on outcomes when the two do not take place simultaneously (Castrogiovanni, 1996; Smith *et al*., 1990).

Implications for practitioners

This study also has implications for practitioners. The results show that firm founders will enhance the likelihood of their new venture's survival and facilitate product development and venture organizing efforts if they engage in business planning. This finding is important because product development and venture organizing are important activities in which all firm founders must engage. Moreover, given that a major focus of entrepreneurship programs in business schools lies in teaching people how to undertake these activities, it is useful to know that they are beneficial to the practitioners that will use them.

However, we caution that business planning is an insufficient condition for venture success. The content of business plans and the implementation of these plans could have a more important role in influencing disbanding, venture organizing activity, and product development than the simple act of planning. Moreover, our results show that business planning is not the most important factor in influencing disbanding, product development, or venture organizing activity. Several factors outside the control of the firm founder, most notably the passage of time and the nature of the venture opportunity, appear to explain more variance in these outcomes than does business planning. Nevertheless, our results show that the simple act of undertaking business planning matters more for venture disbanding, product development, and venture organizing activity than any other single factor under the control of firm founders that we could identify.

Limitations

One of the limitations of this study is the relatively crude way in which the predictor variables were operationalized. The desire to overcome methodological problems with selection bias, static analysis, and failure to control for unobserved heterogeneity across ventures necessitated the collection of data on planning, venture disbanding, venture organizing, and product development at five intervals over a 30-month period. As a result, the measures used in this study were more coarse-grained than measures used in many cross-sectional studies

on planning. In particular, the product development construct was measured with a single item, raising questions of reliability. Nevertheless, the methodological problems overcome in this study suggest the importance of future work using similar longitudinal designs on random samples of new ventures measured from their initiation using more fine-grained measures.

Future directions

The results of our study suggest several directions for future research on business planning in new ventures. First, our study does not determine whether the value of business planning lies in the process of planning or in the quality of the actual plans themselves. Given the evidence that our study unearthed about the value of planning, future research on new ventures should examine the relative importance of planning as a process and plans as an outcome.

Second, our study did not measure the content of the information contained in the plans, the quality of implementation efforts, the percentage of information gathered, or the amount of time spent planning. However, because our results indicate that the act of planning matters to new venture development, they suggest that investigation of the effects of these four dimensions of planning would be a valuable area for future research. In particular, researchers might wish to examine the effects of the amount of time spent on business planning because that factor could have a non-monotonic relationship with disbanding, firm organizing activity, and product development in new ventures.

Third, our study examined business planning and new venture development in Sweden. We believe that the questions we examine are universal and not subject to institutional or cultural factors that would preclude our results from generalizing to other locations. Our theory for the value of business planning is based on the general characteristics of human beings and the ventures they organize and does not depend on the culture or institutional environment in which new venture creation occurs. Moreover, we know of no specific cultural or institutional characteristics unique to Sweden that affect new venture disbanding, venture organizing activity, product development, or business planning. Nevertheless, the generalizability of our results is ultimately an empirical question. Future research that validated our results in other countries would be necessary to determine if our arguments are generalizable to other settings.

Lastly, our analysis provided evidence of bivariate correlations between business planning, venture organizing activities, and product development. These bivariate correlations suggest that business planning might facilitate organizing activities, which, in turn, might facilitate product development. Such a relationship would indicate a more nuanced view of the benefits of planning to new venture development than that presented in the literature and would refute the traditional argument that planning and organizing activities are substitutes. To try to tease out the nature of the relationship between business planning, venture organizing activities, and product development, we tested whether business planning and venture organizing activities were complements in predicting product development. Unfortunately, our analysis did not provide evidence of complementarity between business planning and venture organizing activity. However, the evidence that business planning reduces the likelihood of venture disbanding, and increases venture organizing activity and product development, suggests that researchers should develop more nuanced views of the relationship between business planning and new venture development. Given the evidence presented in this study, we believe that an investigation of complementarities between business planning and other venture development activities is warranted. Clearly, much more work on the role of business planning in new venture development remains to be done.

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