

ABSTRACT

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ENTREPRENEURIAL SELF-EFFICACY AND
THE SUCCESS OF SUBSEQUENT VENTURE
STARTUP AFTER FAILURE

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Everyone experiences failure at some point in their lifetime. Entrepreneurs, especially, have a high incidence of failure, with estimates that over sixty percent fail within six years. Yet, a high percentage of failed entrepreneurs recover and persevere to start another business. Sometimes, they even become “serial entrepreneurs” who start many businesses. How do entrepreneurs recover from failure and have success? This research focuses on the failed entrepreneur, and I investigate aspects of how and why some failed entrepreneurs recover and start a new business. My research focuses on characteristics of the failed entrepreneurs themselves, and how certain attributes might differentiate between failed entrepreneurs who recover successfully versus those who do not. Based upon fundamental theories of human behavior and recent inquiries that have influenced the entrepreneurship literature, I draw upon research about entrepreneurs’ personal

competencies that stand out as predictors of venture persistence and success, specifically, (1) domain-specific self-efficacy (2) emotion regulation, (3) practical intelligence, and (4) self-leadership, to propose a path to recovery when failure occurs. I suggest that these areas of research may enhance our knowledge of how and why failed entrepreneurs recover from failure. In addition, I investigate how characteristics of the immediate context or environment support or discourage subsequent startup. I interview and survey failed entrepreneurs, beginning with a list of firms from a Bay Area business consulting firm that helps failed companies “work out” of their business. Other contact sources include small business development centers, personal contacts, university entrepreneurship centers, and two populations of healthcare workers in the southern United States. Results of this study include entrepreneurial self-efficacy fully mediating the effects of both practical intelligence and emotion regulation on subsequent venture success, as well as partial mediation of support from social contacts on success. Theoretical and practical implications are discussed. Although research has been conducted on future success of *successful* entrepreneurs, as far as I can determine, no other academic researcher has attempted to understand and empirically demonstrate the future success of *failed* entrepreneurs.

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SUBSEQUENT VENTURE STARTUP AFTER FAILURE**

By

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Dedication

To Rebecca, my precious wife, whose love, faith, and never-ending support have inspired me to reach higher than I believed was possible. I love you.

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I owe a great debt to many people who have helped me along the road to the completion of my Ph.D. First and foremost, I thank my dear wife Rebecca, who has sacrificed more than should be asked of any spouse. Without her help and support this dissertation and degree would not have been realized. She consistently stood by as my greatest cheerleader, offering comfort on the bleak days and celebrating the milestones. I express love and appreciation for my children, Hannah, Peter, Joseph, Eden, and Miriam, who have managed phenomenally with an often stressed and mostly absent father. My parents love and support have been a sustaining influence in my life, and especially the friendship and mentorship of my father, Wayne Boss, whose encouragement and example started me on this path.

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department of the Robert H. Smith School of Business, the staff, and my fellow doctoral students who accompanied me on this journey.

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Chapter 1: Introduction

You may have a fresh start any moment you choose, for this thing that we call 'failure' is not the falling down, but the staying down.
~ Mary Pickford

Everyone experiences failure. Entrepreneurs, especially, are prone to failure, with one source estimating that twenty four percent of all new entrepreneurial ventures fail within the first two years and sixty three percent fail within six years (Timmons & Spinelli, 2006). Some may go so far as to say that “entrepreneur” and “failure” are two sides of the same coin. Schiller and Crewson (1997) corroborate this failure rate with findings that the typical new company lasts fewer than three years, and seldom, if ever, generates a profit. The Bureau of Labor Statistics note that beyond those who quit their current employment to start new ventures, “almost 2 million workers can be described as ‘second job entrepreneurs’ who have primary positions in wage-and-salary jobs and hold second jobs as self-employed workers in unincorporated businesses” (Gruenert, 1999, p. 18). Failures of these venture types are likely not included in the above statistics. Without a doubt, the high failure rate of new entrepreneurial ventures can be intimidating for those hoping for success.

Not everyone responds to failure in the same way. Some allow failure to control their actions, while others rapidly get beyond the guilt and shame that can be associated with failure. Some endure the momentary sting of embarrassment and grief, and quickly move on, while others languish and allow failure to affect their self-esteem and confidence. In short, after experiencing failure, some individuals move toward recovery, while others find themselves in a paralysis or downward spiral. This particularly pertains to entrepreneurs. Some fail and are so shattered that

they never attempt to start a business again. But more and more we hear of entrepreneurs who fail and then start a new business, or those who leave a successful business to begin another one. And the record shows that a remarkable percentage of failed entrepreneurs actually succeed in starting a second business (cf. Hyytenen & Ilmakunnas, 2007). In fact, our culture has increasingly supported, and in some cases celebrated, failure almost to the point of zeitgeist, or, the spirit of the times (Beck, 2008; Green, 2001, 2007; Manz, 2002b; Miner, Kim, Holzinger, & Haunschild, 1999; Young, 2002). Indeed, many entrepreneurs who experience both failure and success become “serial entrepreneurs” (Wright, Robbie, & Ennew, 1997). Serial entrepreneurs are those who, after spending a certain amount of time in a start-up, move on to either begin another business, or start multiple businesses.

This dissertation is about entrepreneurial failure and recovery. More importantly, it is about how entrepreneurs respond to failure, and, in particular, whether they recover sufficiently to start another venture and have success in that venture. Resilient individuals, those with the ability to move forward and thrive despite difficult experiences (Tedeschi & Calhoun, 2004), exert appropriate and dynamic self-regulation (Waugh, Fredrickson, & Taylor, 2008). To recover from failure, entrepreneurs must possess these qualities.

What is it that causes some entrepreneurs to “get back on the horse” and start another successful company, while others never attempt another startup or are unsuccessful in subsequent startups? This question is the special focus of this research. Specifically, I investigate those personal characteristics that drive an entrepreneur to begin another successful business after failure. Much has been written

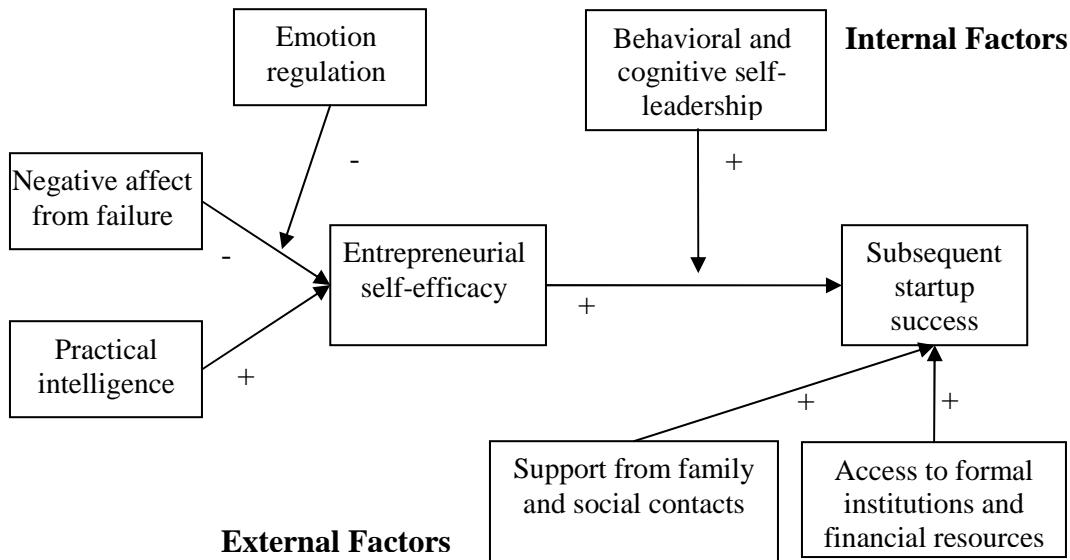
regarding the personal characteristics of entrepreneurs (Carland, Carland, & Stewart, 2000; Hyytinen & Ilmakunnas, 2007), what motivates them to start a business (Shane, Locke, & Collins, 2003; Sormani, 2005), what makes them successful (Baum, Frese, Baron, & Katz, 2007), and what internal forces exist to drive them to persevere (Baum, 1994). However there are multiple characteristics beyond what has already been studied that may contribute, not only to start-up, but to successful start-up after having experienced failure.

Major Purpose of Current Study

The purpose of this research is to develop first, a theoretical perspective and second, an empirical investigation of how a combination of internal and external factors influence the experience of personal failure toward recovery. An examination of internal entrepreneurial factors answers the call by Michael Frese and colleagues (Frese & de Kruif, 2000; Rauch & Frese, 2007) for a renewed investigation of the individual characteristics possessed by the founder of the enterprise. The model shown in Figure 1 summarizes my beginning theoretical analysis of factors influencing whether failed entrepreneurs “recover” and begin a second successful business startup, in other words, the development of a theory of recovery from failure. Specifically, in this study I aim to extend the previous line of research on the characteristics of entrepreneurs by examining how individual differences influence the ongoing entrepreneurial life-cycle.

Figure 1. Model of Proposed Research: Internal and External Factors

Influencing Subsequent Startup Success of Failed Entrepreneurs



Overarching theories of human behavior suggest that personal characteristics are linked to behavior and performance. Maier (1955) suggested that job performance is a multiplicative function of ability and motivation, a theory that was later expanded to include personality traits (Hollenbeck & Whitener, 1988). Indeed Bandura (1986) proposed that personal traits, behavior, and the environment interact in a triadic causality. Moreover, Endler (1983) postulated that personality and situation interact to influence behavior. Shaver and Scott (1991) extend this line of research to the entrepreneur, proposing that relatively enduring personal attributes might effect entrepreneurial activity. Based upon this, I propose that there are personal characteristics that may contribute to the subsequent startup and recovery of failed entrepreneurs. To be comprehensive in terms of well-studied concepts and theories that relate to failure and entrepreneurial perseverance and resilience, I chose areas

that have been theorized as having a potential impact on entrepreneurial endeavors. I propose the characteristics that differentiate success of those who begin another business after failure include degree of negative affect (emotion), entrepreneurial self-efficacy (reflection of motivation), emotion regulation (personality), practical intelligence (ability/intelligence), and self-leadership (ability/behavior). I also propose that external factors such as family and social contact support as well as support from formal institutions and financial resources contribute to subsequent startup success of failed entrepreneurs.

Potential Contributions

This dissertation provides a number of important contributions to our understanding of entrepreneurship. Understanding the personal internal and external characteristics that enable learning and recovery from venture failure can improve the social and economic welfare of entrepreneurs (Baum, Locke, & Smith, 2001) and their financiers (D. A. Shepherd, 1999). Investments may be preserved and entrepreneurs' confidence supported with these findings. Further, entrepreneurs who recover and begin another venture may well make a positive contribution to society. Shepherd (2003) posited that the learning acquired through business failure can benefit society as a whole by applying that knowledge to subsequent businesses. Teachers of entrepreneurship may adopt my findings to guide both nascent and seasoned entrepreneurs, and venture capitalists may draw upon the results to enhance their investment criteria. Aldrich (1999) extended the importance of understanding entrepreneurs' failure and success to nations. He noted that entrepreneurship is the economic mechanism through which inefficiencies in national economies are

identified and mitigated through innovation. Moreover, my findings may help those who design economic development programs to be more aware of, and sensitive to, the personal characteristics of the clientele they serve. And lastly, the effects of venture success are extended as established competitors improve products and processes for the benefit of all.

Inasmuch as entrepreneurship is such a powerful economic force, it is important to help those who fail to recover and get back on their feet and find renewed success. Those who have failed already have experience, which can be the best teacher. Many of the mistakes that first-time entrepreneurs make will have become lessons learned, hopefully never to be repeated. To understand the dynamics and personal characteristics of those who have failed, started a new venture, and then become successful would be a help to many.

Overview of Chapters

In Chapter 2 of this dissertation, I describe the theoretical background, provide a literature review, and develop hypotheses by which I will test my model. I will first describe entrepreneurial failure and subsequent entrepreneurial startup. Brief mention will be made of serial entrepreneurship. This will be followed by a description of predictor variables, including entrepreneurial self-efficacy, emotion regulation, practical intelligence, and self-leadership, as well as external factors such as support from family and social contacts, and support from formal institutions and financial resources. I develop hypotheses to describe how the predictor variables influence an entrepreneur's ability and likelihood to start a new business.

In Chapter 3, I describe the research methodology. This includes the research sample and data collection procedures and measures. Chapter 4 provides the analytic procedures used to test my hypotheses. It also includes the results of the proposed dissertation model and a possible alternative model. Finally, in Chapter 5, I conclude the dissertation with a discussion of the findings, theoretical and practical implications, study limitations and areas for future research.

In summary, to understand what factors influence entrepreneurs to pick up the pieces after failure and start a new venture that is successful, I propose an examination of both internal and external variables that are likely to have an effect on subsequent venture success; that is, entrepreneurial self-efficacy, emotion regulation, practical intelligence, and self-leadership capability, as well as support from family, social contacts, formal institutions, and financial resources. The purpose of this dissertation, therefore, is to study failed entrepreneurs, and to uncover behavioral, cognitive, and emotional influences on recovery.

Chapter 2: Theoretical Background, Literature Review, and Hypotheses

To live is to experience failure. There appears to be no way around it. Sooner or later, everyone fails. Although some forms of failure go unnoticed by those around us, such as scoring poorly on a school exam or indulging in a donut while on a self-imposed diet, other failures are larger and more public, like losing a political election or flunking out of school. Other examples of failure hit close to home, such as having an “exceptionally well-written and brilliant manuscript” rejected by three anonymous reviewers. Entrepreneurial failure typically lies in the public domain of failure, after financial resources have been committed and utilized, employee lives have been altered from being hired and then let go, and the disappearance of a public face or going concern. Entrepreneurial failure can be devastating on multiple levels because founders are intimately involved in the creation and development of their businesses.

Failure appears at all of the stages of entrepreneurship and across industry domains, which complicates the study of failure and recovery among entrepreneurs. To date there has been little agreement among scholars regarding an overall definition of entrepreneurship with descriptions including characteristics such as independence, growth, and fame or renown (Aldrich & Baker, 1997; Busenitz, West, Shepherd, Nelson, Chandler, & Zacharakis, 2003). However, similar to Zhao and Seibert’s (2006) conceptualization of entrepreneur, for this research I define the entrepreneur as the founder or owner of a small business, whose principal purpose is growth.

Many would agree that failure is not a final resting place, but simply a stepping stone toward success, and that the only true failure is to not try again. This may be difficult for a founder to hear when facing the threat of failure. However,

anecdotally, we know this to be true as “time heals all wounds.” Ideally, a career or business failure will influence individuals to transition from what is likely a poor-fitting vocation to a better-fitting one. Quotations, anecdotes, and entire books (Green, 2001; Manz, 2002a; Young, 2002) catalogue how failure can be the seed of success. Winston Churchill observed that “success consists of going from failure to failure without loss of enthusiasm.” One classic example of this is found in the American poet and four-time Pulitzer Prize winner Robert Frost who early in life dropped out of both Harvard University and Dartmouth College, and failed at both farming and teaching (Green, 2007). On the one hand, there seems to be a consensus that failure is not a permanent state. On the other, no roadmap exists that shows how to actually germinate those seeds of success and help them sprout. In the case of entrepreneurial failure, I believe that a combination of variables (Endler, 1983; Hollenbeck & Whitener, 1988; Maier, 1955) including motivation (entrepreneurial self-efficacy), personality (emotion regulation), and ability (practical intelligence and self-leadership) provide a framework from which to begin.

The factors which are likely to influence this re-start behavior separate into two categories. The first category pertains to internal characteristics, which are attributes of the entrepreneur. In particular, I hypothesize that the road to “recovery,” or subsequent startup success, includes entrepreneurial self-efficacy – how an entrepreneur sees himself or herself at a basic fundamental level, as well as practical intelligence – the tacit knowledge that entrepreneurs develop in order to deal with the multidimensional tasks of starting up a business. Additionally, I hypothesize that these relationships are moderated by two sub-categories of internal characteristics,

namely, emotion regulation – how well an entrepreneur is capable of regulating his/her own emotions, and self-leadership – the behaviors and cognitions that an entrepreneur uses for self-regulation of their own thoughts and behavior.

The second main category likely to influence “recovery” or second startup success is external factors, or, the support from the immediate context/environment surrounding the failed entrepreneur. I hypothesize, for example, that support from family, social contacts, formal institutions, and financial resource institutions, can influence the subsequent startup’s success.

Entrepreneurial Failure

An extraordinary number of people are actively involved in starting a business at any given time (close to eleven percent of the U.S. population—see The Global Entrepreneurship Monitor, Babson College and the London Business School, May 2004, as cited in Timmons & Spinelli, 2006 p. 84). However, an astonishing number fail. Industry failure rates of startups range from 36.8 percent in real estate, to 55.2 percent for the software and services sector of the technology industry (BizMiner 2002 Startup Business Risk Index: Major Industry Report, cited in Timmons & Spinelli, 2006, p. 85). Precise figures are not completely known regarding failure and success rates because government, business mortality statisticians, and other researchers measure incongruent data. However, all agree that failure seems more to be the rule, rather than the exception (Timmons & Spinelli, 2006).

Those who invest in ventures as well as entrepreneurs who fail assert that failure can occur for a multitude of reasons, among which are poor management skills, ineffective strategy, inadequate capitalization, bad market conditions

(Zacharakis, Meyer, & DeCastro, 1999) and insufficient experience (D. A. Shepherd, 2003).

Many people think of bankruptcy when they think of failure (D. A. Shepherd, 2003). However, there are many different forms of failure, of which bankruptcy is only one. Most entrepreneurs who fail simply abandon their venture and walk away—they just stop doing business. Thus abandonment appears to be more the norm than formally ceasing operations. However, sale below valuation, a split of the business, sale of assets, or being acquired under the right circumstances can each be designated as failure as well. Additionally, there are many who should have closed their doors but have not yet done so, and are what some call the “walking dead.” Shepherd (2003, p. 318) defines business failure as “when a fall in revenues and/or a rise in expenses are of such a magnitude that the firm becomes insolvent and is unable to attract new debt or equity funding; consequently it cannot continue to operate under the current ownership and management.” I define failure as: a business – formerly in existence for at least one year with revenue and employees – which has subsequently ceased to employ others and has experienced liquidated assets. Failure, as explained here, is a boundary condition to this study; it is within the framework of failure that I explore variables that contribute to subsequent startup success.

Negative Affect from Failure

When an entrepreneur fails, they are likely to feel a wide range of emotions, from anger and resentment to frustration. The dynamics of loss of work are similar to those of grieving (Amundson & Borgen, 1982) with individuals first going through denial, then anger, followed by bargaining, depression, and finally acceptance. Given

the intensely personal nature of being self-employed, it is not difficult to extend the job loss research to the failure of a business. Entrepreneurship researcher Robert Baron (2008) suggested that feelings and moods that entrepreneurs experience influence certain aspects of their cognition and behavior. Similarly, Dean Shepherd (2003, p. 319) explained in his entrepreneurship research that “...business failure likely represents a personal loss, which, in turn, generates a negative emotional response.” Certainly, one of the greatest differences from job loss is that venture failure often involves the loss of personal assets as well as the assets of beloved others. I would therefore expect the intensity of negative emotion to be high among failed entrepreneurs. However, not all founders who have lost their business will necessarily feel the same way about their failure; in other words, they will differ in their intensity of negative affect and grief.

Entrepreneurial Self-efficacy

An individual characteristic that may be affected by the degree of failure, yet can in turn affect recovery, is self-efficacy. Self-efficacy refers to a person’s judgment about how well he/she can execute the course of action required to deal with future situations (Bandura, 1986; Bandura & Locke, 2003; Judge, Locke, & Durham, 1997). Self-efficacy can influence an individual’s thought patterns which can then affect performance by either enhancing it or undermining it (Bandura, 1990). The concept of self-efficacy can indicate feelings of capability. It is less concerned with the number of cognitive, social, emotional, and behavioral skills a person has, and more with what an individual believes can be done with what is available under a variety of circumstances (Bandura, 1997).

Bandura (1986) recommended that domain-specific self-efficacy measures be developed, thus increasing predictive power (Gist, 1987). Some may argue that situationally specific self-efficacy and actually having a particular skill or ability are one and the same. Although I expect that the two would be highly correlated, there are key differences between the two concepts. Self-efficacy measures the degree of confidence that a person has in performing skills, rather than the possession of some type of skill. It is possible to have ability with regard to a skill and yet possess little confidence, just like it is possible to have confidence with no skill. An oversimplified example can be found in the case of swimming (see Table 1). Those with low ability and low confidence are like the non-swimmer who can't swim and does not believe they can make it across the pool. On the other hand, my 4-year-old has extremely high levels of confidence in swimming, but no ability, and as a consequence has almost drowned a number of times. A swimmer with high ability and no confidence might go swimming but will never join the swim team because people will be watching and they might fail. Finally, someone with high ability and confidence could become a swim instructor.

Table 1. Example of Ability versus Confidence in that Ability

	Low Ability	High Ability
Low Confidence	Non-swimmer	No swim team
High Confidence	4-year-old	Swim instructor

Several sets of researchers have attempted to develop situationally specific measures of self-efficacy regarding the venture creation process or what has become

known as entrepreneurial self-efficacy. Entrepreneurial self-efficacy refers to the judgments that entrepreneurs make regarding their own capability to bring about desired outcomes or to accomplish a certain level of performance (Bandura, 1986; DeNoble, Jung, & Ehrlich, 1999). Chandler and Jensen's (1992) early work looked at self-perceived entrepreneurial, managerial, and technical-functional competencies. Their measures were developed to differentiate between types of competencies that were important in the founding and success of entrepreneurs. C. C. Chen, Green, & Crick (1998) also created a entrepreneurial self-efficacy scale that attempted to differentiate entrepreneurs and non-entrepreneurs. Using two studies, they showed that entrepreneurial self-efficacy has the potential to be a distinct characteristic of the entrepreneur. More recently, DeNoble, Jung, and Ehrlich (1999) refined the entrepreneurial self-efficacy construct to incorporate a more comprehensive set of demands that the startup entrepreneur faces. Using an inductive approach, they interviewed entrepreneurs regarding critical issues they had dealt with in becoming a successful entrepreneur. Comparing the entrepreneurs' comments to relevant literature, they generated a list of 35 skills and behaviors and administered a Q-sort to local entrepreneurs. Based on these results, they developed a six-factor scale that includes subscales of entrepreneurial self-efficacy regarding (1) defining core purpose, (2) developing new product and market opportunities, (3) developing critical human resources, (4) initiating investor relationships, (5) building an innovative environment, and (6) coping with unexpected challenges. It is important to note that these dimensions do not include *all* the activities or skills of business founders, but instead represent a set of skills that "uniquely reside in the domain of entrepreneurs".

rather than a combination of entrepreneurs and managers” (DeNoble et al., 1999, p. 9). Each of the sub-factors is explained in more detail below.

Defining core purpose helps the entrepreneur focus and refine the vision that the new venture will need to attract investors and human resources. Low self-efficacy in defining and communicating core purpose and vision would make it difficult to begin a new venture (DeNoble et al., 1999). Baum and Locke (2004) found that better communication of vision from the entrepreneur/CEO of a company resulted in greater venture growth, and Baum et al. (2001) found that self-efficacy was the strongest predictor of new venture growth among an array of traits, KSAs, and organization concepts.

Developing new product and market opportunities, a concept similar to what some researchers call “opportunity recognition” (R. A. Baron & Shane, 2008), is an important skill for those considering starting a new business (DeNoble et al., 1999). This is a well known and researched entrepreneurial competency, and it is important that entrepreneurs have confidence that their new venture is needed by, and well positioned in, the market it seeks to serve.

DeNoble et al. (1999, p. 9) identify *building an innovative environment* as an “individual’s capability to encourage others to try new ideas, initiate novel actions, and take responsibility for their own outcomes.” In entrepreneurship, a founder must feel capable of establishing a working environment that allows for and encourages innovation from the inception of the venture, an activity DeNoble and colleagues identify as very different from introducing innovation in an established corporate setting.

Recruiting and holding on to key employees is an ability that those starting a new venture must feel confident with. *Developing critical human resources* and involving significant others in the creation of a new venture is considered an essential component in the new venture process (DeNoble et al., 1999).

Initiating investor relationships involves breaking into and maintaining a network with those who have connections with investors. Using these skills effectively has been identified as being very demanding and time consuming (DeNoble et al., 1999), yet very important in the acquisition of needed capital to finance a new venture (Ehrlich, DeNoble, Moore, & Weaver, 1994).

Finally, confidence in *coping with unexpected challenges* is critical while attempting to navigate the ambiguous and uncertain terrain that makes up the new venture landscape, characterized by rejection, lack of information, shifts in strategy, and increased competitive actions (DeNoble et al., 1999; Kuemmerle, 2002). Challenges arise with customer requirements, fluctuations in market conditions, feedback from potential investors, and many other issues.

C. C. Chen et al. (1998, p. 301) observe that entrepreneurial self-efficacy is fairly stable, but not immutable, thus allowing entrepreneurs to “derive, modify, and enhance their self-efficacy in their continuous interaction with the environment.” When an entrepreneur fails, self-efficacy can be called into question. A founder who has spent time, effort, and money working toward the startup of a new venture, only to have it not come to fruition or to see it fail after a brief period, may begin questioning their ability regarding the matter. G. Chen, Gully, and Eden (2001) noted that self-efficacy has a “spill over” effect, such that feelings of self-efficacy, whether

high or low, have a tendency to affect specific situations. In a laboratory experiment with undergraduate students, Houston (1995) found that failure feedback coupled with attributional style predicted anxiety and depression. Based on these findings I believe that events which are designated as failure and the ensuing negative affect will have an effect on the way that individuals perceive their ability to deal with future situations as shown in Figure 1. Therefore,

Hypothesis 1: Entrepreneurs' negative affect from failure of their business is inversely related to entrepreneurial self-efficacy.

Subsequent Entrepreneurial Startup, Success, and Serial Entrepreneurship

When an entrepreneur sells a business or walks away from it, or the company is acquired or goes into bankruptcy, there are three major options available regarding work, (1) find a job with another employer, (2) take time off and not work, and (3) start another business. More and more, entrepreneurs are not just starting one business, rather multiple businesses. Sometimes entrepreneurs will begin another venture only after exiting the previous venture (serial entrepreneurs), while others will attempt to have multiple businesses operating at the same time (portfolio entrepreneurs) (Clifford, 2005; Wright et al., 1997).

For those who choose to start another business, there are different ways to evaluate performance. First is to simply categorize entrepreneurs as having begun a new business or not. However, as defined above, an entrepreneur is characterized as having growth in mind as they begin a new business. To identify a startup as having been successful, the venture will have some sort of staying power in addition to showing growth. Subsequent startup success can also be measured by calculating

predicted maturity value (K. S. Smith & Smith, 2000), a process similar to a real estate appraiser who can walk into a house under construction and determine what the approximate value will be when the house is complete. A third way of looking at entrepreneurial performance is to take an overall view of the company, including company age, industry, product or process description, target market, marketing and financing plan, startup stage, sales growth and maximum sales, employee growth and maximum employees, and future vision, and evaluating the company's success.

In their meta-analysis, Judge and Bono (2001) found that self-efficacy plays a central role in performance, while Stajkovic and Luthans (2001) suggested that self-efficacy can enhance focus, direction, persistence and intensity of action. DeNoble et al. (1999) found that the situationally specific entrepreneurial self-efficacy was related to entrepreneurial action, and Baum and Bird (2010) found further support that entrepreneurial self-efficacy has a strong and positive relationship with new venture growth. Based on this, I suggest that entrepreneurial self-efficacy will also have an effect on the success of a new company after experiencing failure (see Figure 1). Therefore, I propose:

Hypothesis 2: The entrepreneurial self-efficacy of failed entrepreneurs is positively related to subsequent startup success.

Hypothesis 3: Entrepreneurial self-efficacy mediates the relationship between negative affect from failure and subsequent startup success.

Internal Factors

In addition to the mediational role of entrepreneurial self-efficacy, there are other characteristics of the entrepreneur that also have an effect on subsequent startup

success. I suggest that emotion regulation moderates the relationship between negative affect and entrepreneurial self-efficacy and that practical intelligence is a predictor of entrepreneurial self-efficacy. I also suggest that behavioral and cognitive self-leadership are moderators of the relationship between entrepreneurial self-efficacy and subsequent venture success (see Figure 1).

Emotion Regulation

The influence of emotion in decision making, negotiations, and interpersonal behavior (cf. Morris & Keltner, 2000) has gained some attention in recent years. In particular, emotion regulation or emotional self-management has been characterized as one of four branches that make up the larger construct of emotional intelligence, a much debated area of research. In the early 1990s, emotional intelligence surfaced as an important topic of study (Salovey & Mayer, 1990), springing from the combined psychological study of thought and emotion. The topic became popular to practicing managers in the mid-1990s with the publication of Daniel Goleman's book, *Emotional Intelligence* (1995), which reached world-wide best-seller status. Since that time, scholars have attempted to refine and enhance the way that emotional intelligence is conceptualized by creating new measurements and publishing articles in peer reviewed research outlets (Garnefski & Kraaij, 2006; Mayer, 2006). Emotional intelligence has also been related to job performance (Cote & Miners, 2006; Lam & Kirby, 2002).

Emotional intelligence is not without criticism. Although much has been discovered with regards to emotional intelligence, given the recent development of this area of research, it remains quite controversial. Locke (2005) noted that the

concept of emotional intelligence is so broad and inclusive that it has no intelligible meaning and is therefore an invalid concept. Additionally, Landy (2005) indicated that emotional intelligence offers little additional predictive value over concepts already studied. Nevertheless, regardless of its criticisms, numerous scholars have embraced emotional intelligence as a fruitful domain for research, and believe it deserves some attention (Cross & Travaglione, 1993; D. Shepherd, 2004).

Definition and management of emotional intelligence

With the onset of this new area of study, those involved with emotional intelligence research have not converged on a common definition of the construct (Becker, 2003; Ciarrochi, Chan, & Caputi, 2000; Landy, 2005; Mayer & Salovey, 1997). The field has such a brief history that there has been no consensus regarding definitions (Brackett & Geher, 2006). Characterizations range from the broad to the more specific, though each shares the common thread of a description of one or more aspects of personality, skills, or competencies. There are other consistent themes such as the ability to identify and express emotions, understand emotions, assimilate emotion into thought, and regulate those emotions, both positive and negative, in self and in others (Zeidner, Matthews, & Roberts, 2004).

Emotional intelligence is not only the evaluation of self-emotion, but also the evaluation of other's emotions. I refer to entrepreneurial or personal failure on an individual level, and therefore focus on emotional intelligence and emotion regulation as they are directed inwardly toward the self. To facilitate understanding of where emotion regulation, the topic of interest, fits in the broader picture, I will briefly review the work set forth by Mayer and Salovey (1997) that includes four

subcomponents or “branches” of emotional intelligence, namely, 1) accurately perceiving emotions in self and in others, 2) using emotions to facilitate thinking, 3) understanding emotional meanings, and 4) managing emotions.

The capability to accurately *perceive emotions* in the facial expression or tone of voice in others provides a critical beginning for a more advanced understanding of emotions. *Using emotions to facilitate thought*, the second area or branch of emotional intelligence, is the capacity of the emotions to enter and guide the cognitive system, prioritize thoughts, and promote thinking toward important information. Emotions convey information. Each emotion transmits its own pattern of possible messages and actions associated with those messages. A person with the ability to *understand emotional messages and meanings* is able to interpret the relationship between liking and loving, or understanding the sadness that accompanies loss. Lastly, *emotions often can be managed*. This branch of emotional intelligence indicates that it is possible to regulate and manage one’s own and others’ emotions by moderating negative emotions and enhancing pleasant ones, without exaggerating or minimizing the information they may convey (Mayer & Salovey, 1997). Inasmuch as this is the area that is most applicable for entrepreneurs to understand as they move from failure toward recovery, I will explain it in more detail.

A growing body of literature indicates that emotions can be controlled and regulated (Grandey, Fisk, & Steiner, 2005; Gross, 1998, 2002; Larsen, 2000; Tice & Bratslavsky, 2000; Williams, 2007). Emotion regulation can be defined as the processes by which individuals influence the emotions they have, when they have them, and how these emotions are experienced and expressed (Gross, 1998). Gross

noted that this emotion regulatory process can be conscious or unconscious, automatic or controlled. Emotion regulation has been categorized as antecedent-focused, occurring before an emotion has become completely active, as well as response-focused, or taking place after a particular emotion is already underway (Gross, 2002).

Antecedent-focused regulation

There are four antecedent-focused responses to approach a potential or impending emotion, each of which can be activated before an emotion is completely functional. The *first*, situation selection, or choosing situations based on the emotions they might elicit, allows an individual to avoid or move toward certain people, places, or things that have the tendency to bring out certain emotions (Gross, 1998). For example, situation selection occurs when a person chooses to stay home rather than attend a social gathering where an antagonistic competitor will be in attendance. Situation modification, a *second* emotion regulation strategy, involves altering the situation after it has been selected. Entrepreneurial founders or leaders have the power to modify situations, such as calling for a break during a meeting that has become emotional. A *third* strategy is attentional deployment, a method that involves focusing on a different aspect of the situation. A disagreement with a partner can be reinterpreted as a problem solving session. The *final* regulatory antecedent-focused response to emotion is cognitive change, in other words, deciding which of the many possible meanings will be assigned to the given situation. An idle comment can be taken as an insult, a rumor, a joke, or nothing more than an idle comment. Cognitive change addresses how one thinks about that comment. Again, entrepreneurs have

special opportunities to facilitate emotion regulation in others through the power that is inherent in their position. For example, after being in business only two years and dealing with the impending collapse of his company, FedEx founder Fred Smith held a “going out of business” *party*, rather than giving a dour announcement regarding their presumed failure (Frock, 2006).

Response-focused regulation

In contrast to anticipating emotion and acting preemptively to control or guide it, response modulation occurs after an emotional response has taken place. Gross (2002) identifies two ways that a person can engage in response-focused emotion regulation: through *reappraisal* and *suppression*. Reappraisal is looking at a potentially emotion-eliciting situation and defining it in non-emotional terms, much as an emergency room doctor would do with a severe trauma patient. Suppression is inhibiting or hiding emotion expressive behavior. For example, a person may have a tendency toward an emotional response, but will manipulate the expression of it, such as in the case of a customer service manager who is able to keep a pleasant countenance when dealing with an irate customer (Grandey & Brauburger, 2002) or an entrepreneur maintaining a composed and calm appearance when meeting with potential investors.

Emotion regulation to facilitate entrepreneurial recovery

As emotional cues are perceived, individuals have the tendency to respond in certain ways. A high level of emotional awareness through emotional intelligence allows the regulation of those emotional responses. Following the chronological model set forth by Gross (1998), if a person uses emotion regulation in the form of

situation selection before a failed event occurs, that event may never happen, or it may never be considered a failure. Taking preemptive action on a potential disaster can change the course of action, such that failure does not occur. Indeed, using a sample of high school and university students, Martin and Marsh (2003) found that fear of failure drove them to persevere and achieve when faced with challenges and adversity. Similarly, other researchers have found that fear of failure was directly associated with situation avoidance (Crocker, Brook, Niiya, & Villacorta, 2006). Based on this, I believe that entrepreneurs with higher levels of emotion regulation will be less affected by their failure than those with lower levels of emotion regulation (see Figure 1). Formally stated:

Hypothesis 4: Emotion regulation inversely moderates the relationship between negative affect from failure and entrepreneurial self-efficacy, such that the greater the level of emotion regulation, the weaker the relationship between negative affect from failure and entrepreneurial self-efficacy.

Practical Intelligence

Practical intelligence is an experience-based accumulation of skills, dispositions, tacit knowledge, and the ability to solve every day problems. Some refer to practical intelligence as common sense (Sternberg, Forsythe, Hedlund, Horvath, Snook, Williams, Wagner, & Grigorenko, 1995a). Despite increased attention to entrepreneurs' cognitions (R. A. Baron, 2004; Corbett, 2007; Krueger, Reilly, & Carsrud, 2000; Mitchell, Busenitz, Lant, McDougall, Morse, & Smith, 2002; Mitchell, Smith, Seawright, & Morse, 2000; Simon, Houghton, & Aquino, 2000), Sternberg (2004) noted that issues of entrepreneurial "know how" (or practical

intelligence) has received little attention. This is surprising because “know how” related concepts have demonstrated significant empirical relationships with personal and organizational performance in numerous studies and across multiple professions, roles, and situations (Hellriegel & Slocum, 2006; Kayes, 2002; Salas & Klein, 2001; Sternberg, Wagner, Williams, & Horvath, 1995b). Nevertheless, a few entrepreneurship empirical studies of related concepts have shown significant relationships with venture outcomes. Learning has been tested successfully as a predictor of opportunity recognition, venture resources, and venture beliefs (Corbett, 2007; Parker, 2006), and Baron and Markman (2003) studied social competence, which is related to social intelligence, and found a relationship with financial success. Mitchell, et al (2000) drew upon social cognition and information processing theory (Fiske & Taylor, 1991; Neisser, 1967) to explain and show significant relationships between expert ability scripts and the venture creation decision.

While entrepreneurial self-efficacy (discussed previously) is the *confidence* to undertake particular aspects of the entrepreneurial role, practical intelligence for entrepreneurs is the *tacit knowledge* needed to deal with the task of starting and running a new venture. Practical intelligence is accumulated situationally specific, experience-based, skills, dispositions, and the ability to apply that tacit knowledge for the solution of everyday problems (Sternberg et al., 1995a). It is a set of mental structures consisting of compressed patterns, procedures, routines, images, analyses, and conclusions (Sternberg, 2007). Practical intelligence has an implicit, unarticulated quality, and within specific domains, practical intelligence is the basis for expertise (Sonnentag, 1998). Baum and Bird (2010: 399) note that “because practical

intelligence is largely tacit it cannot, by definition, be completely explicated or formalized in text or shared easily with others; thus, it is not easily imitated. Because it is held privately, it is not available for competitors. Thus, it is a more valuable and persistent source of entrepreneurs' competitive advantage than explicit knowledge."

Entrepreneurs need knowledge in many diverse areas when starting up a new business. For example, it is important to know (1) how to test prototypes (Thomke, 2003), (2) how to find resources (Timmons & Spinelli, 2006), (3) how to market and sell (Bhide, 2000), (4) how to organize and manage (Baum & Locke, 2004), and (5) how to determine opportunity feasibility (R. A. Baron & Shane, 2008). Timmons and Spinelli (2006) indicate that entrepreneurs' knowledge about how to create new ventures and knowledge about the relevant product domain are most valuable. Importantly, practical intelligence is something that can be developed (Sternberg, 2004).

The new venture situation is dominated by newness; however, all is not totally new. Some decision processes, resource aggregation activities, customer fulfillment conditions, and market characteristics appear and reappear. Through prior venture experience, entrepreneurs' mental structures about new venture processes are continuously used, revised, and reused. Indeed, entrepreneurship researchers have found significant positive relationships between "habitual" or repeat entrepreneurs and venture start-up and growth (Davidsson & Honig, 2003). Venture experience contributes to entrepreneurs' accumulation and organization of practical intelligence.

Although the concept of practical intelligence is somewhat controversial, and a lack of empirical studies exist about practical intelligence and its effect on

entrepreneurs, Sternberg and colleagues' (1995b) finding of a relationship between practical intelligence and personal success should apply in the realm of entrepreneurship. The related findings of Mitchell et al. (2000), which are based upon social cognitive / information processing concepts and theory that expert ability scripts impact the venture creation decision, raise my confidence that a significant store of relevant practical intelligence contributes to entrepreneurial self-efficacy as well as the ability to start a new business and be successful after failure (see Figure 1).

Hypothesis 5: A founder's level of practical intelligence is positively associated with entrepreneurial self-efficacy.

Hypothesis 6: Entrepreneurial self-efficacy mediates the relationship between practical intelligence and subsequent startup success.

Self-Leadership

Self-leadership (Manz, 1986; Manz & Neck, 2004; Manz & Sims, 1980; Neck & Houghton, 2006; Sims & Manz, 1996) is the influence that individuals use to control their own behavior and thoughts. Self-leadership is comprised of specific behavioral and cognitive strategies intended to increase personal effectiveness and performance (Frese & Fay, 2001; Sims & Manz, 1996). The fundamental idea behind self-leadership is that individuals look first within themselves for the necessary tools and strategies to motivate and control behavior and thought. Recently D'Intino, Goldsby, Houghton, and Neck (2007) noted that although entrepreneurship is typically seen as social in nature, it tends to be very focused on individual action, and

that self-leadership, as applied to entrepreneurship, can assist in this self-directed nature of starting and growing a new venture.

Self-leadership strategies are typically classified into three categories, including behavior focused strategies, natural reward strategies, and cognitive or thought pattern strategies (Manz & Neck, 2004; Prussia, Anderson, & Manz, 1998a; Sims & Manz, 1996). Natural reward strategies, however, which include finding intrinsic reward in the task, enjoying the job-setting, and engaging in job- or task-redesign, can, without difficulty, be characterized as contributing to the other two self-leadership strategies. The act of redesigning a task or position for one's own benefit is a behavioral action. To discern the small joys in a neutral or distasteful task or setting requires cognitive effort and reframing. This is perhaps why previous studies (Prussia, Anderson, & Manz, 1998b) were not able to establish reliability when they created a scale including natural rewards. Consequently, I treat self-leadership theory (Sims & Manz, 1996), as consisting only of behavioral- and cognitive-focused strategies and suggest that discovering the natural reward in both the task at hand and the surrounding context do not create a separate and distinct self-leadership strategy (Boss & Sims, 2008).

Self-leadership has been proposed as a form of individual self-regulation. Indeed, Cohen, Chang, and Ledford (1997) found that most people engage in some form of self-managing behaviors even if they are not formally required to do so (such as being part of a self-managing team). Yun, Cox, and Sims (2006), however, found that not all people have the desire to exercise self-leadership, and that the use of self-leadership is contingent on an individual's need for autonomy. Other research has

shown that self-management and self-leadership characteristics can be influenced through training (Frayne & Geringer, 2000; Neck & Manz, 1996), thus improving job performance, job satisfaction, and outcome expectancy.

Although self-leadership and self-management are similar in concept, self-management is when a subordinate takes on the responsibility typically reserved for managers such as determining the approach to task execution, monitoring performance, taking corrective action, and seeking necessary guidance or resources, (Druskat & Wheeler, 2003; Manz & Sims, 1984, 1989) while self-leadership is seen as controlling one's own behavior and thoughts.

Behavior-focused self-leadership

Behavior-focused self-leadership involves using action-oriented strategies to accomplish tasks that are difficult, or are neither enjoyable nor motivating. Sims and Manz (1996) identified various behavior-focused self-leadership strategies, including self-observation, self-goal setting, self-evaluation, self-reward and self-punishment, cueing strategies, and rehearsal.

Individuals must know what it is that they are doing, or have been doing, before attempting to change behavior. *Self-observation* involves increasing self-awareness and determining how, why, and when one behaves in certain ways. After raising self-awareness through observation, *self-evaluation* helps to determine the degree to which a particular behavior is positive or negative, desirable or undesirable, and necessary or unnecessary.

Self-goal setting is creating a deadline for a desired end-state. Rather than having this goal set by someone else, a goal is self-assigned in order to provide

impetus and influence toward some end (Sims & Manz, 1996). The research on goal setting (Locke & Latham, 2002) is quite extensive and I believe this particular aspect of self-leadership is likely the most critical in starting a new venture. Entrepreneurs can especially enhance this part of self-leadership by engaging in self-goal setting. *Self-reward* is a way of congratulating oneself on accomplishing a goal, no matter how small. The reward must be concrete and of some value to the individual if it is to provide sufficient leverage for action. *Self-punishment*, including self-criticism (Ongen, 2006), on the other hand, is not likely to facilitate the recovery process.

Cueing strategies involve manipulating the external environment to encourage desirable behaviors and to reduce undesirable or ineffective behaviors. Cueing can involve changing the physical environment, such as rearranging desk placement to reduce visual distraction, as well as making lists, notes, or other types of reminders to help maintain attention on the achievement of a goal. *Rehearsal*, the final behavioral self-leadership strategy, helps individuals enhance their ability to perform desirable behaviors and to eliminate undesirable ones. An entrepreneur who videotapes herself giving a pitch to investors can help eliminate “um’s” and “uh’s” as well as reinforce the positive effects of a sincere smile. Rehearsal is practice, and practice of any activity can lead to increased performance. Again, entrepreneurs can develop self-leadership by engaging in rehearsal of key tasks and behaviors.

Behavioral self-leadership to facilitate recovery

To realize that one has failed necessitates self-observation and self-evaluation. Beyond the realization that failure has occurred, self-evaluation involves determining the root cause of failure and ascertaining if anything could have been done to avoid it.

As a person identifies goals and sets sights on achieving them, the mind is drawn away from failure and toward new success. If the goals are reachable, the individual can use self-reward to increase motivation. In the case of past failure, self-punishment is not encouraged. Perhaps smaller goals, each with its own reward can increase self-efficacy and move an entrepreneur toward recovery. A change of scenery, a small vacation, or a new routine can act as cueing variables that can help bring new life into an existence filled with the pangs of regret. These behaviors or actions that constitute self-leadership will help to increase individuals' judgment about how well they can accomplish their responsibilities in the future. Consequently, as shown in Figure 1, I hypothesize that:

Hypothesis 7a: The relationship between entrepreneurial self-efficacy and subsequent start-up success is moderated by the practice of behavioral self-leadership.

Cognitive-focused self-leadership

Cognitive-focused self-leadership is deliberately attempting to control, influence, and enhance one's own thinking in productive ways (Sims & Manz, 1996). Neck and Manz (1996) found that individuals who received cognitive-focused training experienced heightened mental performance, positive affect, and job satisfaction. Cognitive focused strategies include mental imagery, mental rehearsal, self-talk, and managing beliefs and assumptions.

Visualizing oneself engaged in important performance actions is the core of *mental imagery*. Whether envisioning a particular outcome, imagining receiving an industry award, or mentally going over and over a future event, mental imagery can

have a powerful effect. Imagery creates a tangible target that can be “seen” before it actually occurs, providing much motivation. *Mental rehearsal* is a similar concept, however, rather than focusing on one event or action, as in the case of imagery, one goes step-by-step through the *process* of an upcoming event, much like the rehearsal of a theatrical production. The use of mental rehearsal can increase confidence and uncover potential problems before the actual event occurs.

Cognitive self-talk can be either constructive in the form of praise, or destructive in the form of criticism. The positive dialogue that occurs in one’s head is an effective strategy in self-leadership. However, many of the thoughts we have about ourselves are deeply embedded and unavailable for careful and conscious scrutiny. To successfully *manage one’s beliefs and assumptions* first requires an awareness of the functional and dysfunctional thinking patterns (Sims & Manz, 1996). This can best be accomplished by pausing, considering the situation, and perhaps writing down the thoughts that come to mind regarding what is occurring. Then it is possible to validate, challenge, or reframe those thoughts toward a better end. Taken together, these cognitive strategies embodied in self-leadership should enable entrepreneurs who have experienced failure and a change in entrepreneurial self-efficacy to move more easily toward recovery and subsequent venture success.

Cognitive self-leadership to facilitate recovery

The most salient cognitive self-leadership strategies that could help an entrepreneur move toward recovery are managing beliefs and assumptions and engaging in cognitive self-talk. After failure, it would be helpful for an entrepreneur to step back from the situation and look at it objectively. Taking a learning orientation

(VandeWalle, Cron, & Slocum, 2001) and reflecting on what can be learned from the situation helps remove the tension from the circumstances and allows an impartial judgment to be passed. An extreme example of this is found in the professor who, after rolling the family car, inquired, “Is everyone alive? Is anyone hurt? Okay, now what can we learn from this?” Another effective approach for those who have failed is to focus on the positive aspects of life, and to identify the things they are able to do well. This concentration on positive characteristics will have a carry-over effect and will strengthen the relationship between self-efficacy and recovery. Therefore, as shown in Figure 1, I hypothesize that:

Hypothesis 7b: The relationship between entrepreneurial self-efficacy and subsequent start-up success is moderated by the practice of cognitive self-leadership.

External Factors

In addition to what has been discussed above, there are several aspects which are extraneous to the individual entrepreneur that likely have an effect on whether the failed entrepreneur begins another venture and is successful in that venture. I believe that support from family and social contacts, as well as support from formal institutions and financial resource institutions may play a role in whether an entrepreneur starts a new business and how successful that business becomes.

Support from Family and Social Contacts

An entrepreneur is not an island. Most individuals have important “others” in their life with whom they bounce ideas off of, look to for support, and whose lives are impacted by starting a new business, whether they are family members, a mentor, a

colleague, or a trusted friend (Werbel & Danes, 2010). A stay-at-home spouse might not have the patience to endure another start-up, or may offer encouragement and help to the fledgling business. A mentor can hold great sway over those they admire, and if, with wise and thoughtful eyes says, “I think you should,” or “I think you shouldn’t” may play a larger decision-making role than the entrepreneur intends. Trusted friends and other social contacts can also play a role and have an effect on the decision to start a new business. Accordingly, as seen in Figure 1, I hypothesize the following:

Hypothesis 8a: Support from family has a direct positive effect on subsequent venture success.

Hypothesis 8b: Support from social contacts has a direct positive effect on subsequent venture success.

Access to Formal Institutions and Financial Resources

An entrepreneurs’ external network with formal institutions can link them to individuals and entities that can provide needed assistance and shape the new firm’s operating environment, such as customers, suppliers, competitors, financial institutions, regulatory agencies, incubators, and trade associations. The direct linkages that a founder maintains with these external parties can increase the source’s ability to provide information regarding the external environment (Burt, 1992).

Tsai (2002) notes that the greater the number of direct ties a given actor has, the higher the in-degree centrality of their network and the greater the amount of knowledge accessible in his or her network. In particular, a founder with a large external network will have a number of institutions from which to request start-up

support, as well as observations from which to draw conclusions regarding environmental conditions.

Prior research has established that there are economic factors that will influence the timing of when entrepreneurs will concede failure. First, entrepreneurs with slack resources (Singh, 1986) are able to absorb more loss that is associated with failure. An entrepreneur may go into a new venture with the thought “I have enough money for 3 years. That is how long I have to make this business successful.” Garud et al. (1992) note that slack resources are typically more available at the beginning of a new venture after investors have granted resources or when personal savings have not yet been depleted. After failure, however, it is likely that personal savings are gone and family resources have been tapped out, and it is only through access to others’ funds that a second venture is able to be financed. Financial resources, therefore, are a subset of formal institutions designed to help individuals start their business, such as angel investors, new partners, financial institutions, or venture capitalists. Having access to these types of external institutions will help failed entrepreneurs begin a new business and have success (see Figure 1). Taken together, I predict,

Hypothesis 9a: Access to formal institutions has a direct positive effect on subsequent venture success.

Hypothesis 9b: Access to financial resources has a direct positive effect on subsequent venture success.

Chapter Summary

In summary, there are multiple elements that come into play when a failed entrepreneur decides to begin a new business. While most believe that failure is not a permanent state, there does not appear to be a theory of failure, or a theory of recovery from failure, that can guide failed entrepreneurs to new-found success. I have attempted to show that internal factors such as entrepreneurial self-efficacy, emotion regulation, practical intelligence, and self-leadership, and external factors such as family and social contact support, in addition to access to financial resources and formal institutions provide a framework from which to begin. A summary of my study hypotheses can be seen in Figure 2 and Table 2 below.

Figure 2. Model of Proposed Research Hypotheses: Internal and External Factors Influencing Subsequent Startup Success of Failed Entrepreneurs

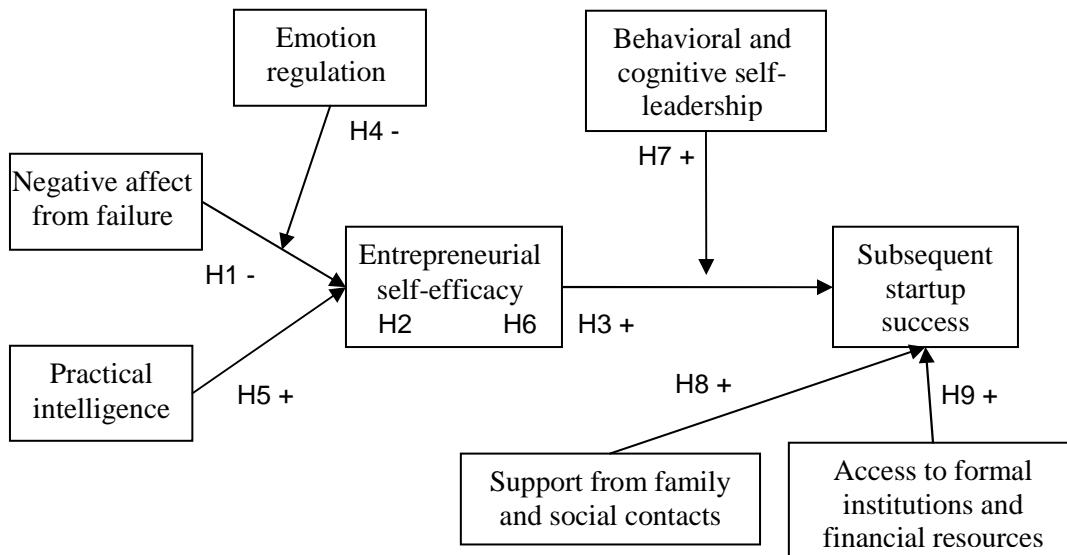


Table 2. Summary of Study Hypotheses

Hypothesis 1: Entrepreneurs' negative affect from failure of their enterprise is inversely related to entrepreneurial self-efficacy.
Hypothesis 2: The entrepreneurial self-efficacy of failed entrepreneurs is positively related to subsequent startup success.
Hypothesis 3: Entrepreneurial self-efficacy mediates the relationship between negative affect from failure and subsequent startup success.
Hypothesis 4: Emotion regulation inversely moderates the relationship between negative affect from failure and entrepreneurial self-efficacy, such that the greater the level of emotion regulation, the weaker the relationship between negative affect from failure and entrepreneurial self-efficacy.
Hypothesis 5: A founder's level of practical intelligence is positively associated with entrepreneurial self-efficacy.
Hypothesis 6: Entrepreneurial self-efficacy mediates the relationship between practical intelligence and subsequent startup success.
Hypothesis 7a: The relationship between entrepreneurial self-efficacy and subsequent start-up success is moderated by the practice of behavioral self-leadership.
Hypothesis 7b: The relationship between entrepreneurial self-efficacy and subsequent start-up success is moderated by the practice of cognitive self-leadership.
Hypothesis 8a: Support from family has a direct positive effect on subsequent venture success.
Hypothesis 8b: Support from social contacts has a direct positive effect on subsequent venture success.
Hypothesis 9a: Access to formal institutions has a direct positive effect on subsequent venture success.
Hypothesis 9b: Access to financial resources has a direct positive effect on subsequent venture success.

Chapter 3: Research Methods

Data Collection Procedures

To qualify for this study, failed entrepreneurs needed to meet certain requirements. Specifically,

- the failed business must have been in operation for at least one year,
- and, the failed business must have employed at least one other person beyond the founder.

These requirements were made to separate those companies that never left the “idea” or “dreaming” stage from those who actually started a business (Timmons & Spinelli, 2006). My aim was to sample those whose business failed at least 2 years in the past, allowing those who intended to begin another business sufficient time for restart.

After contacting failed entrepreneurs, I sent them a link to an online survey via email. The email specified that all information they would provide would be strictly confidential, that it would be stored in a safe location, and that I would use a special system to disassociate names from data. No one else but me would be familiar with the system. Furthermore, I promised that I would not name any of my interviewees, survey subjects, or their companies in my dissertation or any subsequent publications. Additionally, I identified all the potential risks involved in this study and asked them to sign an informed consent form (see Appendix 1) before the survey began. Survey data were collected online through a secure server and all data are stored on a CD and kept in a locked cabinet in Dr. J. Robert Baum’s office.

All participants were offered an autographed book on leadership by Professor Henry P. Sims, Jr. as a token of appreciation for participation in this study.

Sampling

This investigation proceeded through the following stages. First, I conducted a qualitative pilot study to investigate the experience of failed entrepreneurs. I identified six entrepreneurs who had experienced the failure of at least one previous business. I deliberately sought out entrepreneurs who had started a new business since failure, as well as entrepreneurs who had *not* started new businesses. I conducted semi-structured interviews with these subjects (see Appendix 2). My objective was to confirm the a priori theoretical perspectives of the project, as well as to discover any novel ideas that might enhance the theoretical perspective of the research. This phase is considered an inductive effort to help refine and define my theoretical model. Indeed, during the interview process, subjects confirmed the theoretical perspectives and contributed the idea that in addition to anger, sorrow, or blame, an entrepreneur might also feel relief when they finally had to shut the company down. This novel idea was incorporated into the second stage of the study.

The second stage of this research involved conducting an online survey. This was a deductive analysis of the theoretical model used to guide the research. In this case, initially, I drew on a list of 91 ventures that used a Bay Area “work-out” firm to help them liquidate their assets. Over 95% of these companies failed, and each of the companies used this firm to help them “work-out” of their business. This list was used as the starting point to identify and contact potential subjects. Unfortunately this list did not bear a lot of fruit. The process for finding a single participant from

this list began with only the name of a company from the list. I then researched that company to discover who the founders were. If I could discover names of founders, my next task was to research and identify the founder's current contact information, get in touch with them by phone or email, and then invite them to participate in the study. From the original list of 91 companies, four people participated.

It became clear that this dataset would be difficult to assemble, and that there was no single organization where I could find enough failed entrepreneurs to complete my sample. Therefore I began a process of convenience sampling; that is, I started asking people I knew for referrals and then asking those referrals to participate as well as share other names of people they knew who faced a similar situation, that is, having owned a company that went out of business. Thus, to create a larger sample of failed entrepreneurs, I invited individuals to self-select themselves into the study. This was done in a number of ways. First, I ran an advertisement in the Dingman Center for Entrepreneurship monthly newsletter at the University of Maryland, briefly explaining my research and inviting participation. This did not yield a single participant. I attended the Dingman Center's 2009 business plan competition, *Cupid's Cup*, and approached dozens of people face-to-face, always asking them to participate if they met the criteria as well as asking them if they knew anyone who might meet the criteria. Three participants came from these efforts.

I began contacting small business development centers, beginning with a contact at the Nussbaum Center for Entrepreneurship in North Carolina. From their spotty records I was able to contact five failed entrepreneurs, two of whom completed the survey. I contacted an additional 27 small business development centers, none of

which were able to identify additional participants, citing time constraints, confidentiality, or simply never returning telephone calls and emails.

In February of 2009 I had the opportunity to add a few questions to a quality of work life survey to be administered at a major medical center in the southern United States with 5,467 employees. I added two questions: "Within the last 15 years, have you started your own company/companies?" and "Have you ever owned a company that has gone out of business?" Of the 3,884 employees who filled out the quality of work life survey, 154 employees indicated that they had owned a company that had gone out of business. I received permission from the CEO to solicit participation from this select group for my study. From the original sample (n=154), 91 answered at least one question, while 76 completed the entire survey. Being able to survey large groups of people seemed to be quite productive, so when the opportunity came to do the same thing in a different organization, I did so. This second time, in May of 2009, 1,889 employees from a different healthcare center in the southern United States were given a survey which included the same two questions. From the 1,168 employees who completed that survey, 54 indicated that they had previously owned a company that had gone out of business. Of that number, 22 answered at least one question, and 18 completed the entire survey.

Additional efforts to find subjects included placing notices on local entrepreneurship list serves, and social networking sites such as Facebook and LinkedIn, as well as meeting with and networking with colleagues, family members, and friends (for an example, see Appendix 3). Placing an ad on social networking sites (some with as many as 126,000 members) yielded 31 participants, while

personal networking (at times talking to people five places removed from me) found 46 participants.

Therefore, in all of the places I searched for failed entrepreneurs, I was able to find 202 subjects who filled out at least one question, 178 of whom completed the entire survey. Of the 178 complete surveys, 73 entrepreneurs indicated that they had started a “new” business after the failure of the first, dropping the final sample to 41%.

Participants in this study had an average age of 47.9 years and were 79.5% male. The majority (86.7%) were Caucasian, with 3.6% African-American, 1.2% Asian, 1.2% Hispanic, and 7.2% self-identified as “other” for ethnicity. While 98% of participants had attended at least some college, 41% had received a bachelor’s degree, 35% a master’s degree, and 7.2% a terminal degree (doctorate, MD, or JD).

Measures – Dependent Variable¹

Subsequent Startup Success. Entrepreneurial recovery was measured by the success of the subsequent start-up. This dependent variable was rated independently by an expert panel. From the information I gathered regarding the subsequent venture, I created summaries of each new firm including their product or process description, value proposition, industry, target market, marketing plan, financing plan, vision for 5-10 years, stage of startup, maximum sales, maximum employees, five year sales growth, five year employee growth, and age of company. The summaries provided the basis for ratings of success of each venture by three experts. The experts are experienced entrepreneurs and entrepreneurship researchers. Each expert has more than 5 years experience researching entrepreneurship as well as working in new

¹ All measures are shown in detail in Appendix 4

ventures. Each expert rating was done independent of the other expert ratings. The experts rated these companies on a five-point Likert type scale with 1 = very low success and 5 = very high success. Inter-rater reliability was .94.

Measures – Independent Variables

Negative Affect from Failure. I adapted the Hogan Grief Reaction Checklist (HGRC) (Hogan, Greenfield, & Schmidt, 2001) to capture the founders' affect regarding the failure of their business. The empirically validated HGRC was originally used to assess feelings associated with the death of a child or loved one ($\alpha = .90$). Based on the suggestion from Shepherd (2003, p. 325), that the “HGRC represents a basis for a measure of grief for the self-employed over the loss of a business” this checklist was condensed and adapted to the feelings surrounding a business failure and contains 19 items. The instructions for this measure directed the entrepreneur to “Take a moment to think back to **the time that your business closed**, including the weeks leading up to the closure and especially the month after. Below is a list of thoughts and feelings that you may have had after your business closed. Please read each statement carefully, and choose the number that best describes the way you felt **at that time**.” Using a five-point Likert scale, where 1 = does not describe me at all and 5 = describes me very well, participants responded to statements regarding their feelings of despair (8 items), panic behavior (5 items), and blame/anger (6 items), each designated as subscales by Hogan et al. (2001). Sample statements for these subscales include: “I agonized over closing the business,” “I frequently had muscle tension,” and “I was resentful” for despair, panic, and blame

respectively. Reliabilities for the subscales for my sample are despair (.86), panic behavior (.77), and blame (.87).

Based on interview results with failed entrepreneurs, I created what I intended to be a new, four-item subscale for negative affect from failure called relief. Using the same five-point scale, the four questions are: “I was relieved to have it over with,” “I felt relief that it ended,” “I was relieved to find some closure,” and “I would say that I was relieved.” The alpha for these four items is .92. Each of the relief items was reverse coded (in order to be consistent with the Hogan scales) and then averaged to create a relief subscale to add to the existing scale of negative affect from failure. Although the overall alpha reliability for negative affect from failure stayed at .92 when relief was included, further analysis showed that relief is a separate construct. Exploratory factor analysis did not support the a priori theory of a four factor structure. Additionally, a three factor structure was not supported. After the removal of two original items, “I blamed others,” and “It was just another life experience” (reverse coded), a two factor structure was supported, with blame, despair, and panic as one factor and relief as a second factor. Consequently, a one factor model which included only blame, despair, and panic was used to test my hypotheses.

To create a proper overall scale of negative affect from failure, I had to account for the fact that the three subscales had different number of items and varied in terms of their variance. If the number of items and standard deviation of the subscales is not taken into account, then the final total measure is actually a biased measure of the construct and is a weighted function of the subscale with the greatest variance and items. Thus, I conducted the following procedure to create my overall

negative affect from failure scale. First, I created each subscale by averaging their individual items. This step equalized all the subscales in terms of their number of items. Next, I standardized each of the three subscales by subtracting their mean and dividing their standard deviations. The consequence of performing this standardization was to equalize the subscales in terms of their variances. I then averaged these standardized subscales into a single unbiased overall measure.

Entrepreneurial Self-efficacy. I measured entrepreneurial self-efficacy using 21 items drawn from DeNoble, Jung, and Ehrlich's (1999) instrument (with 23-items) and C. C. Chen et al.'s (1998) instrument (with 22-items), in which founders rated their perceived ability to perform well on various entrepreneurial start-up behaviors. Respondents indicated how true each statement was using a 5-point Likert scale with 1 = not at all true, and 5 = completely true. Sample items include "I can develop and maintain favorable relationships with potential investors," "I can tolerate unexpected changes in business conditions," and "I can recruit and train key employees." Entrepreneurial self-efficacy is a global measurement of various subscales, i.e. (1) dealing with uncertainty (two items used from C. C. Chen et al., 1998, and three items used from DeNoble et al., 1999) ($\alpha = .81$), (2) financial control (three items from C. C. Chen et al., 1998) ($\alpha = .70$), (3) developing new product and market opportunities (seven items from DeNoble et al., 1999) ($\alpha = .89$), (4) developing critical human resources (three items from DeNoble et al., 1999) ($\alpha = .82$), and (5) initiating investor relationships (three items from DeNoble et al., 1999) ($\alpha = .84$). Overall alpha reliability for this scale was .93. Exploratory factor analysis indicated that these five sub-factors constituted a second order factor, accounting for 66% of the variance.

These five subscales also had a different number of items, therefore I standardized each subscale and aggregated them to create one overall measurement of entrepreneurial self-efficacy in the same manner I described above.

Emotion Regulation. To measure emotion regulation I used the Regulation of Emotion four-item subscale from Wong and Law's (2002) Emotional Intelligence scale. Sample items include "I can always calm down quickly when I am very angry," and "I have good control of my own emotions." Alpha reliability for this measure was .83.

Practical Intelligence. Practical intelligence was measured with responses to a scenario that modified a lab study by Sternberg et al. (1995b) to fit a field study. This field measure was validated by Baum & Bird (2010) and Baum, Bird, and Singh (In press). Drawing on the entrepreneurship literature, and in consultation with other entrepreneurs and entrepreneurship researchers, I identified key elements that are important for venture startup (R. A. Baron & Shane, 2008; Timmons & Spinelli, 2006). Based on this information, I created a scenario, with 10 actions an entrepreneur might engage in during new venture start-up. These actions were then verified and ranked by four content experts, successful entrepreneurs and professors of entrepreneurship. The scenario begins, "Assume that you have dreamed of starting an enterprise software company, and you have finally decided to begin the process. You have written the code that allows instantaneous integration between inventory levels and orders from preferred suppliers..." The 70-word scenario continues to explain that the entrepreneur just learned that he/she will receive \$150,000 angel investment from a friend. The respondents were presented with a list of 10 actions

and told to read the entire list of options and then rank-order the list according to their best sequential plan of action. The actions include buying office furniture, establishing an LLC (Limited Liability Company), focusing on producing a working prototype, going to a lawyer and drawing up financing documents, contacting five companies that might serve as beta sites, filing for a copyright/patent, hiring a chief technical officer, hiring a salesperson, taking your angel lender to dinner, and contracting with a public relations firm to promote your product.

A standard “best practice” ranking of the alternative actions for the scenario was developed using the average ranking generated from the four content experts discussed above (Baum & Bird, 2010). Total ranking variances ($\Sigma |\mu - \chi|$) from the best practices standards were developed for each of the respondents. Specifically, I developed the “ideal” or “correct” ranking by first averaging the four expert’s rankings (interrater reliability = .93) and then applying that average to a new ranking. Next, each participant ranking was subtracted from its corresponding “correct” ranking for each of the ten items. This generated a number between -9 and 9. The absolute value of those numbers were then averaged to create a score between 0 (a perfect match) and 50 (the worst possible score). To make the scores appear in the direction predicted, each variance score was subtracted from 50 (i.e., reversed) which number became the participant’s practical intelligence score.

Self-leadership. Self-leadership, or the influence that people exert over themselves and the intention to control their own behaviors, was measured with 20 items taken from Houghton and Neck’s (2002) Revised Self-Leadership Questionnaire (RSLQ). The RSLQ in its original form contains 36 items and

measures nine factors (original alphas follow), (1) visualizing successful performance ($\alpha = .85$), (2) self-goal setting ($\alpha = .84$), (3) self-talk ($\alpha = .92$), (4) self-reward ($\alpha = .93$), (5) evaluating beliefs and assumptions ($\alpha = .78$), (6) self-punishment ($\alpha = .86$), (7) self-observation ($\alpha = .82$), (8) focusing on natural rewards ($\alpha = .74$), and (9) self-cueing ($\alpha = .91$). Due to space constraints on the survey, I reduced the number of questions in each factor to three (except self-cueing which originally only had 2), removing those questions with the lowest factor loadings as reported in the original scale (Houghton & Neck, 2002). I also removed all questions for “focusing on natural reward” and “self-punishment” based on my earlier explanation. All items were measured using a five-point Likert scale: 1 = not at all true, 2 = slightly true, 3 = somewhat true, 4 = mostly true, and 5 = completely true. Sample items include “I use my imagination to picture myself performing well on important tasks,” “I establish specific goals for my own performance,” and “Sometimes I find I’m talking to myself (out loud or in my head) to help me deal with difficult problems I face.” The alphas for the subfactors used in this study are (1) visualizing successful performance ($\alpha = .87$), (2) self-goal setting ($\alpha = .89$), (3) self-talk ($\alpha = .93$), (4) self-reward ($\alpha = .96$), (5) evaluating beliefs and assumptions ($\alpha = .88$), (6) self-observation ($\alpha = .73$), and (7) self-cueing ($\alpha = .89$). Based on previous theory (Sims & Manz, 1996), and in order to test my hypotheses, I created two subscales, behavioral and cognitive self-leadership. Behavioral self-leadership consisted of all items from the self-observation, self-goal setting, self-reward, and cueing subscales ($\alpha = .85$). These four subscales were averaged to create the behavioral self-leadership variable. Cognitive self-leadership consisted of all items from the visualization, cognitive self-talk, and

managing beliefs and assumptions subscales ($\alpha = .84$). These three subscales were averaged to create the cognitive self-leadership variable.

Social Support. To assess the support an entrepreneur receives from family and social contacts I used three items adapted from Dormann and Zapf (1999), one item adapted from Van Yperen and Hagedoorn (2003) and one item created for this study. All questions were posed on a five-point scale with 1 = not at all, and 5 = to a great extent. The five questions are as follows: “To what extent can the following people ***be relied upon*** when things get tough at work?” “To what extent are the following people ***willing to listen*** to your work-related problems?” “To what extent are the following people ***helpful to you*** to get your job done?” (Dormann & Zapf, 1999), “To what extent do you currently ***receive support from*** the following people?” (Van Yperen & Hagedoorn, 2003) and “To what extent have the following ***served as a mentor*** for your entrepreneurial efforts?” Each of the five questions was answered for a) colleagues, b) family, and c) friends, thus creating three subscales of five items each. Alphas for these scales are .89 for colleague support, .84 for family support, and .87 for friend support. Due to the diversity of scale source and the addition of a new item I ran exploratory factor analysis on the 15 items, using principle components analysis and Varimax rotation. This resulted in three factors with Eigenvalues over 1, and no crossloadings. Further analysis showed that colleague’s, family, and friend’s support form a second order factor of social support. Alpha reliability for the total scale was .87. Therefore, subscale scores were summed to get a total social support score.

Access to Formal Institutions and Financial Resource Institutions. To gauge access to formal institutions I asked entrepreneurs about their relationship with each of seven categories of external contacts (suppliers, customers, helpful competitors, business partners, helpful government agencies, trade associations, and boards of directors). These categories were identified from theory, interviews with entrepreneurship content-experts, and similar prior studies (K. G. Smith, Collins, & Clark, 2005). More specifically, each respondent was asked to rate each entity on a five-point scale where 1 = no support at all, and 5 = an extremely high level of support. Participants also had the option of N/A, or not applicable, if the particular entity was not germane to their situation.

For access to financial resource institutions, respondents were asked to rate four categories of financial resources (angel investors, bankers, government financing agencies, and venture capitalists) on the same five-point scale. The alpha for these 4 items was .91.

The a priori theoretical division of these items as two factors did not hold. After removing the item “business partners” (which is not an external relationship) three distinct factors emerged using exploratory factor analysis. Specifically the factors were financial resources (as expected with the four items), governing bodies (including helpful government agencies, trade associations, and boards of directors), and supply chain contacts (including suppliers, customers, and helpful competitors). After creating these separate scales, I ran an additional factor analysis on the three scales to see if support could be found for a second order factor. The factor analysis

showed that the three scales were indeed separate and could not be combined as a second order factor.

Control Variables. I included two control variables, age of the firm and experience, because of their potential relationship with the variables of interest. All firms were not started in the same year, and given the fact that it takes a few years for success to occur (Covin & Slevin, 1997), I controlled for age of the firm. A second control, experience, was reflected as the number of ventures the entrepreneur had founded which had gone out of business. This is an adaptation of Nicolaou, Shane, Cherkas, and Spector's (2008) original question regarding experience, "In your working life, how many new business have you started?" Table 3 includes a summary of all study measures.

Table 3. Summary of Study Measures

Variable	Definition	Sample Item	Target	Source of data
Subsequent startup success	Staying power and growth of new company	Sales growth	Founder	Expert Panel
Negative affect from failure	Thoughts and feelings that may have been had after the business closed	I agonized over closing the business	Founder	Founder
Emotion regulation	Dispositional tendency to use the emotion regulation strategies of reappraisal and suppression	I can always calm down quickly when I am very angry	Founder	Founder
Practical intelligence	Identification of key elements that are important for venture startup	Focus on producing a working prototype	Founder	Expert Panel

Social support from family, friends, and colleagues	Encouragement provided from close family members, mentors, or other important social contacts	To what extent are the following people helpful to you to get your job done?	Founder	Founder
Entrepreneurial self-efficacy	A person's belief in their own abilities to perform on the various skill requirements necessary to begin a new venture	I can identify potential sources of funding for investment	Founder	Founder
Self-leadership	An individual level process perspective through which people influence themselves to control their own action and thinking	I work toward specific goals I have set for myself	Founder	Founder
Access to formal institutions and financial resources	The relationship with contacts at various businesses and organizations helpful to startup entrepreneurs	What is the amount of overall support you receive from customers?	Founder	Founder
Age of current company	How many years the current company has been in business	When did you start this company?	Founder	Founder
Entrepreneurship experience	The degree of experience the founder has in starting new companies after failure	How many of the companies you founded in the past have gone out of business?	Founder	Founder

Chapter 4: Results

Initial Analyses

In order to create viable results, it is necessary to make sure the data are accurate and valid before proceeding to test the detailed analyses of the hypotheses for inclusion in the research model. This data validation includes removal of cases with missing data, checking for invalid responses, clarifying inconsistent responses and reverse coding necessary scale items. All analyses were performed using SPSS 15. As mentioned above, I removed a number of cases that had missing data. In all cases, missing data was due to respondents who did not complete the entire on-line survey. Further, participants answered open-ended questions in different ways, for example, “When did you start this company? (month/year).” Respondents wrote answers such as “March 2003,” “Mar ’03,” and “3/2003.” These answers had to be standardized in order to determine the number of years the company had been in business. I also checked the reliability of each scale using Cronbach’s alpha. All scales met the minimum threshold of .70 for internal consistency, as noted in the measures section.

Means, standard deviations, and intercorrelations are presented in Table 4. Most of the correlations were in the expected direction. Importantly, and as expected, entrepreneurial self-efficacy had a positive correlation with subsequent startup success ($r = .30$, $p < .01$), lending preliminary support to Hypothesis 2. Unexpectedly, and contrary to my theory, both facets of self-leadership were not related to subsequent startup success (behavioral self-leadership $r = -.10$ and cognitive self-leadership $r = -.16$). However, this may be due to the placement of the self-

leadership questions at the end of the lengthy survey, when participants might have been subject to some survey fatigue.

Table 4. Descriptive Statistics and Intercorrelations of the Study Variables

	Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
1	Years in current business	5.29	5.18												
2	Experience (number of previous failures)	1.37	1.04	-.04											
3	Negative affect after failure	1.96	0.75	-.15	.16										
4	Emotion regulation	3.72	0.71	-.19	-.16	-.01									
5	Practical intelligence	30.77	5.20	-.15	-.17	.12	.00								
6	Entrepreneurial self-efficacy	3.89	0.65	-.35**	.08	.10	.39**	.19							
7	Behavioral self-leadership	3.85	0.60	-.08	-.12	.09	.28**	.08	.23*						
8	Cognitive self-leadership	3.71	0.67	-.11	-.20*	.22*	.45**	.10	.18	.57**					
9	Family support	3.85	0.96	.14	-.13	.01	.18	-.20*	.06	.11	.22*				
10	Social contact support	3.24	0.89	-.04	-.03	.20*	.00	.03	.34**	.17	.17	.44**			
11	Formal institution support	22.78	8.41	.00	-.30**	-.07	.22*	.03	.15	.22*	.14	.16	-.03		
12	Financial resource support	11.72	7.63	.12	-.15	-.10	.08	.01	.20*	.19	.04	-.01	-.05	.63**	
13	Subsequent startup success	2.17	1.27	.04	-.02	-.05	-.01	.22*	.30**	-.10	-.16	.11	.34**	-.07	.13

N = 73
*p < .05; **p < .01 (1-tailed)

Hypothesis Results

Using multiple regression I tested each of the hypotheses of this dissertation. As can be seen in Model 1 of Table 5, entrepreneur's negative affect from failure of their enterprise had a non-significant relationship ($\beta = .02$) with entrepreneurial self-efficacy, providing no support for Hypothesis 1 and rendering unsupported the mediational hypothesis (H3) which suggested that entrepreneurial self-efficacy mediates the relationship between negative affect and subsequent startup success (see Model 1 of Table 5). Hypothesis 4 stated that emotion regulation inversely moderates the relationship between negative affect from failure and entrepreneurial self-efficacy, such that the greater the level of emotion regulation, the weaker the relationship between negative affect from failure and entrepreneurial self-efficacy. The interaction between negative affect from failure and emotion regulation did not have a significant effect on entrepreneurial self-efficacy ($\beta = -.14$; see Table 5, Model 2). This absence of a relationship rendered Hypothesis 4 unsupported.

However, this analysis shed further light on the relationship between emotion regulation and entrepreneurial self-efficacy ($r = .39$; $p < .01$; see Table 4). The analysis I performed by regressing entrepreneurial self-efficacy on negative affect and emotion regulation as well as the interaction of the two variables determined that emotion regulation has a strong and positive relationship with entrepreneurial self-efficacy ($\beta = .38$; $p < .01$; see Model 2, Table 5).

Table 5. Results of Regression Analyses of Hypothesized Model

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	DV=ESE	DV=ESE	DV=Success	DV=Success	DV=Success	DV=Success
Years in current business	-.24*	-.22*	.14	.24*	.20	.20*
Experience (number of previous failures)	.16	.17	.06	-.00	-.01	-.02
Negative affect after failure	.02	.01	-.05	-.06	-.12	-.06
Emotion regulation	.37***	.38***	.03	-.12	-.03	.08
Practical intelligence	.18*	.20*	.26*	.19	.23*	.25*
Negative affect X Emotion regulation		-.14				
Entrepreneurial self-efficacy (ESE)				.40**	.25*	.23
Behavioral self-leadership						-.11
Cognitive self-leadership						-.19
Family support					.04	.07
Social contact support					.30*	.34*
Formal institution support					-.30*	-.29*
Financial resource support					.22	.25*
Entrepreneurial self-efficacy X behavioral self-leadership						-.03
Entrepreneurial self-efficacy X cognitive self-leadership						-.05
R square	.28**	.30	.08	.19**	.32**	.38
Δ R square	.02			.12	.24	.00

Notes: N = 73, entries in the table are standardized regression coefficients

* p < .05; ** p < .01

Model 4 of Table 5 shows a significant and positive relationship between entrepreneurial self-efficacy and subsequent startup success ($\beta = .40$; $p < .01$), providing further support for Hypothesis 2, which suggests that entrepreneurs with a higher self-efficacy will have greater success in the new companies they start after failure.

Hypothesis 5 predicted that a founder's level of practical intelligence is positively associated with entrepreneurial self-efficacy. As shown in Model 1 of Table 5, this relationship was positive and significant ($\beta = .18$; $p < .05$), confirming this hypothesis.

To test Hypothesis 6, that entrepreneurial self-efficacy mediates the positive relationship that practical intelligence has with subsequent startup success, I followed the step-wise approach laid out by R. M. Baron and Kenny (1986). First, as reported above, I found the entrepreneur's practical intelligence to be significantly and positively related to entrepreneurial self efficacy. Second, practical intelligence was significantly and positively related to subsequent startup success ($\beta = .26$, $p < .05$; see Model 3, Table 5). Further, entrepreneurial self-efficacy was significantly and positively related to subsequent startup success after controlling for the predictor variables ($\beta = .40$, $p < .01$; see Model 4, Table 5). Finally, the absence of significance for the practical intelligence in the presence of the mediator and significant effects for the mediator indicate, in support of Hypothesis 6, that entrepreneurial self-efficacy is indeed the mediator it is hypothesized to be (see Model 4, Table 5).

Hypotheses 7a and 7b suggested a moderating influence of behavioral and cognitive self-leadership on the relationship between entrepreneurial self-efficacy and subsequent start-up success. Non-significant beta-weights ($\beta = -.03$ for the

interaction with behavioral self-leadership and $\beta = -.05$ for the interaction with cognitive self leadership) seen in Model 6 in Table 5 show that neither of these hypotheses was supported.

The final four hypotheses dealt with the level of support from specific external sources on subsequent startup success, namely, family (H8a), social contacts (H8b), formal institutions (H9a), and financial resource institutions (H9b). Model 5 in Table 5 indicates that family support (H8a) did not have significant effect on subsequent venture success ($\beta = .04$). Social contact support had a positive and significant effect ($\beta = .30$; $p < .05$) on the dependent variable, confirming hypothesis 8b (see Model 5, Table 5). Also shown in Model 5 of Table 5, formal institutional support (H9a) had an unexpected negative effect ($\beta = -.30$; $p < .05$). However, no support was found for this hypothesis because it was in the opposite direction of what I hypothesized. Finally, as seen in Model 5 of Table 5 financial institution support had a non-significant effect on subsequent venture success ($\beta = .22$), providing no support for hypothesis 9b.

Overall, I found support for four of my 12 hypotheses, and found no support for eight of them (see Table 6).

Table 6. Tested Hypothesis Results Summary

Hypothesis	Predicted Effect	Result
Hypothesis 1	Negative Affect after Failure affects Entrepreneurial Self-Efficacy (ESE)	Not Supported
Hypothesis 2	ESE affects subsequent startup success (SSS)	Supported
Hypothesis 3	ESE mediates Negative Affect's affect on SSS	Not Supported
Hypothesis 4	Emotion Regulation moderates Negative Affect's influence on ESE	Not Supported
Hypothesis 5	Practical Intelligence affects ESE	Supported
Hypothesis 6	ESE mediates Practical Intelligence's affect on SSS	Supported
Hypothesis 7a	Behavioral Self-Leadership moderates ESE	Not Supported

	influence on SSS	
Hypothesis 7b	Cognitive Self-Leadership moderates ESE influence on SSS	Not Supported
Hypothesis 8a	Family Support affects SSS	Not Supported
Hypothesis 8b	Social Contact Support affects SSS	Supported
Hypothesis 9a	Formal Institution Support affects SSS	Not Supported
Hypothesis 9b	Financial Institution Support affects SSS	Not Supported

An Alternative Model

Based upon the results of my original hypothesis testing and a reexamination of theory regarding the antecedents of entrepreneurial self-efficacy (Baum & Bird, 2010; C. C. Chen et al., 1998), I created an alternative model and performed additional analyses to better determine what predicts the success of subsequent ventures after failure. A depiction of the alternative model is shown in Figure 3 while the descriptive statistics and intercorrelations of the alternative model are below in Table 7.

Figure 3. Alternative Model: Factors Influencing Subsequent Startup Success of Failed Entrepreneurs

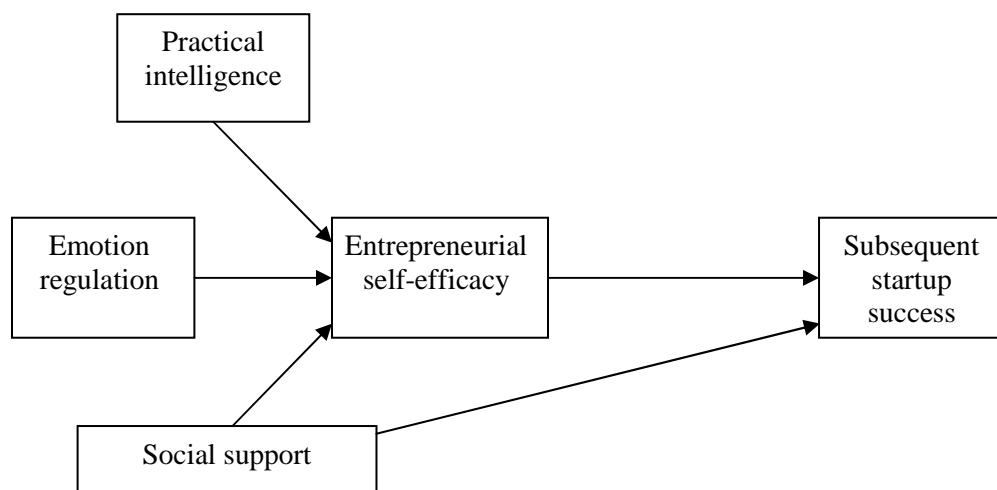


Table 7. Descriptive Statistics and Intercorrelations of the Alternative Model

	Variable	Mean	SD	1	2	3	4	5	6	7
1	Years in current business	5.29	5.18							
2	Experience (number of previous failures)	1.37	1.04	-.04						
3	Emotion regulation	3.72	0.71	-.19	.16					
4	Practical intelligence	30.77	5.20	-.15	.17	.00				
5	Social support	3.44	0.79	.02	-.07	.08	-.06			
6	Entrepreneurial self-efficacy	3.89	0.65	-.35**	.08	.39**	.19	.28**		
7	Subsequent venture success	2.17	1.27	.04	-.02	-.01	.22*	.30**	.30**	

N = 73

*p < .05; **p < .01

As noted in the original results, statistical analysis showed that entrepreneurial self-efficacy fully mediated the effects of practical intelligence on subsequent startup success. Based on the positive and strong relationship between emotion regulation and entrepreneurial self-efficacy ($\beta = .39$; $p < .01$), I tested to see if entrepreneurial self-efficacy also acted as a mediator between emotion regulation and subsequent startup success. Following R. M. Baron and Kenny's (1986) traditional approach for testing mediation, the independent variable must predict the dependent variable to satisfy the first condition for mediation, however, this requirement is often relaxed (e.g., Shrout & Bolger, 2002). As such I was able to test for mediation of emotion regulation on subsequent startup success. Moreover, as shown in Model 3 of Table 8, emotion regulation has a non-significant beta-weight in the presence of entrepreneurial self-efficacy ($\beta = -.10$), thus satisfying the requirements for full mediation.

Additional theory suggests that support from family and social contacts might, through emotional encouragement have a direct effect on entrepreneurial self-efficacy (cf. Davidsson & Honig, 2003; Werbel & Danes, 2010). As mentioned in the previous chapter, factor analysis suggested that social support is a second order factor comprising support from family, friends, and colleagues. Using stepwise regression I tested the effects of the second order factor, social support, first on entrepreneurial self-efficacy ($\beta = .28$; $p < .01$), second, on subsequent startup success ($\beta = .34$; $p < .01$), and finally on subsequent startup success in the presence of entrepreneurial self-efficacy ($\beta = .25$; $p < .05$) (see Table 8). In this step the decrease of significance for the independent variable and significant effects for the mediator indicate that entrepreneurial self-efficacy partially mediates the effects of the independent variable on the dependent variable. Additionally, a Sobel (1982) test showed that this partial mediation effect was indeed significant for social support ($Z = 2.08$, $p < .05$).

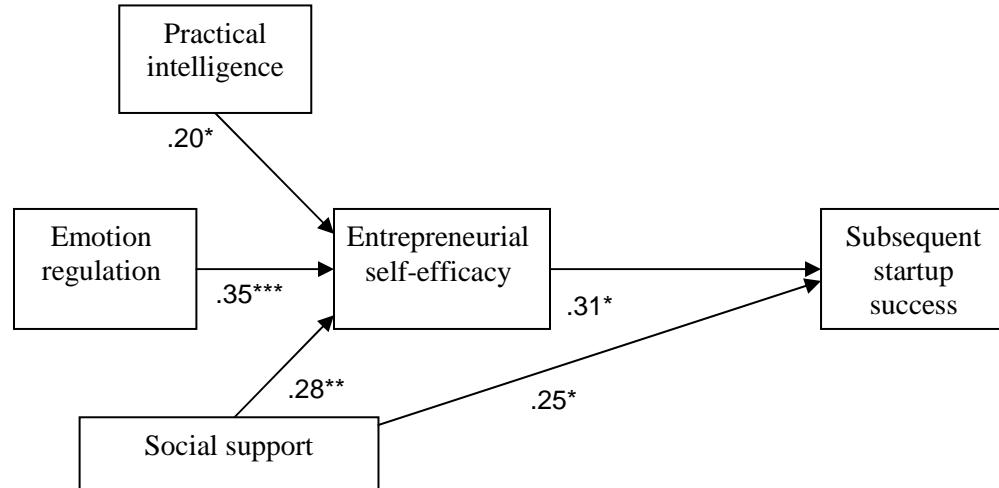
Table 8. Results of Regression Analyses of Alternative Model

Variable	Model 1 DV=ESE	Model 2 DV=Success	Model 3 DV=Success
Years in current business	-.23*	.15	.27
Experience (number of previous failures)	.18	.08	.02
Emotion regulation	.35***	.01	-.10
Practical intelligence	.20*	.28*	.22
Social support	.28**	.34**	.25*
Entrepreneurial self-efficacy			.31*
R square	.35***	.19**	.25*
ΔR^2			.06

Notes: N = 73, entries in the table are standardized regression coefficients

* $p < .05$; ** $p < .01$

Figure 4. Alternative Model: Results of Factors Influencing Subsequent Startup Success of Failed Entrepreneurs



Notes: Entries are standardized regression coefficients

* $p < .05$; ** $p < .01$

Chapter Summary

This chapter described the analysis of the data, and the results of hypothesis testing. In summary, the hypothesized effect of negative affect from failure on entrepreneurial self-efficacy was not confirmed by the results. Additionally, some of the factors thought to influence subsequent startup success, such as behavioral and cognitive self-leadership and support from financial institutions and formal institutions did not receive support from the data. However, it appears that three variables, namely, practical intelligence, emotion regulation, and social support do have a strong and positive influence on an entrepreneurs' belief in their ability to do what is necessary to start a new company after failure. Moreover, entrepreneurial self-efficacy was shown to have a significant effect on the actual success of the new venture. An alternative model was suggested that better fit the data (see Figure 4).

Chapter 5: Discussion

Summary of Major Findings

Overarching theories of human behavior suggest that personal characteristics are linked to behavior and performance. Characteristics such as ability and motivation (Maier, 1955), and personality traits (Bandura, 1986; Hollenbeck & Whitener, 1988) have been shown to influence behavior (Endler, 1983). This line of research was extended to the entrepreneur by Shaver and Scott (1991) who proposed that relatively enduring personal attributes might influence entrepreneurial activity. This dissertation investigated selected personal characteristics that may contribute to the subsequent startup and recovery of failed entrepreneurs.

To be comprehensive in terms of well-studied concepts and theories that relate to failure and entrepreneurial perseverance and resilience, I chose areas that have been theorized as having a potential impact on entrepreneurial endeavors. I suggested that some of the characteristics that differentiate success of those who begin another business after one business fails include degree of negative affect after failure (emotion), entrepreneurial self-efficacy (reflection of motivation), emotion regulation (personality), practical intelligence (ability/intelligence), and self-leadership (ability/behavior). I also suggested that external factors such as family and social contact support as well as support from formal institutions and financial resource institutions would contribute to subsequent startup success of failed entrepreneurs. In sum, the purpose of this study was to determine some of the factors that are influential in the success of a new venture after an entrepreneur experiences the failure of a company.

The main finding of this study was the reaffirmation that self-efficacy is a central or core concept in entrepreneurial success (Baum & Bird, 2010; C. C. Chen et al., 1998; DeNoble et al., 1999). The more an entrepreneur believed in their own ability, that they could do what was necessary to start a new business, the more successful they were, independent of the number of times they had failed in the past. This was in stark contrast to my findings regarding the influence of negative affect.

Based upon my results, the negative affect that ensues from the failure of a business did not appear to affect the entrepreneur's self-efficacy regarding the next start up. This can be interpreted in different ways. First, it may be that my measurement of negative affect, a retrospective measure, did not capture the true impact of those emotions, an issue I discuss further in the limitations section.

Another interpretation of this lack of confirmation is that however the entrepreneur felt about the previous failure, those feelings of despair, panic, and blame did not interfere with future endeavors. This finding is interesting in and of itself, because what these results show is that although the entrepreneurs may have felt badly or may not have felt badly about their failure, those feelings were not connected to their belief regarding their ability to start a new business, nor to their future success. This may be a reason why serial entrepreneurs are so successful, because they are able to disconnect their feelings from the past and maintain their focus on the present and future.

Another finding of this research was the influence that practical intelligence has on both entrepreneurial self-efficacy and venture success. Practical intelligence is a concept that has been seldom used in entrepreneurship research, having recently

been brought into this area by Baum and colleagues (Baum & Bird, 2010; Baum et al., In press). However, this research suggests that practical intelligence is a concept that can provide great insight into the determinants of venture success. The results of this study show that practical intelligence, or the tacit knowledge of how to start up a new business, has a strong and direct effect on entrepreneurial self-efficacy while at the same time having a strong indirect effect on venture success. This study confirms Baum's work and extends it to the area of those who begin a new business after failure.

Social support from friends, family members, and coworkers is another important variable with regards to the feelings an entrepreneur has regarding self-efficacy, as well as directly influencing venture success. When family members, friends, and colleagues are helpful, willing to listen to work related problems, and can be relied upon when things get tough at work, this provides support to the entrepreneur and can help bolster the belief in ability. Intuitively we know this is the case, that a supportive spouse or friend can make a world of difference in a person's attitude and outlook. Interestingly, this support can also have a direct influence on the success of an entrepreneurial venture. This may be because of direct involvement from these contacts, in the form of partnerships, secretarial or other office help, or it may be that these contacts took on an informal role of coach and mentor and provided a sounding board for ideas and policies regarding the company, thus having an influence on the success of the venture.

The lack of results of self-leadership was both surprising and puzzling to me. Self-leadership is the influence that people exert over themselves and the intention

they have to control their own thoughts and behaviors. There are a number of possible reasons why there were no results for behavioral self-leadership or cognitive self-leadership. The first, mentioned above, may be due to survey fatigue and placement of the questions near the end of the long survey. The lack of results may also stem from improper placement of variables in my theoretical model, i.e., that self-leadership actually influences practical intelligence and emotion regulation rather than having a direct or moderating effect on entrepreneurial self-efficacy or subsequent venture success. Self-leadership also is a fairly new area of research and has not been used in many studies. Nevertheless, although self-leadership has been theorized to have an influence in the entrepreneurship sphere (D'Intino et al., 2007), it has not been directly tested. Thus, this is a first attempt to discover how and in what way self-leadership and entrepreneurship interact. Certainly further research is required to understand the role of self-leadership as a personal characteristic of the entrepreneur.

Entrepreneurs' ability to regulate and control their emotions had a very strong influence on entrepreneurial self efficacy. Although this was not a hypothesized relationship, it became apparent when testing the interaction of emotion regulation and negative affect that this was the case. Basically, entrepreneurs who are able to regulate and control their emotions have a stronger belief in their ability to accomplish the required steps to start a new business. Perhaps it is this strong ability to regulate emotions that masked or negated the feelings of negative affect.

The alternative model shows that entrepreneurial self-efficacy, or the belief in one's ability to be able to execute a course of action required to deal with future

situations (Bandura, 1986), mediates a number of different influences on subsequent startup success. Specifically, I found that it acts as a mediator for emotion regulation and practical intelligence (Baum & Bird, 2010), and a partial mediator of social support on subsequent venture success. Although this alternative model has promising results, it was designed post hoc and needs to be followed up with additional study.

Theoretical Contributions

This dissertation makes several important theoretical contributions. As far as I am able to discern, it is the first attempt to empirically link negative affect from failure to entrepreneurial self-efficacy. Researchers have theorized regarding its possible effects (R. A. Baron, 2008; D. A. Shepherd, 2003), but to date, have not created a usable scale or tested it. Personal communication with one of these scholars resulted in the comment, “I have thought about developing [a measure for negative affect] but have not yet done it” (D. A. Shepherd, 2008).

A second contribution to theory is the study of entrepreneurs after they have failed. The overwhelming majority of research looks at the characteristics of entrepreneurs that predict involvement in entrepreneurship or success in a first venture. My dissertation sample had a restriction on it; I was investigating entrepreneurs who had a previous failure. Although this lack of generality might be seen by some as a criticism of the study, this real situation, failed entrepreneurs, is very common. Almost two thirds of all entrepreneurship ventures fail within six years (Timmons & Spinelli, 2006). Given the ubiquitous nature of failure in the realm of entrepreneurship, it is surprising how little we know about this subject, or, how little

research has been conducted on failed entrepreneurs. One of the reasons researchers have not done much work in this area might be that failed entrepreneurs are difficult to locate, and many are reluctant to revisit their failure. Despite the difficulty of collecting data, I have successfully investigated failed entrepreneurs and shed light on personal factors that enable repeated attempts to create new and successful ventures.

This study also confirmed the role of practical intelligence on venture success and entrepreneurial self-efficacy and extended its explanatory power into the area of failed entrepreneurs. With the exception of theoretical proposals by Robert Sternberg (2004) and two studies by Baum and associates (Baum & Bird, 2010; Baum et al., In press), the concept of practical intelligence has been absent from the entrepreneurship literature. Thus, my findings contribute a greater understanding of the concept of practical intelligence and its importance for entrepreneur's success. Indeed, this confirms Baum and Bird's (2010) finding that practical intelligence is a valuable and persistent source of entrepreneurs' competitive advantage.

Practical Implications

This research has several implications that might be useful for entrepreneurs as they recover from failure, for investors as they invest in companies that are started by individuals who have the experience of failure, and for entrepreneurs who are in the midst of running their company and would like to avoid some of the pitfalls their colleagues have made.

First, it appears that it is an entrepreneur's belief in their own ability to accomplish the work of starting up that is equally as important as actual skills (practical intelligence) and social support. There is no doubt that both skills and

support are necessary, but the mediating mechanism is the individual's belief in his or her own ability. Bandura (1997) described four principle sources of information used to construct self-efficacy beliefs. These four sources can be applied by entrepreneurs to improve entrepreneurial self-efficacy. The first, and most influential source is enactive mastery experiences, which are experiences an individual has had that serve as an indicator of capability, similar to practical intelligence. Another source is vicarious experience, in other words, social comparison and observational learning, which can lead to an increase in self-efficacy. Verbal persuasion, a third source of self-efficacy, is social influence that conveys the fact that an entrepreneur possesses certain capabilities. Positive and enabling comments from important "others" in an entrepreneur's life can have constructive benefits. Finally, physiological and affective states are used by people to judge their capableness, strengths, and vulnerabilities. This includes how intense the emotional and physical reactions are perceived and interpreted as well as the influence of mood. In practice, those who are close to entrepreneurs can point to the entrepreneurs' expertise and previous experience, share examples of other's success, sincerely compliment the entrepreneur and express confidence, as well as help to activate positive emotional reactions and mood.

Additionally, understanding the personal internal and external characteristics that enable learning and recovery from venture failure can improve the social and economic welfare of entrepreneurs (Baum et al., 2001) and their financiers (D. A. Shepherd, 1999). Further, entrepreneurs who recover and begin another successful business may well make a positive contribution to society. Teachers of entrepreneurship may adopt these findings to guide both nascent and seasoned

entrepreneurs, and venture capitalists may draw upon the results to enhance their investment criteria. Because entrepreneurship is the economic mechanism through which inefficiencies in national economies are identified and mitigated through innovation (Aldrich, 1999), any information which contributes to a theory of recovery from failure is profitable. Lastly, my findings may help those who design economic development programs to be more aware of, and sensitive to, the personal characteristics of the clientele they serve.

Limitations and Future Directions

As is the case with any study, this research has its limitations. One such limitation is the relatively small sample size of 73 entrepreneurs which may have limited my ability to detect significant effects among study variables. However, it is encouraging that despite this sample size, a number of the hypotheses were supported, and an alternative model was also supported. Although it was difficult to find a large number of entrepreneurs who had failed and also started a new company, perhaps in future studies researchers will find alternative and better ways of contacting subjects. One of the difficulties associated with generating enough contacts was the lack of contact from small business development centers. While there are hundreds of these centers across the United States, I was only able to get a positive response from one. In the future it might be helpful to actually visit a number of small business development centers, develop a relationship with them, and let them know the value of the research being conducted in order for them to be more responsive.

Another limitation of this research exists in the single source nature of much of the data; however, I took precautions to minimize the bias associated with single

source data (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). First, I mean-centered all scales to control for multicollinearity in the interaction terms, as recommended by Aiken and West (1991). Secondly, I conducted an exploratory factor analysis using principal components analysis to ascertain whether the items loaded on to common latent factors. I entered all of the survey measure items into the analysis using Varimax rotation. Each emerged as separate and independent constructs. A third action I took prior to testing the hypotheses was to run a Harman one-factor test (Podsakoff & Organ, 1986) to see whether common method variance might account for my findings. All items from my control, predictor, and dependent variables failed to converge on to a single factor. Moreover, the fact that both practical intelligence and subsequent startup success were created by two independent and separate expert panels helps reduce the possibility of single source bias. A fourth action I took was to assure participants of strict confidentiality, and a final preventative action I took was to separate the questions on the survey that would provide a basis for the expert rating of subsequent startup success from questions associated with the predictor variables. While the data were collected at one point in time, there is a longitudinal component embedded in the study, due to fact that to qualify for this research the entrepreneur had to fail in the past and was directed to think about those feelings from the past.

A third limitation is found in the lack of results for hypothesis 1, i.e., that negative affect after failure has an influence on entrepreneurial self-efficacy. This lack of significance may be due to the design of asking subjects to retrospectively recall the time when their company closed down. It is possible that they were not able to accurately remember how it felt when they failed or that the current success

they were having minimized the feelings of the past. Future studies should attempt to capture the negative feelings of failed entrepreneurs as soon as possible after failure occurs to get a more accurate picture of the effects that negative affect might have on self-efficacy. A longitudinal study that measures negative affect and entrepreneurial self-efficacy soon after failure could be followed at a later date by a second survey that measures entrepreneurial self-efficacy and the dependent variable of subsequent success. Another issue with the negative affect variable is that the Hogan Grief Reaction Checklist was developed and validated with regards to bereaved adults who had experienced the death of a loved one (Hogan et al., 2001). A measure that is designed specifically for the failure of a business might better capture the experience of entrepreneurial failure. However, the failure of this concept to relate to subsequent success may be interesting of itself. That is, perhaps successful entrepreneurs have the capacity to put aside past negative affect and ignore its influence on the current venture. My finding regarding the positive influence of emotion regulation on entrepreneurial self-efficacy lends support to this conclusion.

Another limitation can be found in the convenience sampling that I performed after having limited success with the Bay Area work out firm. While on the one hand, the problems with sampling make it difficult to pinpoint specific industry effects, on the other hand, given the diversity of ventures represented in the sample, both in geography and industry; it is easier to generalize these findings to a broader population.

A final limitation has to do with the cross sectional nature of this study. It is possible that the variables are reversed, and that it is the entrepreneur's current

success that is influencing entrepreneurial self-efficacy, practical intelligence, emotion regulation, and perceptions of social support. Since this study is cross-sectional, it is not possible to determine the causality. As such, given these limitations, the results of this study should be interpreted with caution and should be viewed as a study of influence rather than a study of cause and effect.

Conclusion

The purpose of this dissertation was to investigate the internal and external influences that might have an effect on the success of an entrepreneur who has had a business fail. Seventy-three entrepreneurs who failed and then started a new business were the source for studying this information. Results from testing my hypotheses suggest support for the positive effect of entrepreneurial self-efficacy on subsequent startup success after the experience of failure. The results also suggest support for the mediating role of entrepreneurial self-efficacy, specifically, mediating the effects of practical intelligence and emotion regulation and partially mediating the effects of social support on subsequent startup success. Additional research is needed to better understand the role of negative affect, self-leadership, and external resource support in the experience of failed entrepreneurs, items which, contrary to my theory, did not receive support.

Research has shown that there is a lack of empirical work examining internal entrepreneurial factors (Frese & de Kruif, 2000; Rauch & Frese, 2007). Michael Frese and colleagues called for a renewed investigation of the individual characteristics possessed by the founder of the enterprise. I have attempted to do so by studying the internal and external factors that influence entrepreneurial success after failure. I hope

that this dissertation begins to answer their call and helps advance research in this area.

Appendices

Appendix 1: Participant consent form

Why is this research being done?

This is a research project being conducted by Alan D. Boss, a doctoral student in the Robert H. Smith School of Business at the University of Maryland, College Park, under the guidance of Professor Henry P. Sims, Jr. (principal investigator) and Associate Professor J. Robert Baum of the Robert H. Smith School of Business at the University of Maryland, College Park. We invite you to participate in this research project because you are an entrepreneur who can help us with your professional knowledge of the entrepreneurial venture process. The purpose of this research project is to examine the effect of entrepreneurs' characteristics on venture performance.

What will I be asked to do?

The procedure involves filling out an online survey, which will take approximately forty minutes. The questions will be related to your previous business, your current business (if applicable), and entrepreneur characteristics. As a symbol of our appreciation for your participation, you will be given a signed book written by the principal investigator.

What about confidentiality?

We will do our best to keep your personal information confidential. To help protect your confidentiality we will take the following steps: 1) Your name will not be directly included on your survey. 2) An arbitrary code will be assigned to you to log onto the survey website, and only you know your own code. The survey resides on a secured server. 3) All data will be kept in the secure office or computers of the principal investigator. 4) Only through the use of a master list, will we be able to link the survey to one's identity. The list will be stored separately from other data in the office of the principal investigator. 5) Only members of the research team will have access to the data. 6) Ten years after the last article based on this research is published, all files will be destroyed.

If we write a report or article about this research project, your identity will be protected to the maximum extent possible. Your information may be shared with representatives of the University of Maryland, College Park or governmental authorities if you or someone else is in danger or if we are required to do so by law.

What are the risks of this research?

Based on our research topic, there is little risk of any damage due to participation in this study. The major potential risk is a possible breach of confidentiality somewhere in the process. Yet a series of steps will be taken to protect your confidentiality and privacy. This survey will take approximately 40 minutes to complete. If this time will cause financial loss to you, we encourage you not to participate.

What are the benefits of this research?

This research is not designed to benefit you personally, but the results may help the investigators learn more about the characteristics of entrepreneurs, as well as the determinants of venture performance. An overall report of the results of the study will eventually be made available to you. Finally, we hope that, in the future, other people might benefit from this study through improved understanding of the relationship between entrepreneurs'

characteristics and venture performance.

Do I have to be in this research? May I stop participating at any time?

Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify.

What if I have questions?

This research is being guided by Henry P. Sims, Jr., Department of Management and Organization, at the University of Maryland, College Park. If you have any questions about the research study itself, please contact Henry P. Sims, Jr. at: 4510 Van Munching Hall, University of Maryland, College Park, MD 20742; hsims@rhsmith.umd.edu; 301-486-0787.

If you have questions about your rights as a research subject or wish to report a research-related injury, please contact: Institutional Review Board Office, University of Maryland, College Park, Maryland, 20742; irb@deans.umd.edu; 301-405-0678. This research has been reviewed according to the University of Maryland, College Park IRB procedures for research involving human subjects.

Statement of Age of Subject and Consent

By checking "Yes" below, you indicate that:

- you are at least 18 years of age;
- the research has been explained to you;
- your questions have been fully answered; and
- you freely and voluntarily choose to participate in this research project.

I certify that I am at least 18 years of age, and I consent to participate in this research project.

- Yes
 No

Appendix 2: Semi-structured interview protocol for failed entrepreneurs

Hi, my name is Alan Boss and I am a PhD student at the University of Maryland.

I am contacting founders of companies that stopped doing business between 5 and 8 years ago.

I wonder if I might ask you a few questions about your company.

How did you get to where you are today?

General: Tell me about the company, why did it go out of business? What happened?
Then what happened? Etc.

Specific: Was it circumstances beyond your control, or within your control

How did you feel when the business failed? What were your emotions in general?
Specific: were you angry, frustrated, sad?

What do you think the drivers are to start a new business? (Motivation)

What kinds of things help when starting a new business?

Where have you found support for starting a new business?

Tell me about your confidence for future success of this business.

What do you think will contribute to future success of your venture?

What personal actions and emotions do you think contribute to the future success of your venture?

I wanted to confirm your current information.

Email:

Telephone:

I really appreciate your helpfulness today. Thank you so much....

Appendix 3: Example ad on a social networking site

Discussion on LinkedIn

Subject: Looking for Entrepreneurs who have gone out of business to participate in research

I am looking for entrepreneurs who have gone out of business to participate in a research study.

I am investigating entrepreneurs whose enterprise has closed down or failed. I am interested in how they react as they go through this stressful process, and whether they start up another business. In essence, I am interested in whether and how entrepreneurs recover from this traumatic event.

To qualify for this research, your company must have been in business for at least 1 year and employed at least 1 other person.

The survey takes about 45 minutes to complete and has been approved by our Institutional Research Board, which oversees the ethical conduct of our university research.

As a small token of appreciation, I will send an autographed book on leadership by Professor Henry Sims (a \$35 value) and the results of my study.

If you are an entrepreneur who has had a company go out of business, please click on the link below.

If you know anyone who might be interested in and qualify to participate in this research, please forward this note.

Survey link:

<https://www.ippscorp.com/ctools/umd/survey/autologin.php?code=87fabb18f38548d73b059a44d5e2d059>

Thank you so much for your help!

Alan

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Appendix 4: Survey measures

Negative Affect

Hogan Grief Reaction Checklist (HGRC) (Hogan et al., 2001)

Instructions: Take a moment to think back to the time that your business closed, including the weeks leading up to the closure and especially the month after. Below is a list of thoughts and feelings that you may have had after your business closed. Please read each statement carefully, and choose the number that best describes the way you felt at that time.

1	2	3	4	5
<i>Does not describe me at all</i>	<i>Does not quite describe me</i>	<i>Describes me fairly well</i>	<i>Describes me well</i>	<i>Describes me very well</i>

Despair

- My hopes were shattered
- I had little control over my sadness
- I felt like I was in shock
- I felt heaviness in my heart
- I agonized over closing the business
- I felt like I was walking in my sleep
- I felt hopeless

Panic Behavior

- I worried excessively
- I often had headaches
- I frequently had muscle tension
- I had panic attacks over nothing
- I was frequently fatigued
- I felt sick more often
- I startled easily

Blame and Anger

- I frequently felt bitter
- I was resentful
- I felt revengeful
- I had hostile feelings
- I blamed others
- I wanted to harm others
- I got angry often

Relief (created for this study)

- I was relieved to have it over with
- I felt relief that it ended
- I was relieved to find some closure
- I would say I was relieved

Entrepreneurial Self-efficacy
(Adapted from DeNoble et al, 1999 & Chen, Greene, & Crick, 1998)

Instructions: Think about your past and current businesses. Please read the following statements and indicate how true each statement is in describing you.

<i>Not at all true</i>	<i>Slightly true</i>	<i>Somewhat true</i>	<i>Mostly true</i>	<i>Completely true</i>
1	2	3	4	5

Dealing with Uncertainty

- I can take calculated risks.
- I can make decisions under uncertainty and risk.
- I can work productively under continuous stress, pressure, and conflict.
- I can tolerate unexpected changes in business conditions.
- I can persist in the face of adversity.

Financial Control

- I can perform financial analysis.
- I can develop a financial system and internal controls.
- I can control costs.

Developing New Product and Market Opportunities

- I can see new market opportunities for new products and services.
- I discover new ways to improve existing products/services.
- I can identify new areas for potential growth.
- I can design products/services that solve current problems.
- I can create products/services that fulfill customers' unmet needs.
- I can bring product concepts to market in a timely manner.
- I can determine what the business will look like.

Developing Critical Human Resources

- I can recruit and train key employees.
- I can develop contingency plans to backfill key technical staff.
- I can identify and build management teams.

Initiating Investor Relationships

- I can develop and maintain favorable relationships with potential investors.
- I can develop relationships with key people who are connected to capital sources.
- I can identify potential sources of funding for investment.

Subsequent Startup Success

In this section, please provide information ABOUT YOUR CURRENT BUSINESS.

If you have founded another company/companies, please choose the most successful one, or one that is currently in business, and provide additional information.

1. What is the name of the company? _____
2. When did you start this company (month/year)? _____
3. What does this company do (service, product, process, etc.):

4. Does your firm innovate mainly: products / services / markets ?

a. If Products

How many completely new products has your company developed in the last year? _____ ...in the last 3 years? _____

b. If Services

How many completely new services has your company developed in the last year? _____ ...in the last 3 years? _____

c. If Markets

How many completely new markets has your company entered/developed in the last year? _____ ...in the last 3 years? _____

5. In what industry would you classify this business? _____
6. How many years experience do you have in this industry? _____
7. At what *operating* stage would you consider this company?

Dreaming	Emergence, startup	Revenues and employees	Expansion	Rapid growth	Maturity
A	B	C	D	E	F

8. At what *financing* stage would you consider this company?

Seed	First / Series A	Second / Series B	Third / Series C	Bridge / Mezzanine / IPO	Not Applicable
A	B	C	D	E	F

9. Do you subcontract your sales? ____ Yes ____ No

10. Do you subcontract your distribution? ____ Yes ____ No ____ Not Applicable

11. What is the target market of this business (who do you sell to)? _____
12. What is the maximum number of employees this new company has or had? _____
13. What is the maximum annual sales of this new company? _____
14. Please list the last 5-6 years of **annual sales** in your **new** firm. (If your business was not running during a particular year, please type N/A in the space provided)

2003 Sales (\$ in thousands) _____

2004 Sales (\$ in thousands) _____

2005 Sales (\$ in thousands) _____

2006 Sales (\$ in thousands) _____

2007 Sales (\$ in thousands) _____

2008 Sales (\$ in thousands) _____

2009 Sales (\$ in thousands) _____

2003 Employees _____

2004 Employees _____

2005 Employees _____

2006 Employees _____

2007 Employees _____

2008 Employees _____

2009 Employees _____

15. How many employees do you expect this new company to have in:
5 years? _____
10 years? _____
20 years? _____

Emotion Regulation
(Wong & Law 2002; Law, Wong, Song, 2004)

Instructions: Please read the following statements and rate each with regard to how strongly you agree or disagree.

<i>Strongly disagree</i>	<i>Disagree</i>	<i>Neutral (neither disagree nor agree)</i>	<i>Agree</i>	<i>Strongly agree</i>
1	2	3	4	5

- I am able to control my temper so that I can handle difficulties rationally.
I am quite capable of controlling my own emotions.
I can always calm down quickly when I am very angry.
I have good control of my own emotions.

Practical Intelligence
(based on Sternberg et al., 1995b; Baum & Bird, 2010)

Instructions: This section includes a scenario that you might come across as an entrepreneur. After the scenario is a list of things you might consider doing. Please rank the importance of each by giving a “1” to the most important, a “2” to the second most important, a “3” to the third, etc. It is best to read all 10 ideas first and then go back and rank them from favorite to least favorite. Your #1 might be what you would do first, and #10 might be something that you would never do.

Scenario: Assume that you have dreamed of starting an enterprise software company, and you have finally decided to begin the process. You have written the code that allows instantaneous integration between inventory levels and orders from preferred suppliers. Your competitive advantage is high value and is attractive to small businesses. A few minutes ago, your friend said that he will lend you the \$150,000 needed to start-up. What will you do next? *Remember: Rank 1 to 10 with 1 being what you would do first.*

- Buy office furniture
- Establish an LLC (Limited Liability Company)
- Focus on producing a working prototype
- Go to a lawyer and draw up financing documents
- Contact five companies that might serve as beta sites
- File for a copyright / patent
- Hire a chief technical officer
- Hire a salesperson
- Take your angel lender to dinner
- Contract with a public relations firm to promote your product

Self-leadership

(Houghton & Neck, 2002) (Revised self-leadership Questionnaire-RSLQ)

Instructions: Read each of the following items carefully and try to decide how true the statement is in describing you.

1 <i>Not at all true</i>	2 <i>Slightly true</i>	3 <i>Somewhat true</i>	4 <i>Mostly true</i>	5 <i>Completely true</i>
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Visualizing successful performance

- I use my imagination to picture myself performing well on important tasks.
- Sometimes I picture in my mind a successful performance before I actually do a task.
- I purposefully visualize myself overcoming the challenges I face.

Self-goal setting

- I establish specific goals for my own performance.
- I consciously have goals in mind for my work efforts.
- I work toward specific goals I have set for myself.

Self-talk

- Sometimes I find I'm talking to myself (out loud or in my head) to help me deal with difficult problems I face.
- Sometimes I talk to myself (out loud or in my head) to work through difficult situations.
- When I'm in difficult situations I will sometimes talk to myself (out loud or in my head) to help me get through it.

Self-reward

- When I do an assignment especially well, I like to treat myself to some thing or activity I especially enjoy.
- When I do something well, I reward myself with a special event such as a good dinner, movie, shopping trip, etc.
- When I have successfully completed a task, I often reward myself with something I like.

Evaluating beliefs and assumptions

- I think about my own beliefs and assumptions whenever I encounter a difficult situation.
- I try to mentally evaluate the accuracy of my own beliefs about situations I am having problems with.
- I think about and evaluate the beliefs and assumptions I hold.

Self-observation

- I usually am aware of how well I'm doing as I perform an activity.
- I pay attention to how well I'm doing in my work.
- I keep track of my progress on projects I'm working on.

Self-cueing

- I use written notes to remind myself of what I need to accomplish.
- I use concrete reminders (e.g., notes and lists) to help me focus on things I need to accomplish.

Social Support

(items 1-3: adapted from Dormann & Zapf, 1999; item 4: adapted from Van Yperen & Hagedoorn, 2003; item 5: created for this study)

Instructions: With your new business in mind, please answer the following questions.

1 <i>Not at all</i>	2 <i>To a small extent</i>	3 <i>To some extent</i>	4 <i>To a moderate/considerable extent</i>	5 <i>To a great extent</i>
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1. To what extent can the following people **be relied upon** when things get tough at work?

- Colleagues at my firm
- Spouse/Family
- Friends outside of work

2. To what extent are the following people **willing to listen** to your work-related problems?

- Colleagues at my firm
- Spouse/Family
- Friends outside of work

3. To what extent are the following people **helpful to you** to get your job done?

- Colleagues at my firm
- Spouse/Family
- Friends outside of work

4. To what extent do you currently **receive support from** the following people?

- Colleagues at my firm
- Spouse/Family
- Friends outside of work

5. To what extent have the following **served as a mentor** for your entrepreneurial efforts?

- Colleagues at my firm
- Spouse/Family
- Friends outside of work

Support from Formal Institutions and Financial Resources

Instructions: In regards to your new venture, please choose the number that represents the amount of overall support you receive from each of the following categories:

1 <i>No support at all</i>	2 <i>Very little support</i>	3 <i>Some support</i>	4 <i>A lot of support</i>	5 <i>An extremely high level of support</i>	N/A <i>Not applicable or don't know</i>
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Formal Institutions

- Suppliers
- Customers
- Helpful competitors
- Business partners
- Helpful government agencies
- Trade associations
- Board of Directors

Financial Groups

- Angel investors
- Bankers
- Government financing agencies
- Venture capitalists

Demographics and Controls

Are you:

Male _____

Female _____

How old are you? _____

What is your ethnicity?

1. African-American
2. Asian
3. Caucasian
4. Hispanic
5. Native American
6. Other

What is the highest level of education you have completed?

1. Less than High School
2. High School Graduate
3. Some College
4. 2 Year College
5. 3 Year College (Diploma Graduate)
6. Bachelor's Degree
7. Graduate Degree in Progress
8. Master's Degree
9. Doctorate/MD/JD

How many of the companies you founded in the past have gone out of business? _____

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