

Thanks, but No Thanks: Examining Entrepreneurial Optimism, External Funding, Joint Venture Partnerships, and New Venture Performance

Abstract

Using a proprietary dataset of entrepreneurs receiving a government technology award, I explore how entrepreneurial optimism can impact the decision to accept external funding , to enter into joint ventures, and on firm performance. Although prior research suggests optimism about the success of a venture might motivate entrepreneurs to seek outside funding and to enter in to joint venture partnerships (with mixed results on performance), how high levels of optimism would instead motivate entrepreneurs to not receive such outside help is explored. Results suggest optimism has a non-linear relationship with accepting outside help, which leads founders to receive less external funding and instead choose to “go it alone.” Further, results show rewards for highly optimistic entrepreneurs, which is contrary to previous findings and has implications for researchers and practitioners alike.

Introduction

Prior research on entrepreneurial optimism, or a general expectation for experiencing positive outcomes (e.g. Hmieleski & Baron, 2009; Scheier, Carver, & Bridges, 2001), has focused on how optimism and other affect-related constructs relate to new venture performance (Baron, Tang, & Hmieleski, 2011; Hmieleski & Baron, 2008) and funding negotiation strategies (Dushnitsky, 2010). In general, findings have shown at best a curvilinear relationship between entrepreneurial optimism and performance (Brown & Marshall, 2001) but mostly a negative relationship (Hmieleski & Baron, 2008, 2009). Researchers argue that too much confidence causes entrepreneurs to start – and then persist – with ventures that otherwise would have a low likelihood of success.

One area of interest that has not received much scholarly attention is how entrepreneurial optimism impacts decision making and other behavioral activities (Coelho, 2010; Dai & Ivanov, 2010). In particular, how optimism affects entrepreneurs' willingness to seek and to obtain outside funding for their ventures and to enter into joint venture partnerships has been largely overlooked. In this paper, the relationship between optimism and entrepreneurs' decisions to receive assistance from outside parties is examined. Specifically, I ask: How does entrepreneurial optimism impact funding and joint venture decisions by entrepreneurs? In addition, how high levels of optimism in turn affect the performance of new ventures is explored, shedding light on whether or not entrepreneurs should be especially optimistic about their ventures.

Theory & Hypotheses

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Optimism has been described as an important trait for entrepreneurs as it helps them to pursue opportunities others might not, to take risks, and to persevere with ventures to help make them successful. Although optimism can be a positive trait, most research has shown that too much optimism tends to have negative implications for firm performance (Hmieleski & Baron, 2009). One study in particular showed how optimism had a curvilinear (inverse U-shaped) effect, with a medium amount of optimism having a positive relationship with performance, but high levels of optimism having a negative impact on performance (Brown & Marshall, 2001).

In addition, extant research on entrepreneurial firms, which are typically characterized as having limited access to key resources such as financial capital, social capital, legitimacy, and advanced technological innovations, has shown how such firms can benefit from outside assistance, including venture capital (VC) investment and joint venture partnerships (JV) (Aldrich & Fiol, 1994). VCs, for example, can provide key financial resources as well as managerial advice and social network connections (Gompers & Lerner, 2004). JVs can be a way for new ventures to gain access to technology, suppliers, and/or distributors in a more effective and efficient manner (Hennart, 1991; Kogut, 1988).

However, partnering with VCs and JVs also has potential risks. VCs typically demand equity in the company and managerial control via board of director seats in exchange for financial and strategic resources (Gompers & Lerner, 2004). Also, JVs can suffer from information asymmetry and agency problems as potential competitors must collaborate and share insights in order for the venture to succeed; although the resource-constrained new venture typically has more to gain from this relationship, the innovative technology that has led to the forming of the new venture to begin with can also be exploited by the experienced JV partner (e.g. Dyer, 1997; Hoang & Rothaermel, 2005; Park & Russo, 1996).

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In prior research, it has been assumed that entrepreneurs who are highly optimistic about their potential for success will seek funding to continue developing their underlying technology or business model (Gompers & Lerner, 2004). If entrepreneurs didn't feel their ventures would succeed, they would not go through the arduous process of potentially quitting their jobs, forgoing other financial or vocational pursuits, writing a business plan, pitching their ventures, and being scrutinized by the VC community. Therefore, the more optimistic entrepreneurs are about the success of their ventures, the more likely they might be to secure external funding.

Contrary to that line of reasoning, however, I argue entrepreneurs might not pursue this path. Research has shown that entrepreneurs share several similar characteristics important for this study. For example, they are generally higher in self-efficacy (Zhao, Seibert, & Hills, 2005), optimism, (Hmieleski & Baron, 2009), and positive affect (Baron, Tang, & Hmieleski, 2011), which means they are confident in their ability to succeed and have a positive overall demeanor in the face of highly challenging situations. In addition, they tend to be higher than managers in terms of need for achievement (Stewart & Roth, 2007) and the desire for autonomy (Rauch & Frese, 2005). Finally, they are often passionately committed to their new ventures (Cardon, Wincent, Sing, & Drnovsek, 2009).

These characteristics combine to predict that entrepreneurs who are especially optimistic will also have a belief in their own abilities (self-efficacy) and will be more inclined to "go it alone" (achievement, autonomy, and passion) and will therefore be less likely to rely on external funding. Entrepreneurs who are highly optimistic about their probabilities of success will actually be less likely to seek VC funding and "go it alone" as a way to maintain control of their ventures, which supports their desire for autonomy. Entrepreneurs who are able to overcome the resource constraints common to new ventures, including limited access to human and financial

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capital, a lack of legitimacy, and fewer important social network connections (Aldrich & Fiol, 1994) will help satisfy their high need for achievement. In addition, by not trading away part of their firms to outside investors, optimistic entrepreneurs will be able to capture more value from their ventures when they are successful. Instead of driving them to seek outside help, this high belief in success will instill in them an attitude that they don't need others' input to create and sustain a sustainable enterprise. Based on this line of reasoning, entrepreneurs high on optimism will obviously believe their ventures can succeed and with this belief, entrepreneurs will be less likely to seek help. Consistent with prior research on optimism and performance (Brown & Marshall, 2001), I expect a curvilinear relationship between optimism and outside funding.

More formally,

Hypothesis 1: Optimism will have a curvilinear (inverted U-shaped) relationship with external funding, such that a moderate level of optimism will lead to a higher level of external funding, but a high level of optimism will lead to less funding

In addition, collaboration with existing companies, manifested by the formation of a joint venture, will also demonstrate reliance on external parties. Highly optimistic entrepreneurs will prefer to not partner with outside companies based on their underlying belief their venture will be successful, combined with the other characteristics of entrepreneurs discussed above.

Similarly, I argue,

Hypothesis 2: Optimism will have a curvilinear (inverted U-shaped) relationship with joint ventures, such that a moderate level of optimism will lead to joint ventures, but a high level of optimism will lead to no joint ventures

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To this point in the paper, I have argued entrepreneurs who are highly optimistic about the success of their ventures will turn down opportunities for external funding and joint venture partnerships. Now, however, I turn my attention to the performance implications of highly optimistic entrepreneurs, some of which has been explored in prior research.

Extant research examining the performance implications of entrepreneurial optimism has shown somewhat mixed results. Brown and colleagues (2001) found a curvilinear relationship, where a medium amount of optimism positively influenced performance, but a high level of optimism decreased performance. Similarly, Baron and colleagues (2011) also found such a relationship between “positive affect” and performance, measured both in terms of the number of innovations and general revenue growth. Other studies found only a negative relationship with performance (e.g. Hmieleski & Baron, 2009), arguing that because entrepreneurs are generally more optimistic to begin with, their levels of optimism are beyond the inflection point where optimism might have a positive impact on performance.

Some studies, however, have demonstrated a positive relationship between optimism and performance, measured by new venture growth. Baum & Locke (2004) found a direct effect between self-efficacy (a similar term to optimism) and performance, and Baum and colleagues (2001) showed how high self-efficacy lead to an increase in performance, as moderated by motivation. Even though these studies used different terminology than used here, they do identify how an entrepreneur’s feelings about the success of their ventures can help improve performance. Similarly, I predict entrepreneurs who have very high levels of optimism about their ventures will have higher levels of performance.

Entrepreneurship is inherently a risky endeavor, mostly because a new venture, including the technology around which the new business is formed, is new or unproven. Particularly in

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these cases, the entrepreneur is in a position to know the most about the workings, viability, and potential of the new technology. This creates a potential moral hazard issue, as entrepreneurs don't want to share their "secret sauce" or detailed information about their technology, which can be the very foundation of their competitive advantage, yet the value and potential of the technology cannot be adequately assessed by outsiders unless this information is disclosed.

This situation of asymmetric information has implications for optimism and performance. If the entrepreneur – who has the most "inside" information or knowledge about the underlying technology of the venture – is only moderately optimistic about its likelihood of success, I would expect a lower level of performance, because their confidence is based on a higher level of understanding about the potential for the venture. However, if the entrepreneur is especially optimistic about the success of the venture, I would expect a higher level of performance because of the intimate knowledge possessed by the entrepreneur that leads to higher optimism. This belief, then, becomes a "self-fulfilling prophesy" as entrepreneurs who are especially optimistic about their chances of success actually experience higher levels of performance. As such, I predict the following:

Hypothesis 3: Optimism will have a curvilinear (U-shaped) relationship with performance, such that a medium level of optimism will lead to lower performance, but a high level of optimism will lead to higher performance

Although optimism is predicted to have an effect on the receipt of external funding, entering into JV partnerships, and performance, this impact may not be equal over time. Even though entrepreneurial optimism has been described as a personality trait and therefore relatively stable over time, its influence on certain outcomes may deteriorate as time goes on. Recent scholarly attention has been paid to temporary effects of common management topics. For example, the concept of "sustainable competitive advantage" was recently questioned (see

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D'Aveni, Dagnino, & Smith, 2010) and the especially turbulent nature of high-technology industries has long-since been examined as an environment that is constantly changing and therefore hard to predict and to manage (e.g. Christensen, 1997; D'Aveni, 1994). Empirically, Sampson (2005) demonstrated how experience has declining effects on performance outcomes in R&D alliances, and Livengood (2010) examined the impact of discourse surrounding the novelty of new product introductions in the cell phone industry, showing the effect of novelty was strongest on handset sales immediately after first being mentioned, but declined thereafter.

Similarly, the possibility exists that the strength of entrepreneurial optimism may decline over time, a topic that has not been addressed in extant literature. Earlier, it was predicted a high level of optimism would decrease the likelihood of entrepreneurs to seek outside help, both in terms of VC investments and JV partnerships. However, as time goes on, the confidence and belief in “going it alone” may not be as strong and entrepreneurs may in turn seek outside help. In addition, the venture may be in a stronger position to get a higher valuation from outside investors and be in a better position to guard and protects its intellectual property, thereby reducing the incentive to continue operations without external help. With regards to performance, I would expect the impact of information asymmetry and the advantages of proprietary knowledge to lose its effect, as technological changes catch up and erode knowledge advantages. As such, I predict the following:

Hypothesis 4: Optimism will have a diminishing effect, such that optimism will have a significant impact on a) VC funding, b) JV partnerships, and c) performance, but that these effects will be decline over time

Empirical Analysis

Data were collected in conjunction with the Advanced Technology Program (ATP) from the National Institute of Standards and Technology (NIST), whose stated mission is, “To

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accelerate the development of innovative technologies that benefit society through partnerships with the private sector.” (http://www.atp.nist.gov/eao/brs_surveys.htm) Award recipients are early-stage new ventures with limited financial history or resources. Entrepreneurs who applied for an ATP award from 1993 and beyond completed surveys at several points during their life cycles: a baseline report when they are initially accepted, anniversary reports for each year they are in the program, and a closeout report when the program concludes (which depends on the particular award). This longitudinal survey data allows me to examine psychological constructs such as entrepreneurial optimism and to explore its impact on various firm-level outcomes. The unit of analysis is at the firm level, with annual variables taken from the surveys conducted by the NIST.

For this study, three dependent variables were examined: *VC Funding* (the natural logarithm of a continuous value measured from the closeout report for each firm as the total amount of funding since being accepted as an ATP award recipient), *Joint Venture* (a dichotomous variable taken from the closeout report indicating whether the firm entered into a joint venture since being accepted as an ATP award recipient), and *Performance* (the natural logarithm of a continuous value measured from the closeout report for each firm as the total amount of sales since being accepted as an ATP award recipient). To examine the effects of time on these measures, values of the variables were taken from an “anniversary report” completed by the entrepreneurs while they were involved with the ATP program. Although the entrepreneurs completed data on a quarterly basis, to reduce the complexity of an excessive amount of proximate measures, analysis was done on an annual basis.

The main independent variable is *Entrepreneurial Optimism*, which was measured as a continuous value captured from the baseline report as the goal for the expected life cycle of the

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product created from the underlying technology. A higher value of this measure demonstrates the belief of the entrepreneur that the technology developed in the venture will lead to a longer life cycle, thus indicating an optimistic outlook. This value was squared and that term was used as an additional independent variable to measure a higher degree of optimism.

To help reduce the impact of inter-firm differences, *Net Worth* (a proxy for performance and overall financial strength), *Scientists' Salaries* (a categorical variable with ranges in salaries, used as a measure of investment in research and development), *Employees* (an indicator of size), and *Quarter* (time) were used as control variables. For models that examined *Performance* as a dependent variable, *VC Funding* was also included as an additional control variable.

All variables of interest were standardized (other than the binary variable for *JV Partnerships*) and ordinary-least squared regression was used to examine for Hypotheses 1, 3 and 4. For Hypothesis 2, since the dependent variable is dichotomous, probit regression with robust standard errors was used.

Results

Table 1 shows the summary statistics and correlation matrix for the variables included in this study. Table 2 presents the results from the analysis, which demonstrates support for the majority of the hypothesized relationships. Models 1, 6, and 10 show the results for the various dependent variables, with only control variables entered in to the regression. Model 2 presents the results for Hypothesis 1, which argued for a curvilinear (inverted U-shaped) relationship between entrepreneurial optimism and the level of external funding. Results suggest that indeed such a relationship exists; for a moderate level of optimism, entrepreneurs did receive more external funding ($b=2.49, p<.05$), but at higher levels of optimism, this relationship became negative ($b=-2.75, p<.01$). Model 7 shows the results that for Hypothesis 2, which argued for a

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similar relationship between optimism and whether entrepreneurs entered in to joint ventures, also supported this relationship; for a moderate level of optimism, entrepreneurs did enter into joint venture partnerships ($b=4.39$, $p<.001$), but at higher levels of optimism, this relationship became negative ($b=-3.67$, $p<.001$). Model 11 highlights the results for Hypothesis 3, which predicted a curvilinear relationship between optimism and performance, which was not supported.

For Hypothesis 4, these effects were predicted to diminish over time. To do so, the annual reports for each firm were obtained and the dependent variables of interest were calculated for each year (presented quarterly) the data was reported for the firms initially in the study. Models 3, 4, and 5 show the results from the different time periods for VC investment. For Hypothesis 4a (VC investment), the significant relationships found in the analysis above were not found in the subsequent years, indicating the effects of optimism did diminish over time, thereby supporting the time hypothesis. Models 8, 9, and 10 show the results from the different time periods for JV partnerships. For Hypothesis 4b (JV partnerships), the proposed significant relationships did not completely go away like the other dependent variables, but the significant relationship was not as strong, thereby also supporting the hypothesis. Results from ANOVA showed these subsequent relationships were statistically significantly different from prior periods, thus supporting the time hypothesis for JV partnerships as well. Models 12, 13, and 14 show the results from the different time periods for performance. For Hypothesis 4c (Performance), even though the general hypothesis above was not supported, a closer look by year showed different results. In time 1, the analysis indicated that for moderate levels of optimism, performance was negative ($b=-2.76$, $p<.01$), but for high levels of optimism, performance was actually positive ($b=3.24$, $p<.01$). Similar to VC funding above, this

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significant relationship lost its significance in subsequent periods, also supporting the time hypothesis.

Discussion

In this paper, a somewhat contrarian approach to extant research was taken by arguing that instead of leading entrepreneurs to seek for outside help for their promising venture, entrepreneurial optimism will actually persuade them to “go it alone” and build the venture based on internal resources. In addition, highly optimistic entrepreneurs was argued to be more successful, which outcome has been debated in prior literature, and that the above relationships would diminish over time. Findings generally support the hypotheses that highly optimistic entrepreneurs will accept less external funding from venture capitalists and will enter into fewer joint venture partnerships. Further, highly optimistic entrepreneurs were shown to achieve higher levels of performance, but only when time is factored in. Overall, all the time hypotheses were supported, highlighting the diminishing impact of optimism on key outcomes.

Results from this analysis sheds light on how a cognitive concept like entrepreneurial optimism might influence behavior in early-stage ventures. Although many researchers and instructors of the entrepreneurial process suggest entrepreneurs seek external help by means of funding and/or joint ventures, this study sheds light on what factors might influence entrepreneurs to shy away from such opportunities and instead go it alone. More importantly, results show that entrepreneurs who are highly optimistic can also be successful in the short term. This is in stark contrast to earlier studies of optimism and performance and may unlock opportunities to explore under what conditions similar conditions exist for highly optimistic entrepreneurs to be successful.

Limitations and Future Directions

Although the proprietary data used in this study allowed me to examine early-stage ventures on a longitudinal basis, which is often very difficult to obtain, no control over the survey design, data collection, and maintenance was possible. Professional researchers were involved in these activities, but not being able to include measures validated by prior studies limited the inferences I was able to make regarding the constructs explored here. For example, although prior research has used well-grounded measures for self-efficacy, optimism, and performance, I instead inferred these concepts from the available data. In addition, the data came from self-reports by the entrepreneurs themselves, and due to the confidential nature of the data, I was not able to triangulate or verify the performance of the ventures. However, because the ventures in the study were already accepted into the ATP, the motivation for social desirability was decreased.

In addition, because the data were drawn from entrepreneurs who were recipients of the ATP award, this was a particularly appropriate setting to study optimism. Receiving such an award is a signal of legitimacy, as high-risk – but only highly promising – technologies are selected for this award. This award will both attract venture capital investment and joint venture suitors, increasing the demand and potential attractiveness of such external help. However, this award will also instill in the entrepreneurs a higher sense of confidence – or optimism – that their ventures will be successful. It is from this latter point that the hypotheses were derived, and the results were supportive of such an assumption. Further research is needed to compare entrepreneurial ventures against a total population to see how the differences in optimism might be manifest, although entrepreneurs are generally more optimistic to begin with.

Conclusion

Although the results presented here are preliminary, they are the first to my knowledge to directly link entrepreneurial optimism to seeking external help, which highlights the importance of cognitive factors in decision making for new ventures. In addition, by tying this analysis to actual firm performance, a more directive conclusion can be drawn regarding whether or not entrepreneurs *should* be overly optimistic. Because the results are mostly curvilinear in nature, further analysis that investigates additional cognitive and behavioral factors that will influence the relationships explored here is needed. In addition, examining how these relationships ultimately impact new venture performance will benefit researchers and practitioners alike.

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Table 1: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max	1	2	3	4	5	6	7	8
1 Performance (logged)	286	10.53	3.86	1.386294	19.87483	1							
2 VC Investment (logged)	498	10.43	3.04	2.302585	19.00869	.1571*	1						
3 JV Partnership	1232	0.84	0.37	0.00	1.00	0.03	-.0895	1					
4 Entrepreneurial Optimism	1232	4.28	12.13	0	19.99	.2083*	-.0081	.1379*	1				
5 Net Worth (logged)	1232	1695935	6230923.00	-1267859	4.52e+.07	.2058*	0.05	-.2519*	0.04	1			
6 Scientists' Salaries	1232	4.12	0.67	3	6	-.1622*	-.2320*	-.0686	-.0174	-.1419*	1		
7 Employees	1232	154	210	3	3000	0.07	-.0516	0.03	-.0114	-.0167	0.09	1	
8 Quarter	1232	N/A	N/A	N/A	N/A	-0.02	.1639*	.0896*	-.1058*	0.02	2.339*	0.0107	1

* significant at p < .05

Table 2: Results from hypothesis testing

	Model 1 Controls	Model 2 DV: VC Investment	Model 3 DV: VC t1	Model 4 DV: VC t2	Model 5 DV: VC t3	Model 6 Controls	Model 7 DV: JV	Model 8 DV: JV t1	Model 9 DV: JV t2	Model 10 Controls	Model 11 DV: Performance	Model 12 DV: Perf t1	Model 13 DV: Perf t2	Model 14 DV: Perf t3
Net Worth (logged)	-0.080 (0.047)	-0.089 (0.048)	0.003 (0.058)	0.050 (0.058)	-.244** (0.082)	0.044 (0.045)	0.035 (0.046)	-0.0307525 (0.070)	0.119 (0.083)	0.410*** (0.048)	0.349*** (0.052)	0.737*** (0.037)	.768*** (0.047)	.900*** (0.089)
Scientists' Salaries	-0.306*** (0.052)	-0.318*** (0.052)	0.132 (0.068)	.196** (0.067)	-0.016 (0.083)	-0.029 (0.045)	-0.013 (0.046)	-0.099 (0.071)	-0.002 (0.077)	-0.104 (0.056)	-0.150** (0.057)	-0.056 (0.042)	-0.107 (0.056)	-0.123 (0.092)
Employees	-0.603 (0.775)	-0.263 (1.003)	2.432 (3.248)	1.582 (3.299)	1.276 (3.558)	2.755 (2.059)	3.243 (2.069)	9.013** (3.182)	0.655 (0.778)	1.254 (2.668)	1.817 (2.669)	-0.059 (0.608)	-14.874*** (2.781)	1.280 (2.855)
Quarter	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
VC Investment (logged)									0.021 (0.015)		-0.001 (0.170)	-0.013 (0.012)	0.008 (0.014)	.086** (0.028)
Entrepreneurial Optimism		0.410* (0.165)	0.400* (0.183)	0.349 (0.186)	0.289 (0.640)		0.997*** (0.227)	0.657* (0.297)	1.889* (0.781)		1.056 (1.648)	-0.408** (0.147)	0.226 (0.126)	0.346 (0.923)
Ent. Optimism Squared		-0.424** (0.154)	-.306* (0.133)	-0.289 (0.168)	-0.165 (2.051)		-0.775*** (0.211)	-.614* (0.276)	-1.321* (0.633)		0.060 (0.142)	0.411** (0.127)	-0.169 (0.111)	-6.008 (5.518)
Constant	0.143* (0.057)	0.168** (0.057)	0.002 (0.116)	0.108 (0.114)	0.198 (0.278)	1.113*** (0.084)	1.215*** (0.088)	1.110*** (0.129)	1.315*** (0.220)	-0.262 (0.182)	-0.108 (0.191)	0.044 (0.121)	-.542*** (0.145)	-1.873* (0.860)
R-squared	0.071	0.085	0.081	0.043	0.058	0.019	0.032	0.024	0.083	0.264	0.303	0.622	0.612	0.588
Observations	498	498	498	326	318	1232	1232	1232	516	286	286	286	218	119

Standard errors in parentheses

* significant at p < .05; ** significant at p < .01; *** significant at p < .001