

Pre-startup formal business plans and post-startup performance:
A study of 116 new ventures

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ABSTRACT

This study examined whether writing a business plan before launching a new venture affects the subsequent performance of the venture. The data set comprised new ventures started by Babson College alums who graduated between 1985 and 2003. The analysis revealed that there was no difference between the performance of new businesses launched with or without written business plans. The findings suggest that unless a would-be entrepreneur needs to raise substantial startup capital from institutional investors or business angels, there is no compelling reason to write a detailed business plan before opening a new business.

INTRODUCTION

The most widely dispensed advice for would-be entrepreneurs is that they should write a business plan before they launch their new ventures. The world of entrepreneurship is awash with information on business plans. For example, a simple Google™ search shows 26.9 million hits for “*business plan*” and 80.9 million hits for *writing AND “business plan”*. Business plan contests are so ubiquitous that a search for “*business plan competition*” reveals 906,000 hits. No doubt about it, business plans are now deeply entrenched as a key, perhaps even crucial, component of the aspiring entrepreneur’s toolkit. The field has come a long way since the pioneers of entrepreneurship education training put writing a business plan at the core of their programs in the 1970s (e.g., Timmons et al, 1977).

Writing a business plan is probably the most widely used teaching tool in entrepreneurship education and training. Almost 20 years ago, Hills (1988) reported that leading entrepreneurship educators regarded writing a business plan as the most important feature of entrepreneurship courses. Of the 100 top universities in *US News and World Report's* 2004 ranking, 78 had at least one course dealing with business plan education; and 10 of the top 12 conducted business plan competitions (Honig 2004). An observer wryly commented that universities appear to take as much pride in winning business plan competitions as in fielding championship athletic teams (Honig, 2004).

It is a laborious task, which according to some gurus takes 200 or more hours. What should a professor say to a bright student raring to be an entrepreneur who asks, “Why are you making me take time out to write a business plan?” Search the academic literature and you come up almost empty handed, and what little you find does not give a convincing answer. As Honig observed in 2004, neither teaching business plans nor writing business plans are sufficiently justified by empirical or theoretical literature.

Granted, careful preparation of a business plan provides an entrepreneur with an opportunity to pull together all facets of a new venture, to examine the consequences of different strategies and tactics, and to determine the human and financial requirements for launching and building an idea into a viable venture (Timmons et al., 1985). But is it worth the effort? For budding entrepreneurs impatient to implement their ideas, writing a business plan often seems to be an unnecessary academic exercise standing in the way of what is really important to them, which is opening their doors for business. After all, some of the heroes of today’s would-be entrepreneurs, such as Steve Jobs, Bill Gates, Michael Dell, and Sergey Brin and Larry Page did not have business plans in hand when they embarked on ventures that changed the world.³

A business plan is extensively used as a screening device for investors and bankers. Honig and Karlsson (2004) found that institutional pressure—for example, an application for a government guaranteed loan—is important in determining whether or not new organizations write business plans. But is a written plan necessary for entrepreneurs bootstrapping their businesses with their own savings, augmented in some instances with money from family members and close friends? Looked at another way, even if entrepreneurs do not need to raise money from formal sources including business angels, venture capitalists, bankers, and corporate strategic partners, should they nonetheless write a business plan at the outset?

Prescriptive wisdom suggests that business planning should lead to superior performance, whether it be a new venture or an established business. However, as Castrogiovanni (1996) pointed out, “research on planning in general, and on pre-startup planning in particular, has yielded mixed results.” Recent studies by Shane and Delmar (2002, 2003, 2004) and Gartner and Liao (2005), found strong evidence that business planning lessened the likelihood that nascent ventures would be terminated during the gestation period between conception and birth. Another study of nascent entrepreneurs by Honig and Karlsson (2004) found that survival seems to be unrelated to business planning and also that there was no relationship between profitability and writing a business plan during the first two years after a business was founded. In summary, there is little convincing evidence on whether or not business planning before a business is up and running subsequently produces superior performance.

Our study addressed the paucity of evidence linking pre-startup business planning to performance after a business is operating by looking at the whether new ventures with a written business plan at the outset subsequently performed better than those without

³ 42% of the Inc. 500 in 2004 rated Bill Gates as their favorite entrepreneur; Michael Dell was the favorite of 14%.

one. In a study of 116 independent ventures started by Babson College alums, we found that writing a business plan before a business began operating made no difference to the subsequent revenue, net income, and number of employees.

We suggest that if entrepreneurs do not need to raise substantial outside financing, they need not write a detailed business plan before starting their venture. Instead they should make financial projections, especially cash flow (which implies that they should look at expected sales revenue and operating costs including material, labor, and capital assets) and open their business. Then, if their business grows and needs external funding, they will be able to write a business plan that is more persuasive. We also suggest that business educators, including ourselves, are probably placing too much emphasis on writing detailed conceptual business plans rather than implementing actual businesses; which leads us to question the value of academic business plan competitions.

Our recommendations are more in line with the “just do it” advocates (e.g., Bhidé, 2000; Allinson et al., 2000) than the planning school (e.g., Timmons, 1980). On the surface, we appear to disagree with Shane and Delmar (2004) who recommend that a nascent entrepreneur should write a business plan before even talking to a customer let alone doing any marketing or promotion. Shane and Delmar, however, were looking at the disbanding or survival of nascent ventures, unlike our study, which looked at actual performance when a full-time business was a going concern. We should also note that Gartner and Liao (2005) in a study similar to Shane and Delmar’s found that early business planning can be beneficial for survival, but that not all emerging businesses benefit from planning early. We agree with Gartner and Liao’s statement that “when an emerging venture does not need outside resources, and/or when nascent entrepreneurs appear to understand their competitive situation, the process of completing a business plan should be accomplished after other startup activities have been accomplished.”

We believe that our study makes the following contributions that help to fill a need for more empirical evidence about the relationship between starting a business with a written business plan in hand and subsequent operating performance: It examined actual revenue, net income, and number of jobs, rather than simply survival and whether or not a business was profitable. The data set included only full-time independent startups and excluded all other startups such as spin-offs and spin-outs from existing businesses, buyouts of existing businesses, franchisees, and other non-independent new ventures. Only businesses in which the entrepreneur worked full-time were included. And entrepreneurs in the study had similar business educations, which included learning how to write detailed business plans.

LITERATURE REVIEW

Because there is a dearth of descriptive statistics in the scholarly research literature on the relationship between writing business plans at the outset and subsequent operating performance, we will start with the evidence from a trade magazine. Every year, *Inc.* magazine publishes a special issue, *Inc. 500*, which contains details of

“America’s [500] Fastest-Growing Private Companies.” For the most part, they are relatively young companies; for instance, of the 2004 group, 48% were founded since 1998, and 84% were less than 10 years old (Inc. 500, 2004). In a survey of the Inc. 500 in 2002, founders were asked whether they had written a formal business plan before they launched their ventures. Bartlett (2002) writing in *Inc.* reported that “Only 40% said yes. Of those, 65% said they had strayed significantly from their original conception, adapting their plans as they went along. In a similar vein, only 12% of this year’s [2002] Inc. 500 group said they’d done formal market research before starting their companies.” According to Bhidé (2002), that finding is consistent with his analysis of the Inc. 500 in 1989 when “41% of the founders had no business plan at all, 26% had a rudimentary plan, and only 28% had a formal business plan.” A study of Harvard Business School alums that had started businesses discovered that no more than a third had written detailed business plans. Bhidé (2002), the author of the Harvard study, commenting on his findings and those of *Inc.* stated, “It’s a pretty universal distribution.” Put another way, only a minority of entrepreneurs, including even MBAs from a preeminent business school, started their ventures with a formal written business plan.

Why is it that only a minority of the cream of the crop of entrepreneurs—the Inc. 500—wrote formal business plans before they launched their ventures? The answer may be found in the reason for writing a plan, which Shuman, Shaw et al. (1985) reported was mainly to raise funds. Zacharakis and Meyer (2000) stated that a business plan is the primary source of information for the investment screening decision. This reinforces Hindle’s (1997) claim that information in a business plan is used by readers to support their decisions about “provisions of resources to the venture.” Similarly, Mahdjoubi (2004) found that 90 percent of venture capital funded companies used their business plans for external communication with third parties, essentially for financing purposes.

A written business plan is virtually a universal requirement for entrepreneurs who are seeking formal venture capital. However, very few entrepreneurs ever have formal venture capital in hand at the moment they start their ventures—Bygrave (2004), for example, estimated that fewer than 1 in 10,000 new ventures are funded at the outset with formal venture capital. Thus it is puzzling why so many entrepreneurs bother to write business plans if the principal purpose of a plan is to raise venture capital, because in almost every case they come up empty handed. Part of the explanation may be that there are other financing sources, such as angels, bankers, and corporate strategic partners that require written business plans from entrepreneurs.

It seems unlikely that the pursuit of financing is the sole justification for writing a formal business plan. Timmons et al. (1985) in successive editions of *New Venture Creation: A Guide To Entrepreneurship* and in a Harvard Business Review article (Timmons, 1980) argued that a business plan is much more than a fund-raising device. It has intrinsic value in articulating “what the opportunity conditions are, why the opportunity exists, the entry and growth strategy to seize it, and why you and your team have what it takes to execute the plan.” In a study of 65 participants who completed a business plan, Wyckham and Wedley (1990) found that 46 used it as an internal planning document, 32 used it as a marketing plan, 27 to get financing, and 12 to attract a partner.

Many used it for more than one purpose. Mahdjoubi (2004) supports this notion when he contends that business planning is valuable in helping clear a number of problem hurdles before starting up, but goes on to report that the plan after being formalized was never read in many cases.

Since *New Venture Creation* first appeared in 1977, the Timmons Entrepreneurs-Opportunity-Resources model with the Business Plan at its center has become the core framework for the basic course in many undergraduate and MBA entrepreneurship curricula. It's no surprise that generations of entrepreneurship students have been schooled to regard a formal business plan as the foundation on which to build their new ventures. Business plans per se have almost become a new industry sector with consultants, accountants, lawyers, professors, business competition organizers, hard-copy publishers, online publishers, financiers, investors, and bankers all vying for part of the action. We even know of students and alums that have almost made a career of competing in business plan competitions. In one case, the entrepreneur won more than \$100,000 in at least four business plan competitions, but four years after the company was founded it had no significant revenue.

David Gumpert, who with the late Stanley Rich, wrote one of the pioneering books, *Business Plans That Win \$\$\$: Lessons from the MIT Enterprise Forum*, (Gumpert and Rich, 1987) and followed it up with *How to Really Create a Successful Business Plan* (Gumpert, 2003A) has grown increasingly skeptical about the value of business plans. His skepticism is fueled by a concern that too many would-be entrepreneurs are spending far too much time writing and polishing their business plans instead of getting on with actually implementing their business plans. The title of his latest book, *Burn Your Business Plan! What Investors Really Want from Entrepreneurs*, says it all (Gumpert, 2003B).

Amar Bhidé, a professor of entrepreneurship at Columbia University, expresses his reservations about business plans as follows:

It seems as if people who are trying anything, whether it's playing tennis or starting a business, want—and should want—to collect as much knowledge as is available about what it is they're trying to do. And since we haven't collected much systematic knowledge about starting new businesses, instruction on how to write a plan becomes a crutch. And for sure, there's some 10% to 15% of plausible businesses for which writing a plan does make sense. But not for the great many. You're required to teach entrepreneurship, and there's a great student demand for instruction on how to write a business plan. You have to generate courses, and it's an easy course to generate. (Bhidé, 2002)

What are would-be entrepreneurs to make of all this conflicting advice? Or more to the point, what should we academics tell them? Ideally, we would like to be able to show them convincing evidence that ventures launched by entrepreneurs with a business plan subsequently outperformed those without one. But on this important question the

scholarly literature comes up short. The next section shows that the empirical evidence is scarce and what little there is tends to be at odds.

THEORY AND HYPOTHESES

A written business plan is the roadmap for the early years of a company's life. It spells out in detail the founding strategies and resources for a new venture and usually projects them for the first five years.

How important are the founding conditions on the future development of a new venture? Or put differently, how much change can a young organization make to its original business plan once it is up and running and the founding conditions are in place? Some theorists reason that inertial factors severely restrict the extent of that change (e.g., Stinchcombe, 1965; Aldrich, 1979; Hannan and Freeman, 1984). Conversely, others reason that managers can make major changes in the direction of an established company (e.g., Barnard, 1938).

Bamford, Dean, and Douglas (2004) suggest that new firms have the greatest scope for changing resources and decisions because they are not locked into procedures, processes, and policies that limit the flexibility of larger, well-established organizations. It implies that the founding strategies and resources of a new venture might change significantly after the initial startup period; which in turn implies that writing a detailed business plan that sets out strategies and resources for as long as five years after a new venture starts operating may have limited lasting value.

On the other hand, goal setting theory argues that writing a business plan even before undertaking any marketing activity including something as basic as talking to a customer enhances the performance of a new firm (Shane and Delmar, 2004). However, is there a downside to writing a business plan before a company opens its doors for business? Could setting goals and choosing strategies and resources to attain them tend to build in rigidity that limits future flexibility? Stinchcombe (1965) proposed that the beginning actions of a new organization have a lasting influence on how it develops. Bamford et al. (2004) even went so far as to state that some theory suggests that the effect of post-startup changes in resource and decision choices on the growth of a new venture pales in comparison with the impact of the initial conditions. So a new firm cannot escape from resource and decision choices made at its founding. This is supported by the empirical work of Sandberg (1986), Eisenhardt and Schoonhoven (1990), Cooper et al (1994), and Bamford et al. (2000). In a study of the growth of new banks, Bamford et al. (2004) concluded that new venture resource and decision choices made at the point of inception had a significant impact on new venture growth even five years after formation.

Some studies have found that early-stage companies that completed formal business plans failed to outperform those that did not (Lumpkin et al.1998; Miller and Cardinal 1994). According to some scholars, planning imposes too much rigidity on young businesses in their early stages, when they would be better off emphasizing action as opposed to mere planning. For example Carter, et al. (1995) found that among a group

of would-be entrepreneurs, those who actually started a business “put themselves into the day-to-day process of running an ongoing business as quickly as they could, and these activities resulted in starting firms that generated sales (94% of the entrepreneurs) and positive cash flow (50% of the entrepreneurs)”. Those who were “still trying” tended to be more involved in internal activities such as saving money and preparing a business plan. Likewise, Keeley and Kapp (1994) discovered that “high performing” companies focused primarily on action rather than planning. They “did not systematically search for a business idea, and did not develop a detailed business plan.” Others have also failed to find any association between business planning and business success (Robinson & Pearce, 1983; Boyd, 1991). Based on their findings previously cited in this article, Honig and Karlsson (2004) concluded that new organizations do not write business plans to improve performance; instead, they write them to conform to institutional rules and to mimic the behavior of others. And Sahlman (1997) bluntly stated that a business plan doesn’t rate higher than two on a ten-point scale as a predictor of a new venture’s success.

In contrast, some studies have shown that planning assists with the overall growth and success of new firms (Bracker, Keats & Pearson 1998; Schwenk & Shrader 1993). In their study of selected U.S nascent entrepreneurs, Ford, Matthews and Baucus (2003) found that business plan formality in year zero of nascent businesses had a significant and positive correlation to the actual and expected revenue in year one. Time, however, lessened the relationship between planning in year zero and the financial outcomes in year two, suggesting that business planning appears to improve performance in the short term and needs to be updated to optimize its impact. Delmar and Shane (2002) examined 223 Swedish nascent firms over the first 30 months after conception and found that nascent companies that engaged in planning activities early in the organization process had a higher survival rate than those that did not. In later articles based on the same data set, they reported that when a business plan preceded contacting a customer or initiating marketing and promotion, a nascent business was less likely to be disbanded (Delmar and Shane, 2003; 2004). And Gartner and Liao (2005) in a study of U.S. nascent firms similar to Delmar and Shane’s Swedish study found that planning early increased the likelihood of survival in uncertain financial and highly competitive situations, while planning late increased venture survival in financially stable and less competitive environments.

The above theory and empirical evidence is not consistent, so we propose the following null hypothesis:

Hypothesis 1: All other things being equal, new ventures launched with formal written business plans do not subsequently outperform ones launched without them.

But of course all other things are not equal. In the kind of data that can be collected from actual businesses, there are factors that are likely to affect the outcome; among them are age of the business, amount of initial capital, industry sector, business model (not to be confused with business plan), location, and education, gender, and experience of the founders. We will discuss the control variables later.

METHOD

Research Design and Sample

At BKERC2004, Bygrave, Lange, and Evans (2004) reported on a study of 1,971 Babson BS and MBA alums who graduated between 1985 and 2003. In that study, 35.2% of the respondents were entrepreneurs who had started at least one full-time business since graduating. For the research reported in this paper, we emailed to that set of entrepreneurs an online questionnaire seeking intimate details about their businesses. Questions dealt with personal information on the founders, their businesses, business plans, business models, changes to their business models, initial financing, and performance.⁴ Three hundred and thirty valid replies (response rate 48.9%) were received.

We acknowledge that by surveying only Babson alums we might be criticized for not having a broader-based data set. However, there are considerable benefits from this bounded data set: The respondents have similar educations. There is probably no group of alums anywhere in the world who have been exposed to as much information about entrepreneurship and instruction on writing detailed business plans while they were earning their degrees. Furthermore, because they are business school graduates, they are able to understand and reply correctly to somewhat complex questions. Their replies were not anonymous; respondents were asked to provide names and addresses of themselves and their companies. We guaranteed them confidentiality because some of the key information that they were asked to provide was very sensitive. We believe that because they were Babson alums they were more likely to trust the Babson professors conducting the research and therefore be more forthcoming with sensitive information than a random group of anonymous entrepreneurs would have been.

Dependent variables

The dependent variables for measuring company performance were revenue, net income, and number of employees at the time the questionnaire was being completed. If the company was no longer operating as an independent entity, we asked what its revenue, net income, and number of employees were at its peak. We recognize that there is a never-ending debate about how to measure the performance of private companies; see, for example, Brush and Vanderwerf (1992). We would argue, however, that short of an independent audit of a company's books, our measures are about as valid and reliable as one can reasonably expect with self-reported data. Net income is probably the least reliable of our three dependent variables because all the companies in our data set are private and how they compute their net income depends on many factors including their legal form (C corporation, sub-chapter S, limited liability company, etc.), tax loss carry-forward, and founders' salaries and perquisites.

⁴ The complete questionnaire is available from the lead author.

Control Variables

Similar to Shane and Delmar (2004) and Gartner and Liao (2005), we controlled for the following human resources of the founder and the founding team:

Education. Level of education has been shown to influence entrepreneurial activity (e.g., Reynolds et al., 2003). Because all the respondents in our data set were Babson alums we had only two levels of education, BS or MBA.

Industry experience. According to Bates (1990) and Schoonhoven et al. (1990) entrepreneurs with more industry experience are less likely to terminate their new ventures because they have a better understanding of the workings of the industry. It is a small step to propose that entrepreneurs with previous industry experience are likely to be more successful. We measured industry experience by the total number of years that the founding team members combined had worked in the same industry prior to founding their new venture.

Previous startup experience. The process of starting a new venture is a skill that can be taught conceptually (e.g., Timmons et al, 1985), but the most valuable learning comes from actually starting a new venture. For instance, entrepreneurs who have started companies previously are less likely to terminate their new ventures (Bruderl et al., 1992). Similarly, we believe it is likely that they will be more successful. We control for this with a dummy variable that indicates whether or not a founder was a first-time entrepreneur or had previously founded another full-time new venture.

Number of founders. It has been asserted that new ventures started by larger teams are more likely to terminate their new ventures (Bruderl and Preisendorfer, 1998). However, others (e.g., Timmons et al., 1985) have stressed that a team is more effective—even essential—for a new high-potential venture; and Eisenhardt and Schoonhoven (1990) found that a larger top management team was an advantage. Either way, it was necessary to include the number of members of the initial venture team as a control variable.

Gender. It is known that businesses started by women are in general smaller than those started by men (e.g, Reynolds et al., 2003) and that women start their businesses with less financing than men (e.g., Carter, 2002; Bygrave, 2004). Hence gender was a control variable.

Our company control variables were as follows:

Age of company. The dependent variables, sales revenue, net income, and number of employees in most cases will increase with the number of years that the company has been in business. Hence we controlled for company age.

Year of founding. In principle we could have controlled for year of founding with dummy variables for each year. But that would have been too cumbersome. However, because our data set spans the Internet bubble of 1998-2000 when there was exceptional entrepreneurial activity, we included a categorical dummy variable for the years 1998, 1999, and 2000.

Startup financing. In accordance with what we have already discussed about the importance of founding resources, and following the specific discovery of Bamford et al. (2004) that initial capital had a significant impact on new venture growth even five years

after founding, we measured the total amount of funding—both internal and external—raised by the new venture before it was 12 months old.

Internal and external financing. Holz-Eakin et al. (1994) and Taylor (2001) found that getting external funding reduced the chances of terminating a venture. Castrogiovanni (1996), on the contrary, reasoned that the amount of startup capital invested by the founders (as a proportion of the minimum startup capital needed for a new venture) is positively related to new small business survival. Turned around, Castrogiovanni's supposition means that the greater the external proportion of a new venture's financing, the more likely that it will not survive. We counter Castrogiovanni's reasoning by arguing that a new venture's ability to raise external funding from arm's length financiers such as business angels, bankers, and in a few rare cases venture capitalists is a validation of its business model and the capability of its founding team. Hence, the greater is its likelihood for future success. Therefore we included a variable for percentage of total initial funding raised from arm's length external sources. We counted funding from personal friends as internal not external financing.

As already mentioned, we studied only independent startups that were still private companies. Hence we did not need to control for the type of new venture (e.g., corporate spinoff or spinout, buyout, franchisee, etc.). We did not control specifically for industry because we found that the distribution of companies by industry segment were similar for companies started with a business plan and those started without one.

Variables with skewed distributions were transformed to their natural log values.

ANALYSIS AND RESULTS

Our final data set contained only independent, for-profit startups. We culled buyouts, corporate entrepreneurs, franchisees, family business spin-offs, not-for-profits, etc. from the initial set. Then we narrowed the set down to only replies that were complete or almost complete. We also removed two outliers, one because it was so much bigger than the second biggest company and the other because its profit margin and revenue numbers appeared inconsistent, given its industry sector. But we hasten to point out that none of the conclusions of the statistical analyses that we report here were changed when we removed those outliers. Our final data set contained 116 cases composed of 94 men and 22 women, 61 MBA's and 55 BS's, 64 with and 52 without a written business plan when they launched their businesses.

Descriptive Statistics

The descriptive statistics for the variables that we used to build our regression models are shown in Table 1. Both the means and the medians are shown because the distributions are skewed. For the group as a whole, the mean annual revenue was \$2.37 million (median \$500,000); the mean net income was \$327,095 (median \$97,500); the mean number of employees was 22 (median 4); the amount of startup money raised before the business was 12 months old was \$319,169 (median \$62,500) of which 22

percent (median 0 percent) was from external sources; and the mean age of the businesses was 58.7 months (median 46 months). The number of founders was 1.88 on average (2 median); their combined previous experience in the same industry was 9.5 years (mean), 3.5 (median); and 28 percent had previously started at least one other full-time new venture.

When the group was divided into sub groups we found that those with a written business plan at the outset subsequently had more revenue, more net income, more employees, raised more startup money, and were slightly older. However, only the difference in number of employees was statistically significant, and then only at the 0.1 level.

Businesses with male entrepreneurs outperformed those with females on revenue, net income, number of employees, and amount of startup money, even though the difference in the average age of the businesses with male and female entrepreneurs was negligible (for males: mean business age 57.78 months, median: 47 months; for females: mean business age 62.68 months, median: 44 months). Differences between males and females for revenue, net income, and number of employees were significant at the 0.01 level or better, but the differences in business age and amount of startup money were not significant.

When it comes to the education of the entrepreneur, BS's outperformed MBA's on revenue, net income, and number of employees. BS's raised more startup money on average (although the median amount of startup capital raised by BS businesses was less than the median for their MBA counterparts), and BS businesses were somewhat older. Differences in revenue, net income, number of employees, and business age were significant at the 0.05 level or better, but the difference for amount of startup money was not significant. BS's were more likely to have pre-startup written business plans (0.05 level) and also were more likely to have started at least one previous venture (0.05 level).

The number of founders correlated with revenue at the .001 level, and with net income and with number of employees at the .05 level. But their combined previous experience in the same industry did not correlate at all with revenue, net income and number of employees. Ventures with founders who had previous startup experience had more revenue (0.001 level), more net income and employees (0.05 level), and were more likely to be male and have BS degrees.

Older businesses had more revenue, net income, and number of employees (all at the 0.001 level). The total amount of startup funding correlated with revenue (0.05 level) but with neither net income nor number of employees; it was also greater for businesses founded during the years 1998-2000 (0.1 level). The percentage of startup funding that was raised externally correlated with revenue (0.01 level), net income (0.05 level), and number of employees (0.05 level). Men raised more external funding than women (0.05 level). The percentage of startup funding that was raised externally correlated with having a pre-startup written business plan at the 0.05 level.

Regression models

The regression analyses are shown in Table 2. The base models 1A, 2A, and 3A include only the control variables and models 1B, 2B, and 3B show the effects of having a business plan in hand before a new venture began operating.

When all the control variables were included, revenue correlated with gender (0.05 level), business age (0.01 level), and number of founders and year of founding (both at the 0.1 level). Education (BS or MBA), previous startup experience, previous industry experience, amount of startup funding, and percent of startup funding raised externally were not significant (Model 1A). The only control variable that correlated with net income (Model 2A) was business age (0.01 level). And in model 3A, number of employees correlated with gender (0.05 level), number of founders (0.1 level), and business age (0.01 level).

When the predictor variable, pre-startup written business plan, was added to each of the models, it did not correlate with revenue (1B), net income (2B), and number of employees (3B). Hence we cannot reject the null hypothesis that new ventures launched with formal written business plans in hand do not subsequently outperform ones launched without them.

We then wanted to see if there was any difference in the performance of businesses that strayed from their original business plan as time went by. We asked entrepreneurs how much their business differed from what they laid out in the original plan. For those companies that set out with business plans, we took our regression models, 1B, 2B, and 3B, removed the business plan variable and replaced it with the following three variables one at a time: change in the business model, change in product/service, and change in top management team. Not one of those three variables correlated significantly with revenue, net income, or number of employees.⁵ Which leads us to conclude that deviating from the initial business plan did not affect subsequent performance.

DISCUSSION

Business Plans

What is the utility of a business plan if, as our results indicate, it does not matter whether or not entrepreneurs have written plans before they launch their ventures? We presented the entrepreneurs with a list of purposes for a business plan and asked them to rate the importance of these purposes in their own plans. A summary of the results is listed in Table 3 (1 = extremely important, 4 = not important). It shows that strategic planning ranks top, followed in order by articulating the business model, financial planning, operations planning, examining critical assumptions, and fund raising.

⁵ These regression models are not included in this paper.

With strategic planning, business model, financial planning, and operations planning being ranked high, it might be expected that those with business plans would outperform those without. But as we have seen that was not the case. Could it be that Shuman, Shaw et al. (1985) were correct and the main reason for writing a business plan is to raise money even though our entrepreneurs ranked fundraising as only the sixth most important purpose for a plan? We certainly know that those who wrote a business plan raised substantially more money (mean \$408,216, median \$70,000) before the company was 12 months old than those who did not (mean \$196,988, median \$40,000). So, *casting statistical tests aside* for a moment, it does appear that writing a business plan paid off in terms of fund raising. Furthermore, we also know that if we do not control for any other factors whatsoever, those companies with a business plan in comparison with those without one had greater revenue (mean \$2.52 million, median \$550,000 vs. mean \$2.18 million, median \$350,000), higher net income (mean \$371,086, median \$97,500 vs. mean \$272,952, median \$93,000), and more employees (mean 31.80, median 5 vs. mean 9.59, median 3). It would be a small *common sense* step to conclude that this was because they used their business plan to raise more money, and consequently, because they had more money, they grew faster. But the *statistical analysis* did not bear that out because we did not find a statistically significant correlation between *writing a business plan* and the *amount of money raised* before the company was 12 months old. There was, however, evidence that writing a pre-startup business plan increased the percentage of startup funding raised externally (0.05 level).

Gender

Another interesting finding is that companies founded by men substantially outperformed those founded by women. Here are the numbers: revenue (mean \$2.81 million, median \$600,000 vs. mean \$491,456, median \$153,000), net income (mean \$382,303, median \$100,000 vs. mean \$91,205, median \$70,000), number of employees (mean 26.23, median 5 vs. mean 3.86, median 2). Also men raised more startup money (mean \$375,091, median \$75,000 vs. mean \$39,560, median \$25,000). The businesses owned by women were approximately the same age as those owned by men, so age of the business can be ruled out as an explanation for the differences.

In general terms our finding is consistent with what others have found. For instance, women founded only 8% of the Inc. 500 companies in 2004. Carter (2002) in her study using the Panel Study of Entrepreneurial Dynamics (PSED) data found that the median amount of financing expected by men was twice that of women; furthermore men expected to get more financing than women from team partners, family, friends, employers, and institutional sources. Bygrave (2004) in a study of entrepreneurs in the Global Entrepreneurship Monitor (GEM) 2004 data set found that businesses started by men required more capital than those started by women (\$65,010 vs. \$33,201). He suggested that a partial explanation is that women are more likely than men to start necessity-pushed businesses rather than opportunity-pulled ventures, which generally require more startup capital.

Degree

Babson BS alums founded businesses that performed substantially better than those founded by Babson MBAs. This is what we found for BS versus MBA businesses: revenue (mean \$3.42 million, median \$850,000 vs. mean \$1.41 million, median \$400,000), net income (mean \$504,214, median \$200,000 vs. mean \$167,398, median \$78,761), number of jobs (mean 34.72, median 5 vs. mean 10.64, median 3). BS businesses were older than the MBA ones (mean 67.8 months, median 48 months vs. mean 50.5 months, median 42 months). It is not clear that the amount of startup capital favored BS businesses because although the mean startup capital for BS businesses was higher (mean \$368,102 vs. 272,118) the median was lower (\$50,000 vs. \$65,000). The gender effect is negligible because of the 22 women in the data set, 9 had BS and 13 had MBA degrees. We looked at the industry sectors of businesses started by BS and MBA alums and found no major differences between the two groups. We also found no noticeable difference in the distributions of BS and MBA businesses by the year they were founded. Most of the explanation is that BS alums were more likely to have started a previous full-time venture (0.05 level) and their businesses were older.

We have not been able to find other studies that compare the performance of entrepreneurs with BS and MBA degrees. We know that Bhidé (2000) found that an entrepreneur in the Inc. 500 in 1989 was just as likely to have only a high school diploma as an MBA degree. In fact only 15% held MBA degrees compared with 48% with 4-year degrees. We also know from the Global Entrepreneurship Monitor studies that persons with post secondary education (anything from a post-high school training course through a bachelors degree) have a higher proclivity to be opportunity-pulled entrepreneurs than those with graduate school experience, including masters and PhD degrees (Reynolds et al., 2003). There was no statistical relationship between the lead entrepreneur's highest level of education (no degree, bachelors, masters, PhD) and either the revenue or the number of employees in a random sample 277 of companies in the *Inc. 500* in 2004 (Barnes, 2006). But those studies do not tell us anything about the relative performance of companies started by persons with a 4-year degree versus those with an MBA.

CONCLUSION

We cannot reject our hypothesis that all other things being equal, new ventures launched with formal written business plans do not outperform ones launched without them. But it would be much too glib to follow Gumpert's (2003B) lead and say "Burn that business plan" or perhaps "Forget about business plans." Here are some of the implications of our research:

Entrepreneurs

This is our advice to an entrepreneur: Unless you need to raise external startup capital from institutional sources or business angels, you do not need to write a formal business plan. Instead, do some basic financial planning (which must include projections of sales revenue, operating costs, and purchases of assets) and launch your business. Later on, if your business grows and needs an infusion of substantial external capital, that

will be the time to write a formal business plan. What's more, your story will then be much more persuasive because you will have products and customers, you will have proven your entrepreneurial mettle, and your business will have a higher valuation. Remember that some of the most revolutionary businesses such as Apple, Microsoft, Dell, Google, and Wal-Mart started without written business plans.

Educators

We need to review the emphasis on formal business plans in our entrepreneurship curricula. Are we rewarding students for writing intellectual plans and presenting them elegantly, rather than for implementing actual businesses? It seems to us that university *business plan* competitions are being overdone. If we must have new venture competitions, the emphasis should be on *business implementation*. After all, do university athletics departments run play-book competitions? No, of course not. They reward the actual winners of the contest on the field of play. Entrepreneurship, just like football, is a contact sport not a classroom intellectual exercise.

Babson College, with Jeff Timmons' initiative, started one of the first business plan competitions in the world when it announced the Charm Prize competition for undergraduate business plans in 1984. But interestingly enough, Babson has an undergraduate business implementation competition that handily predates its business plan competition and continues to flourish today. What's more, some of the winners of the implementation award have gone on to become very successful entrepreneurs. For instance, one implementation award winner, Mario Ricciardelli, together with another junior, started a student travel business in 1987 in his dorm room before he wrote a business plan. Later that student venture became StudentCity.com, which Ricciardelli sold in 2004 for \$40 million (Bygrave, 2005). However, unlike business plan competitions, which are ubiquitous, business implementation competitions for students are very rare indeed. A Google search of only "*business plan implementation*" found only 20,100 hits. Let's follow the example of the football team and celebrate the winners in the entrepreneurial contest that counts, implementation in the real world outside the classroom.

Researchers

There probably is no topic in the field of entrepreneurship that we educators promote more than business plans, nor is there a topic about which we know so little in terms of actual outcomes. The topic cries out for much more research. But it is not an easy topic. Our research started out with an email list of approximately 9,000 Babson alums, and we ended up with a data set of 116 cases.

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