

**THE INFLUENCE OF PRE-VENTURE PLANNING ON NEW VENTURE
CREATION**

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ABSTRACT

We use a sample of nascent entrepreneurs from the Panel Study of Entrepreneurial Dynamics (PSED) to explore whether engaging in business planning and the degree of planning formalization, combined with other activities, was more likely to result in the creation of new businesses. A review of longitudinal studies of nascent entrepreneur planning behaviors is provided and hypotheses are suggested about the relationship of pre-venture planning and planning formalization to success when starting new ventures. Findings from our study suggest that nascent entrepreneurs who completed a business plan were six times more likely to start a business than individuals who did not complete a business plan. In addition, nascent entrepreneurs who contacted and participated in government-sponsored entrepreneurship programs were five times more likely to start a business than entrepreneurs who did not seek government assistance.

INTRODUCTION

There are a wide variety of efforts such as the U.S. Small Business Administration's support of Small Business Development Centers, SCORE, and Women's Business Centers; public/private partnerships, like the Kauffman Foundation's FastTrack program; and university-based activities involving business plan classes and competitions) that encourage entrepreneurs to develop business plans during the process of developing their new ventures. Yet, do efforts at creating business plans improve the chances of starting a new business?

This study explores a number of questions

about the value of planning for starting new businesses:

- Does business planning improve the chances of starting a new business?
- Do more formal business plans (i.e., written plans) improve the chances of starting a new business?
- Is business planning a signal that entrepreneurs are engaged in other startup activities, that is, "doing" rather than "thinking" about starting a new business?

An expanded variation of this article was published for the U.S. Small Business Administration: Gartner, William B. and Jianwen (Jon) Liao (2007). Pre-venture planning. In: C. Moutray (Ed.) *The Small Business Economy for Data Year 2006: Report to the President*. Washington, DC: U. S. Small Business Administration Office of Advocacy, pp. 212-264. The views presented here are those of the authors and not of the U.S. Small Business Administration or the Office of Advocacy. This article is published with the permission of the second author.

We explore whether business planning is helpful in creating new ventures by using a unique dataset, the Panel Study of Entrepreneurial Dynamics (PSED), which identified and tracked over a five year period a sample of entrepreneurs who were in the process of starting businesses (Gartner, Shaver, Carter, and Reynolds, 2004). Because the PSED identified entrepreneurs who were in the process of starting new businesses, this sample solves a major problem in many studies of entrepreneurs: "survivor bias" (Aldrich and Reuf, 2006; Delmar and Shane, 2003). Survivor bias results when a study only observes successful firms, that is, those businesses that "survived" rather than any of the businesses that failed. Understanding success requires that one be able to compare these successes to failures. By studying a sample of nascent entrepreneurs in the process of starting a business, and following these entrepreneurs over time, we can compare those entrepreneurs who successfully started new businesses with those entrepreneurs who gave up. It is the ability to compare and contrast differences among the successes and the failures that allows researchers using the PSED to generate important insights into the activities that truly influence success at business creation.

This article is divided into three sections. The first section reviews prior research examining the value of planning for success at creating new ventures. The second section describes the sample and methods for exploring the PSED and reports the findings from these analyses. The final section of this article discusses the limitations of using quantitative datasets like the PSED for understanding the process of business planning and offers some insights on the implications this study might have for public policy and training.

Pre-venture Planning and New Venture Creation

There are many books from seasoned entrepreneurs, advisors, investors, and

academics that suggest entrepreneurs should engage in business planning during the process of venture creation as a way to guide these individuals towards activities that are useful for starting new firms (e.g., Abrams, 2003; Ford, Bronstein, Pruitt, Ernst, and Young, 2007; Timmons, Zacharakis, and Spinelli, 2004). While there has been some concern about devoting too much time to business planning or making the business planning process too sophisticated (Bhide, 1994; Gumpert, 2002), there is a strong belief that it is better to engage in some type of planning during the business creation process. Yet, there have been some suggestions (i.e., Bhide, 2000; Carter, Gartner, and Reynolds, 1996) that completing a business plan is less important than taking action to develop the business. This section explores some of the reasons and evidence for the value of business planning, as well as arguments for why engaging in planning might be less helpful for starting business.

Why Plan?

Delmar and Shane (2003) offer four broad reasons for why entrepreneurs should engage in planning during the process of venture creation. They suggest that planning helps individuals develop a framework and context for taking action so that individuals can: (1) quickly identify what they don't know, (2) understand what resources they need and when these resources might be utilized, (3) identify specific actions that can help solve problems and attain goals, and (4) help communicate to others the purposes, objectives, and activities necessary to achieve venture success (Ansoff, 1991; Locke and Latham, 1980).

Entrepreneurs who develop a plan become conscious of their assumptions about how their proposed new business will succeed. Assumptions regarding the ability of the new firm to be profitable, the amount of resources necessary to start and operate the firm, the knowledge necessary to provide products and services in a timely and cost-effective

manner, and the number of potential customers are just a few of the many issues that entrepreneurs would consider when planning. By surfacing these assumptions, entrepreneurs can test their beliefs, rather than invest time and resources in actions that may have little chance of succeeding. Planning, therefore, can save time and money in the venture creation process (Armstrong, 1982).

Planning can also reduce the likelihood that there will be delays in organizing the new venture, acquiring plant and equipment, as well as producing goods or providing services. Planning can help an entrepreneur identify when key resources (such as inventory, equipment, licenses and permits, trained personnel) will be needed during the business creation process, thereby saving time and money (Armstrong, 1982; Bracker, Keats, and Person, 1988).

Planning can help entrepreneurs identify specific actions they will need to take to achieve their goals (Locke and Latham, 1980). By identifying specific actions, entrepreneurs can focus their efforts, as well as realize when their efforts are not producing their desired goals. Planning, therefore, keeps individuals "on track" by channeling their energy and providing benchmarks (Robinson, 1984; Schrader, Taylor, and Dalton, 1984).

Finally, planning helps entrepreneurs communicate their vision to others, thereby enabling the emerging venture to gain support and resources (Bird, 1992). By having a plan, entrepreneurs can thereby enlist potential investors, suppliers, customers, and employees into involvement in the new venture. A business plan also represents a form of "legitimacy" in that entrepreneurs who have a plan are likely to be viewed by others as individuals who understand the requirements for business success, rather than as "dreamers" who are unaware of potential pitfalls in the startup process (Delmar and Shane, 2004; Honig and Karlsson, 2004).

Reasons for Not Planning

There are a number of reasons offered for why entrepreneurs may not benefit from business planning. First, the process of business creation for new and radically innovative companies might be so unpredictable and uncertain that planning might not help to identify critical contingencies and options. Matthews and Scott (1995) suggested that entrepreneurs who perceive highly uncertain environments may be less likely to engage in planning because they believe that planning efforts will not provide any information that can be usefully acted on. They found that as the perceptions of uncertainty for how business success might be achieved in particular environments increased, these entrepreneurs were less likely to engage in business planning.

Second, entrepreneurs construct their businesses through action, and through action, the new venture becomes apparent to these entrepreneurs and to others. For example, Baker and Nelson (2005) defined entrepreneurs whom they identified as "bricoleurs" as individuals who would "make due with whatever was at hand (p. 330)." These bricoleurs "created" the necessary resources for venture development and growth, rather than allowing themselves to be bound by perceived environmental constraints. They suggest that entrepreneurs construct their businesses and environments through action:

The bricoleurs in our study did not view opportunities as objective and external to the resources and activities of the firm. Rather, the processes of discovering opportunities and enacting resources were often one and the same, with both the resource environment and the opportunity environment idiosyncratic to the specific firm and constructed through processes of bricolage. (Baker and Nelson, 2005: 358)

Baker and Nelson (2005) propose that action

is necessary for people to make sense of what occurs in their lives. This implies that planning before taking action to explore the environment (certain or uncertain) would be premature (Weick, 1979). In this perspective, entrepreneurs may only know what their goals and objectives are once they have taken action to see what might be achievable. Finally, the process of planning takes time, effort, and resources which could be used to engage in activities that might be more helpful for the creation of the new business. For example, Carter, Gartner, and Reynolds (1996: 154) suggest that:

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.

Planning, then, might be a distraction from taking the necessary actions to create a business, much like the saying, "analysis paralysis," in that entrepreneurs might distract themselves with the process of planning to avoid taking actions to secure customers, acquire resources, hire employees, or undertake other tasks that make the business a reality.

Evidence About Pre-Venture Planning

One of the major problems with researching the value of planning for creating new ventures is that most studies have not actually looked at new business creation. For example, Bhide (2000) uses businesses on the *INC Magazine* list of the 500 fastest growing private firms in the United States as his primary source of data. His sample, then, looks at already established firms, and only firms that have high rates of sales growth. There are no failures in Bhide's sample and there are no low growth firms, either, to compare with the high growth sales firms.

When a study looks only at successful firms there is a high likelihood that the study has "survivor bias." The successful firms are survivors in that over a period of time many firms would have likely failed, and the failures would not be listed in a register of the survivors to be studied.

We need to pay attention to this problem of survivor bias because a study examining why some businesses are successful requires that they also be compared to businesses that are not. If a study only looks at successes, there is often an assumption that the failed firms are simply not like the successes. So, for example, if successful firms had founders who invested their personal resources in these new ventures, one might assume that the unsuccessful firms had founders who did not invest their personal resources. Without knowing whether the unsuccessful firms had investments from their founders, it is impossible to make this assumption. Therefore, a founder's personal investment could be an irrelevant issue in determining the success of an emerging venture. Any study of successful firms, then, needs to account for differences between themselves and failed firms.

The number of research studies that have compared entrepreneurs who have successfully created new firms with entrepreneurs who have failed is very small. Indeed, the studies that have looked at planning and its influence on new venture creation stem from data using either the Panel Study of Entrepreneurial Dynamics (Liao and Gartner, 2006; Reynolds, 2007) or data collection methods and questions based on the PSED (Delmar and Shane, 2003, 2004; Honig and Karlsson, 2004; Shane and Delmar, 2004). Table 1 lists the studies that have focused on planning during the process of business creation, the size of these samples, and the highlights of their findings about the value of planning and success in starting a business.

These studies strongly suggest that planning

Table 1 - Previous Research on Business Planning and Success at Starting a Business

Study	Sample: Size	Method of Analysis	Findings on Planning
Delmar & Shane, 2003	Sweden PSED*: 223	Event History: A Hazard Function of Disbanding	Entrepreneurs who engaged in business planning were less likely to quit the venture creation process during a three year time frame. Entrepreneurs who engaged in business planning were more likely to: increase product development and the number of venture startup activities. Entrepreneurs with prior startup experience were less likely to quit the venture creation process. The type of opportunity pursued significantly affected survival.
Delmar & Shane, 2004	Sweden PSED: 223	Event History: A Hazard Function of Disbanding	Entrepreneurs who engaged in business planning and formed a legal entity were less likely to quit the venture creation process during a three year time frame, and more likely to complete product development, initiate marketing efforts and obtain inputs.
Honig & Karlsson, 2004	Sweden PSED: 396	Logistical Regression on persistence in the startup process	A nearly significant result ($p < .10$) that entrepreneurs who engaged in business planning were likely to continue in the startup process (survive). Being a member of a business network, knowing the customer before startup, and being a manufacturing startup increased the likelihood of survival by a factor of 4.4, 2.7 and 4.0 respectively.
Liao & Gartner, 2006	PSED: 276	Event History: A Hazard Function of Disbanding	Entrepreneurs who engaged in business planning were less likely to quit the venture creation process during a two year time frame. Entrepreneurs who initiated business plans: early in uncertain competitive and financial environments; and late in certain competitive and financial environments were less likely to quit.
Reynolds, 2007	PSED: 648	Comparison of Means (F- test) and cross tabulations (Chi-Square)	Planning, as a part of a factor that describes the process of developing an organizational and financial structure, along with a variety of human capital (e.g., years of industry, work and managerial experience) and entrepreneurial activities (e.g., total hours and funds invested, contact with helping programs), is more likely to predict success at getting into business.
Shane & Delmar, 2004	Sweden PSED: 223	Event History: A Hazard Function of Disbanding	Entrepreneurs who engaged in business planning before talking to customers and initiating marketing and promotion efforts reduces the "hazard of termination" by 46% and 41%, respectively. Each prior startup by founding team reduced the "hazard of termination" by 24%. Each additional organizing activity reduced the "hazard of termination" by 25%.

A detailed description of the Sweden PSED can be found in: Davidsson & Henrekson, (2002).

matters (with Honig and Karlsson (2004) finding a nearly significant result, $p < .10$). Entrepreneurs who complete a business plan are more likely to either continue in the business startup process, or actually start a business than those individuals who do not.

There are a number of other factors that influence whether entrepreneurs will be successful in the venture creation process. For example, Delmar and Shane (2003) suggest that the nature of the opportunity pursued by entrepreneurs has a more significant impact on success than the act of planning itself; however, in terms of actions that an entrepreneur can take, planning is the most important activity to engage in. Liao and Gartner (2006) found that entrepreneurs who were more uncertain about their chances of financing their businesses and understanding the competitive dynamics of their industries were more likely to be successful if they planned early in the startup process, rather than later. Shane and Delmar (2004) found that entrepreneurs who completed business plans before engaging in efforts to talk to customers and engage in marketing and promotional efforts were more likely to be successful in continuing in their startup efforts (i.e., not quit).

Overall, it would seem that completing a business plan is beneficial to enabling entrepreneurs to successfully create new businesses. The results seem to be fairly robust, even though there are differences in the various sample sizes used from each of the two major samples (US PSED and the Swedish PSED), such as how certain measures were constructed to indicate planning, as well as success at getting into business, and the analytical techniques used to evaluate the data. Business planning is an important activity that significantly correlates with creating new ventures.

It should be noted that all of the planning, activity, and outcomes used in these studies are broad representations of what individuals actually do when they are involved in starting businesses. Business planning and

other startup activities are subjective reports based on each entrepreneur's sense of what completion of business planning (or any of the other activities) means to them. [Editor's note: Because of space limitations, Tables 2, 3, and 4 can be found in the original article by Gartner and Liao, published by the SBA, and cited on page 1] For example, written business plans vary in comprehensiveness and thoroughness. We do not know about the quality differences among the various written business plans. A written business plan may be 10 pages or 100 pages, have a detailed analysis of competitors or not, provide quarterly financial pro-formas or not, etc. We might assume that the quality of the business plan would also reflect the amount of time and effort entrepreneurs have undertaken to develop their business. But, the measures used in these PSED-based studies do not provide many details of what entrepreneurs actually did when they completed their business plans. Additionally, we do not have very many insights into why these business plans were undertaken (or not), as well as little understanding as to what purposes these business plans were utilized for during the startup process.

Be that as it may, we suggest, based on the arguments for business planning offered earlier, and the evidence from prior studies of nascent entrepreneurs over time, that:

Hypothesis 1: Nascent entrepreneurs who completed a business plan (versus those that did not complete a business plan) would be more likely to start an on-going business.

Hypothesis 2: Nascent entrepreneurs who completed more formalized business plans (versus those that did not plan, or created less formalized plans) would be more likely to start an on-going business.

Methodology Sample and Research Design

This study uses a sample of cases selected from the PSED (Gartner, Shaver, Carter, and Reynolds, 2004). The Institute for Social

Research at the University of Michigan administers the PSED (Online, <http://projects.isr.umich.edu/psed/>). A comprehensive overview to the PSED, as well as descriptions and downloadable files of all datasets, questionnaires, and codebooks can be found at: www.psed.info.

We followed procedures consistent with Reynolds (2007) for selecting cases from the PSED for inclusion in our analyses. First, we select cases that did not report going into business prior to the initial interview. We then selected cases with: (1) at least one follow-up interview, (2) an entrepreneur engaged in three or more startup behaviors, (3) two startup actives must have occurred within a 12 month period, (4) and the entrepreneur did not report positive monthly cash flow two years prior to any other start-up event. Finally we selected cases where the first startup activity was reported less than five years before the initial interview. These decision rules result in the selection of 638 cases.

Given the concern about survivor bias, a number of arguments have been offered that strongly urge researchers interested in the activities of nascent entrepreneurs to use cohorts of individuals initiating firms within the same time frame (Delmar and Shane 2003, 2004; Gartner and Carter, 2003). For example, Gartner, Carter, Lichtenstein, and Dooley (2003) suggested that a cohort of nascent entrepreneurs who first began startup activities within two years of the initial interview date would be appropriate, while Delmar and Shane (2003, 2004) suggest a cohort of nascent entrepreneurs within one year of the initial interview. Reynolds (2007) has strongly disagreed with this assessment and provides alternative evidence indicating that selecting a cohort of nascent entrepreneurs who first began startup activities within five years of the initial interview would be appropriate. We conducted our own set of analyses of different cohort groups of nascent entrepreneurs who originally initiated startups acts within 24-, 36-, 48-, 60- and 72

months prior to the date of the initial interview. Based on these analyses we decided to select a cohort group with entrepreneurs who initiated startup acts within 48 months of the initial interview date. This cohort group was the best trade off between maximizing the number of cases with complete responses to the questions while minimizing any significant differences in the overall characteristics of the cohort sample. This approach leads to a cohort of 312 nascent entrepreneurs that were used in this study.

The PSED dataset comes with post-stratification weights for each respondent based on estimates from the U.S. Census Bureau's Current Population Survey (Curtin and Reynolds, 2004). The post-stratification scheme was based on gender, age, racial and ethnic background, and educational attainment.¹ Applying these weights for analyses is essential for generalizing any studies related to PSED dataset. According to Curtin and Reynolds (2004: 492), "Weights should be used in all types of analyses." As per their suggestions for using these weights, we adjusted the weights to reflect the reduction in the number of cases due to missing and non-applicable responses.

Dependent Variable: Startup Status

The survey conducted at the time of the initial interview is the Q wave survey. Follow-up surveys were conducted at intervals of 12 (R wave), 24 (S wave), and 36 (T wave) months to evaluate the status of these start-up efforts. In each of the follow-up interviews, nascent entrepreneurs were asked: "How would you describe the current status of this startup effort? Is it: (1) now an operating business, (2) still in an active startup phase, (3) still a startup but currently

¹ Household income was considered as a metric in the weighting scheme. "Both household income and educational attainment provide estimates of socioeconomic status, but there are fewer missing values for educational attainment (1.8% versus 23.7%) which reduced the need to estimate weights for cases with missing values" (Curtin and Reynolds, 2004: 491).

inactive, (4) no longer being worked on by anyone, or (5) something else?" [Editor's note: See original article for survey questions and measures.] We combined all responses from the R, S, and T waves and assigned individual nascent entrepreneurs into three categories: (1) "in business" – the entrepreneur is operating an on-going business; (2) "still active" – the entrepreneur is still in the process of starting the business; and (3) "inactive/quit" – the entrepreneur is no longer working on trying to start a new business or has given up. There were 53 respondents who answered "something else" or did not respond. For the remaining cases: 132 (51.1%) were "inactive/quit"; 22 (8.3%) were "still active"; and 105 (40.6%) were "in business."

Independent Variables: Business Planning

Business planning

In each of the four waves of data collection (Q, R, S, T), nascent entrepreneurs were asked the question, "Has a business plan been prepared for this startup?" We coded the following two scenarios as "1" for "Business plan has been prepared." Either nascent entrepreneurs have prepared a business plan and therefore responded with "1" in Q wave, or business plans have not been prepared for in Q wave, but have been developed at a later wave such as R, S, T. We coded the cases as "0" for "Business plan has not prepared."²

Business Plan formalization

The responses from Q, R, S and T for the question: "What is the current form of your business plan?" We coded 1 for "Unwritten/in head", 2 for "informally

written" and 3 for "formally prepared." For cases where inconsistent responses occurred among four waves of responses from Q, R, S, T, we applied the following decision rule. If response at later round shows an increased degree of formalization (i.e., from unwritten/in head to informally written, or to formally prepared), we coded the response to the highest level of formalization in business planning at the later round. For nascent entrepreneurs who claimed a higher level of formalization in business planning (i.e., written business plan) at early round of data collection (i.e., Q round), but changed to a low level of formalization (i.e., informally written) at a later round (i.e., S round), we coded these nascent entrepreneurs according to the highest level of formalization. The occurrence of this situation may be due to the fact that nascent entrepreneurs may have changed or modified their ideas, and as a result, the business plans were changed as well. Regardless, the change of response at later round should not change the fact the nascent entrepreneurs may have engaged in a formal business planning process at the early stage.³

Business Plan Timing

Business planning may occur at any point along a sequence of start-up activities. Entrepreneurs were interviewed about whether they had completed (yes or no) any of 26 different start-up activities [Editor's note: Information regarding data collection can be found in the original article by Gartner and Liao and cited on page 234-235] If an entrepreneur said "yes," a month and year was also provided for when that activity occurred. Calculating whether business planning was early or late in the sequence of startup activities along the four rounds of data collection (Q, R, S, T) was determined as the time (in months) from the date in which any one of the 26 start-up

2 There are eight cases where nascent entrepreneurs provided inconsistent claims in that a business plan was first prepared for in Q round, but later they changed to a response that "a business plan has not been prepared." The RESIDs for these eight cases are 328100097, 328100113, 328100222, 328100268, 328100430, 328100519, 328100619, and 337800153. We excluded these cases from the analysis.

3 We eliminated 14 cases where nascent entrepreneurs claimed to have both unwritten and informally written business plan and 8 cases where they claimed "something else."

activities were initiated to the date when business planning occurred. This number was divided by the total gestation time, which is determined as the time (in months) between the dates of the earliest and latest activities indicated from responses in Q, R, S, T waves. For those events where a year and season was reported (winter, spring, summer, or fall) rather than a month, an appropriate month (February, May, August, or November) was assumed. For those where a year was provided, the month was assumed to be June.

Number of Startup Activities

Following the approach employed by Reynolds and Miller (1992), we counted the number of activities/events entrepreneurs engaged in during the start-up process through the Q, T, S, and T waves of data collection. There are few cases when nascent entrepreneurs reported the same activity in a follow-up wave of interview. In those cases, meticulous efforts were taken to ensure that the initiation of one startup activity was counted once, not repeatedly, and that activity was identified as the first time it was listed.

Other Independent Variables/Covariates

Prior studies argue that the successful creation of a new venture depends on the founder's human capital (Bates, 1990; Bruderl, Preisendorfer, and Ziegler, 1992; Castrogiovanni, 1996). Following Shane and Delmar (2004), we control for five dimensions of human capital: education, industry experience, managerial experience, prior startup experience, and startup team. For education, nascent entrepreneurs were asked "what is the highest level of education you have completed so far?" Studies suggest that entrepreneurs with more industry experience are less likely to terminate their new ventures (Bates, 1990). We measure industry experience as the total years of full-time paid work experience in any field within the industry these nascent entrepreneurs were starting their emerging firms in. For manage-

rial experience, nascent entrepreneurs were asked to respond to the question "For how many years, if any, did you have any managerial, supervisory or administrative responsibilities." Consistent with Bruderl and Preisendorfer (1998), we control for prior startup experience and whether the entrepreneur is involved with a startup team. Prior startup experience was measured by the number of startups a nascent entrepreneur has been involved with. Lechler (2001), in a review of research on ventures formed by teams versus solo-founders, indicated that teams are more successful. A dummy variable is created for solo startup and for a startup team. Additionally, we also control for the industry: tech-based and non-tech based. To test the effect of assistance programs on venture creation, we created two dummy independent variables: taking classes on starting a business, and contact with government sponsored programs.

Results

Analyses

A multi-nominal logistic regression model (Maddala, 1983) was conducted to identify the combination of independent variables that discriminate nascent entrepreneurs in the "in business" and "still active" types relative to nascent entrepreneurs in the "inactive/quit" reference type, which is the baseline model. The baseline logit simply compares each category to a baseline category where all the coefficients for the variables are "0" (SPSS 1999).

As we have three categories in the startup status variable, there will be two sets of logit functions, where each will be compared with the baseline category of "inactive/quit." To further highlight the differences of business planning, formalization of business planning and timing of business planning across "in business", "still active", and "inactive/quit" groups, we employ Analysis of Variance (ANOVA) with Bonferroni post hoc comparisons. ANOVA models are also used to compare the mean differences in the number

Table 2 - Descriptive Statistics and Correlations

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	N	Mean	Std	1	2	3	4	5	6	7	8	9	10	11	12
1. Years of Education	311	4.574	2.031	1.000											
2. Gender	312	0.477	0.500	-0.063	1.000										
3. Years of Industry Experience	312	17.079	10.821	0.096*	0.099*	1.000									
4. Years of Managerial Experience	309	8.256	8.304	.216***	0.078	.679***	1.000								
5. Prior Startup Experience	141	0.518	0.501	0.059	-0.043	.178**	.307***	1.000							
6. Industry (tech vs nontech)	300	0.320	0.467	0.021	0.111*	-0.052	-0.003	0.035	1.000						
7. Contacts with government sponsored programs	310	0.118	0.323	.175***	0.026	-0.001	-0.071	0.047	0.027	1.000					
8. Taking Classes or workshops	311	0.342	0.475	.136**	-0.072	-0.023	-0.004	0.010	0.058	.175***	1.000				
9. Startup Team Organized? Yes/No	311	0.586	0.493	-0.021	0.050	0.035	0.098*	0.043	0.007	0.027	-0.033	1.000			
10. Has a business plan been prepared for?	307	0.675	0.469	0.073	-0.078	0.004	0.066	0.068	.142**	0.008	0.100*	.230***	1.000		
11. The degree of Business Plan formalization	209	2.288	0.701	0.125*	0.006	-0.003	0.022	0.142	0.126*	0.050	0.033	-0.086	0.039	1.000	
12. Timing of Business Planning	211	0.471	0.326	-0.045	-0.057	-0.071	-0.142**	0.070	0.067	0.036	0.036	0.010	-0.079	-0.139**	1.000

*** a <=0.01; ** a <=0.05; *a<=0.1

Table 3- Multinomial Logistic Regression Models

Independent Variables	Model I						Model II						Model III					
	"Still Active"			"In Business"			"Still Active"			"In Business"			"Still Active"			"In Business"		
	B	Wald	Exp(B)	B	Wald	Exp(B)	B	Wald	Exp(B)	B	Wald	Exp(B)	B	Wald	Exp(B)	B	Wald	Exp(B)
Constant	-2.261	3.151*					-12.358	5.802**		-0.768	0.229		-14.665	4.338**		1.408	1.220	
Education	-0.093	0.227	0.911	-0.214	2.269	0.807	0.409	0.773	1.505	-0.281	2.603	0.755	0.917	2.006	2.501	-0.344	3.432*	0.709
gender	0.424	0.332	1.528	1.205	5.689**	3.336	0.361	0.056	1.435	1.421	5.474**	4.142	0.814	0.206	2.256	1.517	5.887**	4.560
Industrial Experience	0.051	1.434	1.052	0.007	0.041	1.007	0.249	4.886**	1.283	0.005	0.017	1.005	0.504	5.397**	1.656	-0.003	0.004	0.997
Managerial Experience	-0.012	0.059	0.988	0.002	0.002	1.002	-0.172	2.842*	0.842	-0.024	0.190	0.977	-0.545	4.812**	0.580	-0.024	0.196	0.976
Prior Startup Experience	0.414	0.344	1.513	0.085	0.029	1.088	3.668	4.023**	39.188	-0.123	0.039	0.884	9.996	5.274**	21.929	0.030	0.002	1.030
Startup team	0.755	1.146	2.127	-0.365	0.499	0.694	-0.801	0.265	0.449	-0.336	0.292	0.715	-0.462	0.054	0.630	-0.479	0.584	0.620
Industry	-0.516	0.415	0.597	-1.065	3.493*	0.345	0.010	0.000	1.010	-0.603	0.755	0.547	1.533	0.782	4.631	-0.664	0.869	0.515
Government Sponsored Programs	-0.270	0.057	0.763	1.176	3.029*	3.241	-22.229	0.000	1.000	1.600	2.914*	4.955	-26.547	0.000	1.000	1.856	3.780*	6.400
Taking Classes or workshops	-1.179	1.914	0.308	-0.088	0.030	0.916	-0.992	0.563	0.371	0.155	0.065	1.168	-2.082	1.278	0.125	0.028	0.002	1.028
Business Planning	-0.066	0.008	0.937	1.788	8.522***	5.979												
Business Plan formalization							1.341	1.975	3.823	1.610	2.280**	5.003						
Timing of Business Planning													-13.773	4.125**	0.000	-0.654	0.539	0.520
$\Delta-2$ log likelihood Chi-Square	29.169*						25.120**						43.570***					
Goodness-of-fit (Deviance Chi-Square)	176.031 (p=.888)						96.080 (p=.947)						86.919 (p=.986)					
Cox/Snell Pseudo R2	0.228						0.39						0.460					
Nagelkerke Pseudo R2	0.272						0.46						0.55					
Overall % correctly classified	66.70%						69.00%						76.20%					

a. The reference category is: Inactive/Quit.

b. ***a<=0.01; **a<=0.05; *a<=0.10

of startup activities across business planning and business plan formalization variables.

Results

Table 2 lists means, standard deviation, and correlations for the dependent and independent variables. Table 3 shows the results of multi-nominal logistic regression models rotating the variables of business plan, business plan formalization, and timing of business plan. The validity of the analysis was assessed by means of three major parameters: model fitting information, goodness of fit information, and R^2 .

In the model fitting information, the -2 log likelihood value is the intercept only of the model, and the chi-square value is the difference between the intercept-only and the final model. As shown in Table 3, the observed chi-square for model I, II, and III were 29.169 ($p < 0.1$), 25.120 ($p < 0.05$) and 43.570 ($p < 0.01$) respectively. It can be concluded that the final models are significantly better than the intercept-only models in all three models.

The goodness of fit test measures the fitness of the data collected to the model that is being proposed. Deviance chi-square was used to assess goodness of fit. Deviance chi-square is the change in -2 log-likelihood when the model is compared to a saturated model, that is, when it is compared to a model that has all the main effects and interaction. If the model fits well, the log likelihood should be small and the observed significance level should be large. As shown in Table 6, the deviance Chi-squares for Model I, II and III are 176.031 ($p = .888$), 96.080 ($p = .947$) and 86.919 ($p = .986$), suggesting a good fit for all three models.

The pseudo R^2 statistic represents the proportion of variability in the dependent variable that can be explained by the independent variables. Correlation between the variables increases with higher values of the R^2 statistic. As shown in Table 3, the Cox/Snell pseudo R^2 statistics for Model I,

II, and III were .228, .389, and .460, respectively. The Nagelkerke pseudo R^2 were .272, .462, and .546 for model I, II, and III, respectively, therefore demonstrating good explanatory power of the models.

The analysis also provides a classification table which compares the observed and predicted group with their prediction probability. The classification table shows how well a model fits its data. In all three models, the overall percentages of correct classification were 66.7%, 69%, and 76.20%, suggesting a good successful rate for all models. The percentage is determined by the classification table generated by the logistic model where the logistic equation is applied to the original dataset and the predicted value (0 versus 1) is compared to actual value (0 versus 1). If the predicted value is the same as the actual value (i.e., 0 and 0, 1 and 1), the classification is correct. Otherwise, the classification is false. Therefore, the greater the percentage of correct classifications, the better is the fitness of the model.

Business Planning, Formality and Timing

Evidence in Table 3 suggests that the "in business" entrepreneurs were associated with "business planning" with a coefficient of 1.788 ($p < 0.01$), which is a significant discriminating factor with regard to "still active" and "inactive/quit" entrepreneurs. This finding suggests that the "in business" entrepreneurs are more active in developing business plans. Additionally, this table shows that engaging in business planning increases the probability of successfully starting a new business by a factor of 6 ($\text{Exp}(\beta) = 5.979$).

The coefficients for the formalization of business plan under model II are statistically significant for the "in business" entrepreneurs. This finding suggests the greater the degree of business plan formalization (i.e., going from a plan that is in one's head to writing a formal plan) increases the like-lihood that an entrepreneur will successfully start a new business. The "still active" nascent entrepreneurs have

a coefficient of -13.773 ($p < 0.01$) for the timing of business planning, but this coefficient is not significant for the "in business" type ($\beta = -0.654$). This result suggests that the "still active" entrepreneurs are likely to complete a business plan earlier than their "in business" and "inactive/quit" counterparts, but that most of the difference is between the "still active" entrepreneurs and the "inactive/quit" entrepreneurs.

The coefficients for government-sponsored programs (Table 3) are 1.176 ($p < 0.1$), 1.600 ($p < 0.1$), and 1.856 ($p < 0.1$) respectively. This finding suggests that contact and participation in government-sponsored programs significantly differentiates between "in business" entrepreneurs and the "inactive/quit" entrepreneurs. The exp(B) has values of 3.241, 4.955, and 6.4, respectively, therefore suggesting that, on average, entrepreneurs who contact and participate in government programs are about five times more likely to successfully start a new business.

The coefficients for industry experience, managerial experience and prior startup experience (Table 3) are all statistically significant and important discriminators between the "still active" and "inactive/quit" entrepreneurs. While the signs for industry experience and prior startup experience are positive, it is negative for managerial experience. These findings suggest that entrepreneurs with less industry experience and "no or limited prior" startup experience were more likely to be "inactive" or to "quit" during the venture creation process. However, less managerial experience tended to be associated with the "still trying" group. We can also infer that the "in business" entrepreneurs seem to have less industry, managerial, and prior startup experience.

Finally, gender has a positive and significant coefficient for all three models (Table 3) for the "in business" entrepreneurs ($\beta = 1.205$, $p < 0.05$; $\beta = 1.421$, $p < 0.05$; $\beta = 1.571$, $p < 0.05$), suggesting that male nascent entrepreneurs have a higher likelihood of

starting a business, while female entrepreneurs have a higher probability of being in the "inactive/quit" group.

Other variables such as taking classes and workshops on starting a business, having a startup team, industry, and education were included in the model, but none of these variables were found to be statistically significant discriminators across all three of the multi-nominal logistic regression models.

Analysis of Variance (ANOVA)

As indicated in Table 4, using the statistical technique of analysis of variance, the mean differences for business plan, business plan formalization, and timing of business planning were statistically significant across "in business", "still active", and "inactive/quit" groups.

Figures 1, 2, and 3 provide the mean plots for all three planning variables. Bonferroni post hoc comparisons suggest that "in business" nascent entrepreneurs did significant more business planning (mean = .766) than their "inactive/quit" counterparts (mean = .614). Similarly, the degree of business plan formalization is significantly greater for the "in business" group (mean = 2.476) as compared with the "inactive/quit" group (mean = 2.176). In terms of the timing of business planning (early or late), the "still active" group seems to engage in business planning significantly earlier (mean = 0.316) than the "in business" group (mean = 0.378), followed by the "inactive/quit" group (mean = 0.565). This finding may suggest that once "inactive/quit" entrepreneurs engage in business planning their planning efforts show that continuing to pursue starting a new venture is unfeasible and should be abandoned. By contrast, "still active" nascent entrepreneurs seem to jump into business planning early, but their plans do not lead to additional start activities that might lead to successfully starting a business.

As indicated in Figure 4, the number of start-

Table 4 – Analysis of Variance (ANOVA)

Variables	Groups	Means		Sum of Squares	df	Mean Square	F
Has a business plan been prepared for?	Inactive/Quit	0.614	Between Groups	1.332	2	0.666	3.080**
	Still Active	0.658	Within Groups	54.285	251	0.216	
	In Business	0.766	Total	55.618	253		
The degree of Business Plan formalization	Inactive/Quit	2.176	Between Groups	3.719	2	1.859	3.853**
	Still Active	2.243	Within Groups	83.001	172	0.483	
	In Business	2.476	Total	86.720	174		
Timing of Business Planning/Gestation Duration	Inactive/Quit	0.565	Between Groups	1.876	2	0.938	10.344** *
	Still Active	0.316	Within Groups	15.601	172	0.091	
	In Business	0.378	Total	17.477	174		

up activities for nascent entrepreneurs “with a business plan” and “without a business plan” averaged 15.793 and 11.306 respectively, and is statistically significant ($p < 0.01$). This finding suggests that nascent entrepreneurs who completed a business plan tended to engage in more startup activities than those without a business plan. Of those nascent entrepreneurs who had a business plan, the averaged number of startup activities for different levels of business plan formalization, namely “unwritten,” “informally written,” and formally prepared” are 14.787, 15.195, and 16.898 respectively (Figure 5). The ANOVA and its subsequent post hoc pair wise comparisons are all statistically significant ($p < 0.01$). Our results suggest that the number of startup activities entrepreneurs engage in increases significantly with an increased level of business plan formalization.

DISCUSSION

We believe that the results from the analyses of the PSED data on business planning provide evidence that entrepreneurs who engage in business planning will significantly increase their chances of starting a new business. The results also point to a number of other issues in the planning process that enhance the likelihood that new businesses can be successfully started. Yet, before we reiterate these findings and offer some insights into the

implications of these findings for future research, policy, and practice, we will temper our enthusiasm by pointing out some of the limitations of using: (1) survey data such as the PSED, (2) different cohort samples from the PSED, and (3) structured questions about planning, entrepreneurial activities, and self-reports about business success. [Ed. Note: These limitations, while discussed in depth in the original article, do not detract from the value of the research and are omitted here for space reasons.]

Suggestions for Policy

We believe this study provides evidence of the value of government, public and private partnerships, and university efforts to provide training and assistance for entrepreneurs to develop business plans as part of the process of getting into business. Showing that the activity of business planning increases the likelihood of getting into business can be used to encourage entrepreneurs to undertake planning with the knowledge that planning is beneficial. Agencies can also use these findings to require that business plans be generated before other forms of assistance are provided (such as financing and additional consulting support and assistance). Completing a business plan is strongly correlated to completing other business startup activities, so that a business plan is a signal that the entrepreneur is committed to insuring that

Figure 1 - Mean Plot of Business Planning (Yes = 1, No = 0) and Startup Status

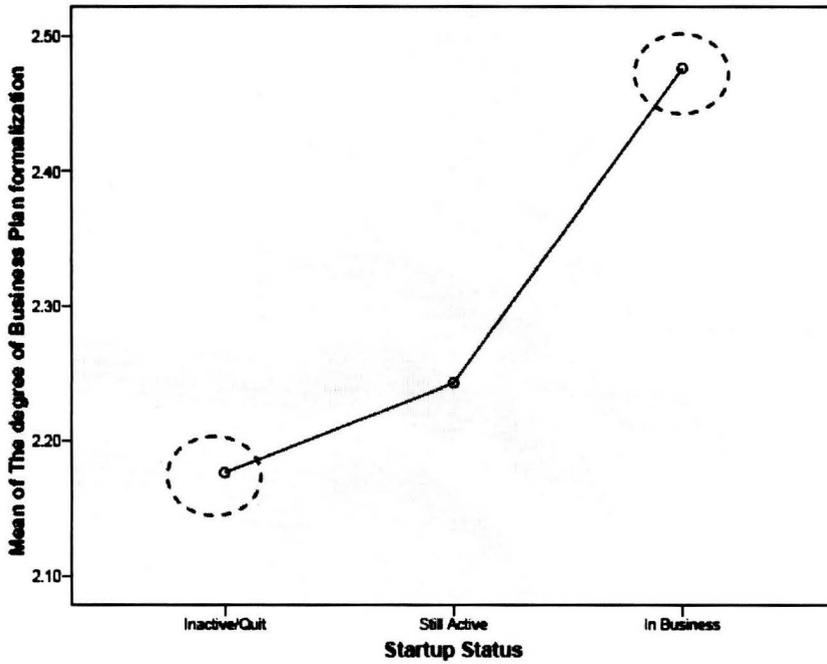


Figure 2 - Mean Plot of Degree of Business Plan Formalization and Startup Status

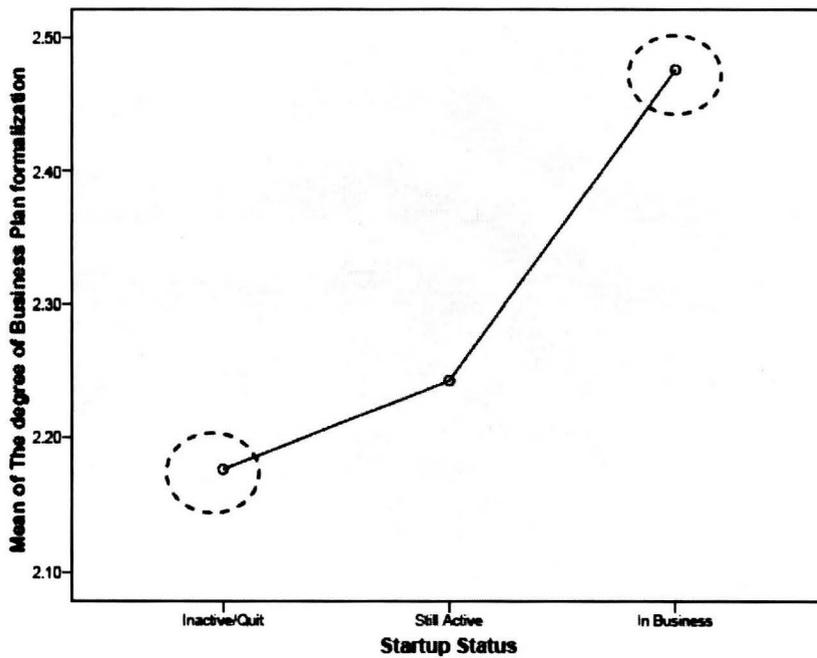


Figure 3 - Mean Plot of Timing of Business Planning and Startup Status

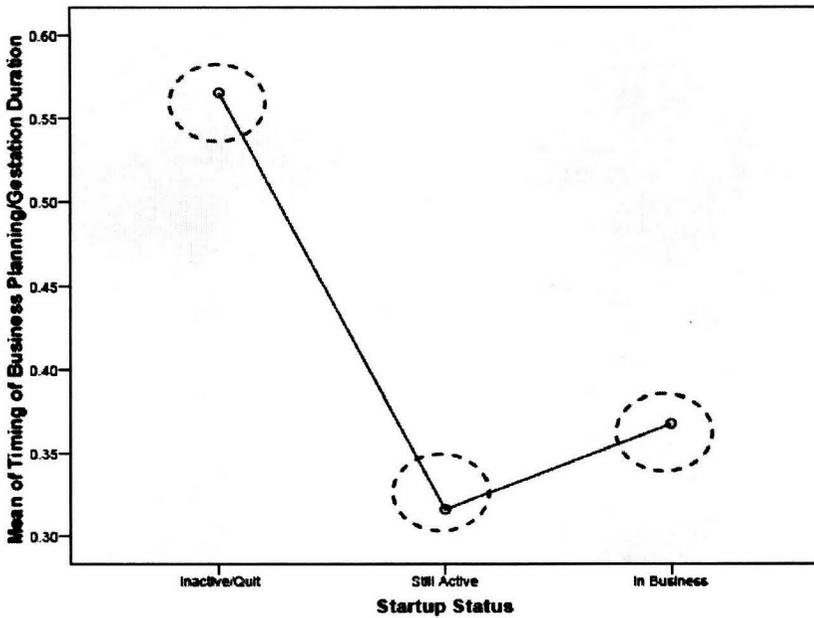


Figure 4 - Mean Plot of Degree of Business Planning and Startup Activities

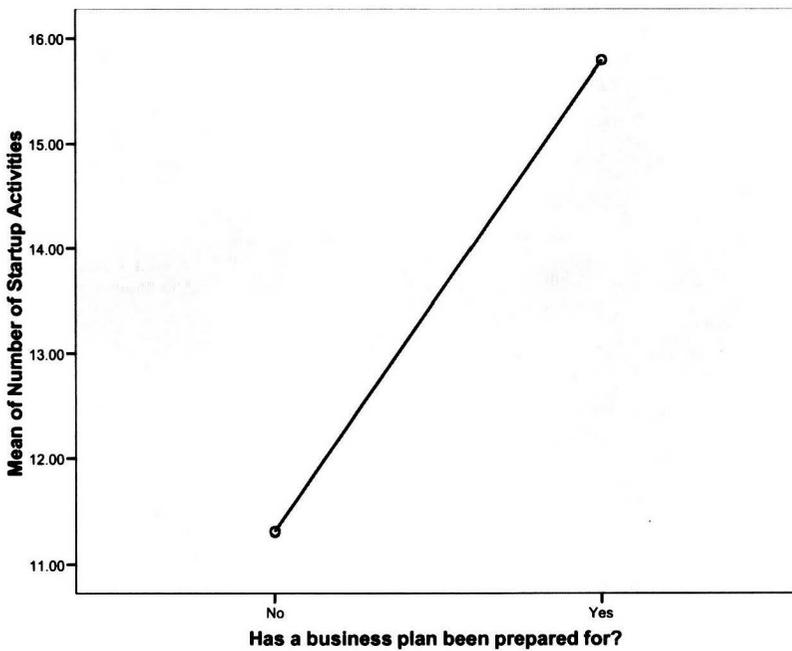
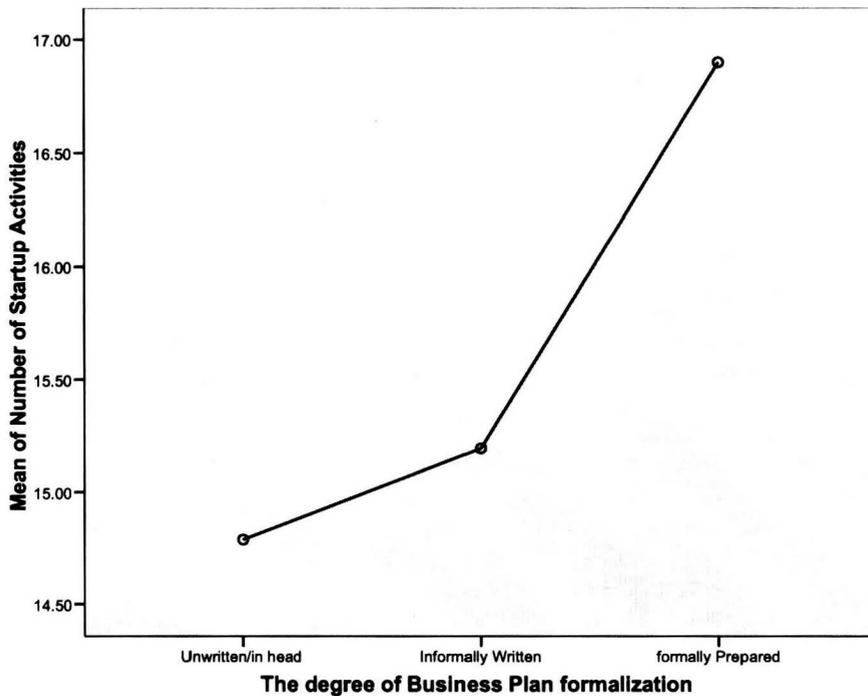


Figure 5 - Mean Plot of Degree of Business Plan formalization and Startup Activities

the emerging venture will come into fruition. A business plan might also be considered an indicator that an entrepreneur is committing time and effort to developing the venture. The business plan, then, might be a good way to separate committed entrepreneurs from those that are “dabblers” (still trying) in the process. We should also note that the general tenor of this article implies that success in the business planning process occurs when businesses are started. A successful outcome of the planning process might also be when entrepreneurs decide to quit the startup process. We suggest that business plans that indicate that an entrepreneur’s original business concept and strategy is faulty, and therefore, not worthy of pursuing is also an important outcome of the business planning process. Failure can be expensive. Reducing the time and resources invested in venture ideas that are not capable of succeeding improves the overall efficiency of the entrepreneurial process. Most venture creation efforts do not result in

new ventures; therefore, any activities such as planning that can reduce the resources invested in non-viable businesses is a net benefit because losses are reduced.

The finding that indicates that entrepreneurs who use government programs that provide assistance to entrepreneurs are more likely to start new businesses is also an encouraging sign that current government efforts to help entrepreneurs do help.

Suggestions for Practice

We believe these results demonstrate the need for entrepreneurs to invest the time and resources necessary to complete a business plan. Completing a business plan and completing a written business plan strongly predict that entrepreneurs are more likely to start a new business. The finding that entrepreneurs who engage in business plans and write formal plans also engage in more activities suggests that business planning

may not be a distraction from more important startup activities but rather a corollary to engagement in the startup process overall. We believe that our results suggest that people who plan are also people who act: Planners are doers!

Suggestions for Researchers

The use of longitudinal data to study the process of starting a business is invaluable for uncovering factors that influence subsequent outcomes for entrepreneurial success. The use of such crude measures of planning and other venture creation activities in the PSED, though, suggests the need for more detailed longitudinal case studies and interviews of entrepreneurs during the startup process to ascertain their motives, as well as fine tune what specifically occurs when entrepreneurs act to create new ventures. It would also be helpful to know more about the reasons entrepreneurs engaged in business planning. Few questions are asked in the PSED that attempt to explore why nascent entrepreneurs engage in the activities they do. Providing reasons for planning activities would generate many insights as to whether business plans were used to raise capital, etc. It would be valuable to supplement the PSED cases with matching in-depth case studies of nascent entrepreneurs (i.e., finding nascent entrepreneurs who have similar demographic, start-up and venture characteristics) to identify more of the details and logic used by these individuals for how and why they planned.

It would be valuable to explore which specific activities in the business planning process might be more beneficial to entrepreneurs during the startup process. For example, specific activities involved with finding customers and discerning their needs might be more helpful than other activities such as developing pro-forma financial statements. Different, specific planning activities might be more or less valuable depending on the type of business entrepreneurs are starting or the industry in

which these businesses might be competing. One issue that we would like researchers involved in studying the process of new venture creation to consider is whether entrepreneurs understand the business model for their prospective ventures. That is, do most entrepreneurs understand the specific "formula" for how they will make money? We surmise that many entrepreneurs may successfully start a new business, but they lack critical insights into how to grow and develop their fledgling firms into businesses that can be profitable and provide positive cash flow. Research that can better define and detail the characteristics and processes involved in developing profitable business models would provide significant insights into the value of business planning for venture success.

Conclusions

The finding that entrepreneurs who complete a business plan are six times more likely to get into business than those entrepreneurs who don't complete a business plan is a result of some consequence. Nearly all of the evidence offered in this article suggests that completing a business plan, and better yet, writing a business plan, is positively correlated to getting into business. So, completing a business plan is an activity that should be encouraged for entrepreneurs involved in the business startup process. And, in a more conservative vein, there appears to be no evidence suggesting that business planning, completing a business plan, or writing a business plan is detrimental to the successful development of a business. Planning does not seem to detract from other entrepreneurial activities that are necessary for starting a business. Indeed, business planning seems to be a strong signal that an entrepreneur is undertaking other important tasks to insure success at new venture creation. The bottom line is this: If you are actively starting a business, then *do* make a business plan.

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