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Pepperdine University
Graduate School of Education and Psychology

THE FOUNDER'S VISION & ITS INFLUENCE
ON THE OUTCOMES
OF HIGH TECH START-UP COMPANIES

A dissertation proposal submitted in partial satisfaction
of the requirements for the degree of
Doctor of Education in Organization Change

by

Reginald J. Murray

March, 2009

Robert M. Canady, D.B.A. – Dissertation Chairperson

This dissertation, written by

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DOCTOR OF EDUCATION

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DEDICATION

This work is dedicated to my wife, Helen, who has selflessly tolerated my pursuit of this academic endeavor for a period of over five years; to my children Sarah, Sean and Sheila, who I hope will be inspired to pursue the benefits and satisfaction of a life-long education and to my parents John and Elizabeth Murray, who have provided me with steadfast encouragement and support.

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I am indebted to the seven current and retired senior executives who assisted me with my Pilot Study and the development of my survey instrument. These gentlemen share my faith, enthusiasm and interest in Venture Funded High Tech Start-up Companies (VFSCs). They contributed their time, ideas, suggestions and thoughts willingly and enthusiastically.

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several of these individuals were at once enlightening and encouraging. Their concerns for the health and prosperity of the VC industry, and their willingness to contribute their ideas, knowledge and experiences reaffirmed my confidence and faith in the VC industry and its leadership.

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ABSTRACT

This study examined the impact of sustaining, changing or disregarding the founder's vision on the outcomes of Venture Funded High Tech Start-up Companies (VFSCs). The motivation for the study was to provide knowledge that would enable Venture Capital (VC) investors to enhance their investment portfolio success rates. A model (VFSC Success – Failure continuum) was developed and introduced to provide a framework for the study. This model broke the universe of VFSC companies into two groups; those that have had their fates decided, namely Super-successes, Successes and Failures and those whose fate remained to be decided, namely Projected Successes and Living Dead. A theory was proposed that suggested sustaining the founder's vision through-out the pre-IPO period enhanced the probability of VFSC success, and that changing or disregarding the founder's vision led to Living Dead and/or Failure *firm outcomes*.

The study was segmented into three phases: (a) a Pilot Study established survey instrument *content validity* and *test-retest reliability*; (b) an electronic survey instrument captured the data required to examine the study's theory and research questions; and (c) a Non-response Bias Test established that no statistically significant difference existed between the survey and non-respondent sample data sets. The study investigated five primary research questions related to sustaining the founder's vision, vision change and disregarding the (founder's) vision and their influence on firm outcomes. Twenty-one secondary research questions examined contextual variables and current industry success/failure rates.

The significant outcomes from this study are (a) vision change classifications, vision change, vision disregard and sustaining the (founder's) vision, had limited, but not

insignificant impact on firm outcomes, (b) contextual variables, vision valuation, vision clarity and vision conformity (with the study's definition), influenced firm outcomes, (c) articulation of (founder's) visions in writing was linked to very clear visions, vision conformity, and vision valuation by VFSC directors; and (d) the influence of succession events on firm outcomes and vision change classifications was found to be statistically insignificant. The study concluded by identifying its limitations and suggesting a number of areas for future research and investigation.

Chapter 1: Introduction

Acronyms, Definitions, & Syntax

The study or field of entrepreneurship is an integration of several classical fields of academic study. As such, acronyms, commonly used in the various classical fields, have been adopted and are used in the field of entrepreneurship. Appendix A, Table 78, presents a list of acronyms, an expanded form of what the alpha characters in the acronym represent, and a brief explanation of what the acronym means in the context of this document.

The field of entrepreneurship utilizes numerous terms that have meanings which are unique to the field, have been borrowed from other fields where they have unique meanings, or have meanings which are different from those generally understood by the public at large. Appendix B provides a list of definitions for terms that have a specific meaning in the context of this study. In most cases in the text (of the study), the terms are italicized in the first instance they are encountered. Every attempt has been made to comply with the *Publication Manual of the American Psychological Association (5th edition)*. In a few cases, terms are italicized more than once to accentuate their significance.

Focus

The focus of this study will be in the field of entrepreneurship with an emphasis on the study of new enterprise formation (as cited in Low & MacMillan, 1988, p. 27). Shane & Venkataraman (2000) defined the field of entrepreneurship as “the scholarly examination of how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited” (p. 218). More specifically, this

study will focus on Venture Funded High Tech Start-up Companies (VFSCs) and their *founders'* (Nelson, 2003) *visions* (Baum, Locke, & Kirkpatrick, 1998; Bennis & Nanus, 2003; Collins & Porras, 1991; Conger & Kanungo, 1987; Fillion, 1991; Kouzes & Posner, 1987; Lichtenstein, Dooley, & Lumpkin, 2006; Shamir, House, & Arthur, 1993; Westley & Mintzberg, 1989). The significance of losing, morphing, changing, misunderstanding, or obscuring founders' visions will be examined to determine if these actions or conditions enhance the probability of VFSCs becoming what are commonly referred to as *Loser, Living Dead* or *Failure* firms. Ruhnka, Feldman & Dean (1992), identified the key characteristic of Living Dead firms as, "they have very poor prospects for producing a successful *exit* or *harvest* (Petty, 1997) for their investors, usually because of more limited growth than originally anticipated or inadequate profitability" (p. 137).

Purpose

The purpose of this study was threefold:

1. To determine if *management's* periodic monitoring of pre-IPO (pre-*Initial Public Offering*) VFSC firms to discern whether or not the *founder's vision* was sustained leads to a reduction in the percentage of *Living Dead* or *Failure* firms.
2. To ascertain a measure of the relative importance of the founder's vision to the success of VFSCs.
3. To make a contribution to the literature in the field of entrepreneurship.

Motivation/Background

The motivation for this study comes from my desire to identify management tools, principles and concepts, which can enhance the success rate of VFSCs. Having

been a founder of a VFSC firm, which held a successful Initial Public Offering (IPO) and survived for four years without realizing a significant economic benefit, I have a strong personal interest in seeing that the number of other entrepreneurs who experience the adversity I went through is minimized. The commitment of entrepreneurs to their companies and the toll it takes on their lives and families have been well chronicled in the entrepreneurship literature (Boyd & Gumpert, 1984; Brockhaus, 1985; Nesheim, 2000; Roberts, 1991; Vesper, 1990).

I would also like to provide the Venture Capital (VC) community and management teams with a metric and/or management tool(s), which I hope will prove useful in improving the success rates of their investment portfolios. For purposes of this study, I define a *Success* as a VFSC firm which has held a successful IPO. A small improvement in VFSC portfolio success rate could provide renewed strength to the US VC industry at a time when competition for VC money is taking on a global dimension (Deloitte & Touche & NVCA, 2005). As with any business, the best way to secure future investment is to provide a superior *rate of return*. A one percent improvement in VC fund *internal rate of return* (IRR) from 15%, the typical return rate quoted in the literature, to 16% would have increased US VC portfolio returns by \$250 million per annum in 2006. The 15% figure was taken from studies on VC rates of return by Petty (1997) in the US and Mason & Harrison (2002) in the UK. Petty's study of the US VC market states, "Based on limited evidence, the returns have only returned to the 15 to 20 percent range" (p. 88). Nonetheless, an incremental return of \$250 million per annum over a period of six to ten years (eight year average), the typical harvest period for a VFSC investment (Petty, 1997), would realize an incremental \$2 billion in returns over that time period. If

one assumes only half of the incremental \$2 billion is reinvested in future VFSCs, then one could argue the incremental returns could drive the formation of 90 new VFSC firms in the US based on reports issued by Ernst & Young and Dow Jones VentureOne (Loizos, 2007).

From a Silicon Valley perspective, a 1% improvement in VC industry IRR would have resulted in an increased annual investment return of \$90 million in 2006. Using the same assumption set that was used for the entire US VC industry above; this translates into the formation of an incremental 33 firms over the same eight year average harvest period. While it is difficult perhaps even impossible to accurately project the number of sustainable jobs that will be created from the establishment of an incremental 33 firms (past VFSCs may not be representative of the types of firms that will be formed in the future), history suggests that approximately 10% of VFSCs become large public corporations or are largely integrated into other large firms (Nesheim, 2000). These firms typically create tens of thousands of jobs. The names Intel, Yahoo, Cisco, Apple, Google, Sun Microsystems, Microsoft, and Amgen to name a few come to mind.

However, it is not just enhanced investment returns, future investment or numbers of jobs that are at stake. The types of jobs created by VFSCs are some of the best paying and most desirable jobs available in the economy (Kazmierczak, 2007). They not only provide a highly attractive income today, but they facilitate the aggregation of an *entrepreneurial milieu* composed of investors, entrepreneurs, managers, and technical professionals; what (Carlton, 1978) calls *agglomeration economics*. Agglomeration economics forms the nexus for what Schumpeter (1934) referred to as *creative*

destruction in the economy or the simultaneous economic expansion and contraction that results in healthy overall economic growth.

Numerous studies (Almus & Nerlinger, 1999; Freear, Sohl, & Wetzel Jr., 1997; Kirchoff & Acs, 1997; Kirchoff & Phillips, 1988; Regan & Mauer, 1984; Timmons & Bygrave, 1997) have highlighted the economic benefits of new venture formation. Freear et al., (1997) noted that in the US in the period from 1979 to 1995, “While Fortune 500 payrolls declined by over 4 million jobs, the entrepreneurial economy generated over 24 million jobs. About 75% of these jobs were created by fewer than 10 percent of small firms” (p. 47). This data is consistent with (Reynolds, 1986), who reported that the start-up firms most likely to survive in the state of Minnesota were fast growth, *large-capitalization (large-cap) firms*, and (Audretsch, 1991) who reported that small firms that innovate continuously are the most likely to survive. Numerous other studies have pointed out that VFSCs have an unusually high success rate (Doutriaux, 1984; Kirchoff & Phillips, 1988; Nesheim, 2000; Sexton & Smilor, 1986; Tyebjee & Bruno, 1982; Weiss, 1981). Although the success rate for VFSCs has trended down over the last thirty years, it is still considered far superior to the success rates of all other forms of entrepreneurial enterprise. During the 1960’s, VFSC success rates in the Boston Route 128 area were determined to be in the 80% range (Roberts & Wainer, 1968). VFSC success rates in the San Francisco Bay Area (Silicon Valley) in the 1970’s were determined to be 70% in the first 10 years of operation (Cooper & Bruno, 1977). VFSC success rates in Ottawa, Canada were determined to be 62% in the first 10 years of operation (Litvak & Maule, 1980). This compares with a success rate for all new enterprises of between 20% and 50% (Shapero & Giglierano, 1982). Sandberg & Hofer

(1982) contend the percentage of all US firms that survive longer than five years is only 25%. The *dot.com bust* obviously had a major impact on success rates of VFSCs in the early years of the new millennium, but after several years of retrenchment, the VC industry is once again investing at a healthy pace. US VC investments in the US grew by over 9% in 2006, and they are now approaching 2001 pre-dot.com bust levels (Loizos, 2007).

The VC community's investments have been a principal driving force in the economy of Silicon Valley where I reside, and in other regional technology hubs in the US for many years (Content First, 2007). Silicon Valley firms received \$9 billion in VC investments in 2006, or 35% of the \$25.75 billion, which was invested by the US based VC industry in the US in the same time period. \$25.75 billion represented roughly 0.2% of US GDP in 2006. On the other hand, VC backed companies, both currently backed and formerly backed, generated revenues totaling 16.6% of US GDP (\$2.1 trillion), and provided 9% of US private sector employment (10 million jobs) in 2005. It is small wonder that Silicon Valley's entrepreneurial culture is the envy of the business world.

Looking to the future, Silicon Valley's economic dependence on being the *kernel* of technological innovation and entrepreneurship has never been more manifest. Silicon Valley and the San Francisco Bay Area is now the most expensive place to live in the US (Abate, 2005). The success it has enjoyed has transformed the region from one based on labor-intensive low-cost light manufacturing and agriculture to one based on intellectual property rights, technology development, management skills, and financial services. This agglomeration economics will only be able to sustain itself from an economic standpoint

if it continues to be the focal point of VC investment, and the driver of the evolution of High Tech products and services.

Living Dead

The earliest reference to the Living Dead in the literature has been attributed to (Wilson, 1985). He described the condition as, “Dragging out a miserable existence as a ‘Living Dead’.” Franklin (“Pitch”) Johnson of Asset Management, a Palo Alto based VC firm, has been recognized as the person responsible for coining the term (Bourgeois III & Eisenhardt, 1987). Cooper, Gimeno-Gascon & Woo (1994) refer to three possible performance outcomes: *Failure*, *Marginal Survival*, or *High Growth*. Litvak & Maule (1980) identified a category of firms, which they called *Marginal Survivors*; they claim differ from *Failures* only from the “sheer determination and endurance of the managers of such firms” (p. 72). *Marginal Survivors* and *Living Dead* appear to represent similar if not the same classification of firms.

The study by Ruhnka et al. (1992) is the most frequently cited reference on the subject of the Living Dead. Their study described venture capital investments in terms of *Projected Winners*, *Projected Losers* and *Living Dead*. Their study of 80 VFSCs found that 55.2% of active portfolio firms were termed *Winners* or successful investments, 24.2% were termed *Losers* or companies that would go out of business and 20.6% of firms were categorized as *Living Dead*. Of the 20.6% of firms labeled *Living Dead*, 11.5% were eventually successfully harvested. The remaining 9.1% of the *Living Dead* population eventually failed. According to Ruhnka et al. (1992):

When Living Dead situations occur, venture capital managers use a number of strategies to attempt to turn around these companies or to achieve an exit. The

most-often-used strategy was to attempt to sell or merge the company, but usually only after one or more preliminary steps to turnaround the company had been attempted first, including replacing investee management, *repositioning* the product, and making revisions to the venture opportunity strategy. (p.138)

It is apparent from the above quotation that Living Dead investments are problematic from several points-of-view. They have difficulty achieving the desired rate of return, they require higher degrees of management attention for longer periods of time and a significant number of them fail in any event.

Founder's Vision

The *founder's vision, corporate vision* or *vision* has been extensively highlighted in the literature as an important ingredient in the success of VFSCs and companies in general (Abetti, 1997, 2003; Amit, MacCrimmon, Zietsma, & Oesch, 2001; Barringer, Jones, & Neubaum, 2004; Baum et al., 1998; Baum, Locke, & Smith, 2001; Collins & Porras, 1991; Conger & Kanungo, 1987; Fillion, 1991; Hambrick & Crozier, 1985; Jain & Tabak, 2007; Lichtenstein et al., 2006; Manimala, 1992; McDougall, Shane, & Oviatt, 1994; Nelson, 2003; Shamir et al., 1993; von Krogh & Cusumano, 2001, Winter; Wasserman, 2003; West III & Meyer, 1998; Westley & Mintzberg, 1989). Interestingly, this contrasts with some firms which have been characterized as extremely successful despite the complete absence of a vision; R.M. Canady, (personal communication, March 26, 2007).

The literature does not present a precise definition of *vision*, but there are several converging definitions, which adequately circumscribe the concept. Conger and Kanungo (1987) define vision as, "some idealized goal that the leader (founder) wants the

organization to achieve in the future” (p.640). Collins and Porras (1991) state, “At the broadest level, *vision* consists of two major components—a Guiding Philosophy that, in the context of expected future environments, leads to a Tangible Image” (p. 33). Fillion (1991) defines *vision* as, “a projection: an image projected into the future of the place the entrepreneur wants his products to occupy eventually on the market, and also an image of the type of enterprise needed to get there. In short, vision refers to where he wants to take his enterprise” (p. 28). House and Shamir (1993) defined *vision* as, “an ideal that represents or reflects the *shared values* (McDonald & Gandz, 1992) to which the organization should aspire” (p. 588). Kouzes & Posner (1987) defined *vision* as, “an ideal and unique image of the future.”

At this point, it may be prudent to draw a distinction between what *vision* represents and what is commonly referred to as *mission* or *corporate mission*. The two words are unfortunately used interchangeably in the literature. If *vision* is defined as an inspiring or compelling projection or image of what the future will look like or be, then I define *mission* as a guiding statement of what a corporation is going to pursue; in other words a statement of intent or action. Ackoff (1981) defines *mission* as a “purposive system in a business entity that provides cohesiveness and the ability to plan in an integrated way” (p. 107).

Study Rationale & Goal

The rationale for investigating the Living Dead can be explained as follows: *Living Dead Failures* are probably the most likely group of candidates (from the 30 + % of VFSCs the literature claims invariably fail) to be rehabilitated from *Failures* into *Successes*. The dot.com bust increased the failure rate of VFSCs from 30% to 50% in the

early years of this decade. It is not clear whether the failure rate that resulted from the dot.com bust was a singular event or a foreshadowing of things to come (Laseter, Kirsch, & Goldfarb, 2007). Additionally, I would argue there is intrinsic value in developing a metric or tool with which management could potentially reduce the number of *Living Dead Successes* in the first place. Defining a *Success-Failure Continuum* provides a graphic means of elucidating the issue as illustrated in Figure 1.

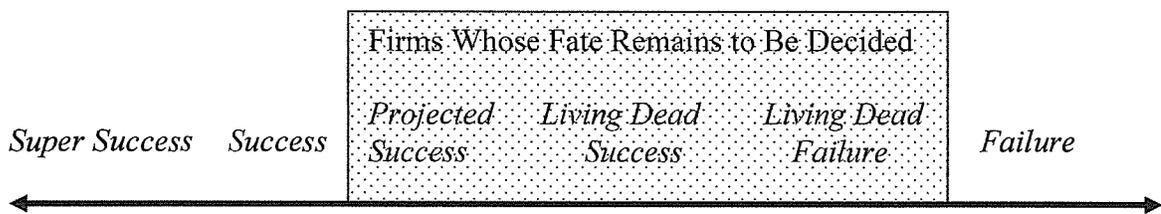


Figure 1. VFSC success – failure continuum.

For purposes of this study, the categories of *Living Dead* and *Losers* as defined by Ruhnka et al. (1992) (or *Projected Losers*) will be combined and defined as *Living Dead*. An explanation for why this definition has been used in this study is presented below in the *Assumptions* sub-section. In the VFSC universe, *Living Dead Successes* eventually are managed to success with a great deal of incremental managerial effort and resources, and *Living Dead Failures* are the firms destined to fail despite the incremental expenditure of management time and resources (Ruhnka et al.). That said I believe *Living Dead Failures* have the best chance of all the firms destined to fail to be turned into *Successes*. In a manner of speaking, one could argue the intent of this study is to provide management with additional ability to “pick off the low hanging fruit” on the *Success-Failure Continuum*. Hence, the goal of this study is to determine whether or not

sustaining the founder's vision throughout the pre-IPO period materially reduces the chance of a VFSC firm becoming a member of the *Living Dead* or *Failure* communities.

Assumptions

Four assumptions are intrinsic to this study. They should be taken into consideration when reading the text (of the study) and/or analyzing the research design and its results.

1. Ruhnka et al. (1992) articulated three types of firms that Venture Capitalists (VCs) hold in their portfolios of active companies prior to *distribution*; namely, *Winners*, *Living Dead* and *Losers*. The *Living Dead* are further segmented into firms that are eventually harvested (*Living Dead Successes*) and firms that eventually fail (*Living Dead Failures*). According to Ruhnka et al., VCs identify winners as firms held in their actively managed portfolio that have a high probability of success or are projected to be successful in terms of realizing a return on their investment. (This typically implies a successful initial public offering (IPO) of shares in a public market or on a stock exchange.) VCs identify Losers as firms held in their actively managed portfolio that have a high probability of failing or firms they project will ultimately fail. For purposes of reducing the complexity of analysis, this study combines Ruhnka et al.'s *Living Dead Failures* and *Losers* into one category of firm labeled *Living Dead Failures*. A graphic depiction of the universe of VFSC firms was provided in *Figure 1*, which looks at the VFSC universe through the *lens* of the VC community; discussed below.

2. This study will necessarily be conducted through the lens of the venture capital investment community. The reason for using the VC community's lens becomes clear when one tries to define the level of success or failure of a VFSC firm. Numerous researchers have studied success and failure among VFSC firms, but none have been able to precisely define either term because in most cases, success or failure (of a firm) is a function of each entrepreneur's personal goals and objectives (Amit et al., 2001; Baum et al., 2001; Bourgeois III & Eisenhardt, 1987; Mayer & Goldstein, 1961; Nelson, 2003; Roberts, 1991; Stuart & Abetti, 1986). Entrepreneurs' goals and objectives can be and frequently are at odds with the goals and objectives set by venture capital investors (Bruton, Fried, & Hisrich, 1997; Rea, 1989). Venture capitalists' goals and objectives; on the other hand, are quite consistent in that they are invariably aligned with trying to maximize the returns on their investments. From the VC's perspective, return maximization is ideally achieved via the selling of their shares (in a firm) acquired in return for providing the investment capital needed to start a new enterprise at or shortly after the IPO (Mason & Harrison, 2002; Petty, 1997). Said another way; the VC community has the means to consistently define the level of success or failure (of a firm) by virtue of the fact success or failure can be measured against the *gold standard* of return on investment (ROI). Winners or Successes achieve some amount of return on their investment, Living Dead firms may or may not realize a return on their investment, and Losers or Failures do not realize a return on their investment.

3. The VFSC universe, defined in this study, does not attempt to account for *VC actions* that attempt to salvage some percentage of their Living Dead or failing investments. Incorporating a classification of firms resulting from VC actions (into the study) would add another layer of complexity to an already complex inquiry. It must be acknowledged that in some instances VC actions have been known to lead to successful investments from an ROI point of view over the *long term*. They do not, however, represent the ideal VC investment outcome for the types of firms, i.e. VFSCs, this study attempted to examine. Several examples of typical VC actions include mergers of private (pre-IPO) firms with other private firms, mergers of private firms with public firms, pre-IPO sales (of firms) to other investors be they private, corporate, or otherwise, *firesales* to any interested party, trades or swaps of shares, or *reorganizations*. For purposes of this study, I have taken the view that the surviving entity of a VC action is a new entity in the start-up universe; i.e., a reconstituted firm that lies somewhere along the Success-Failure Continuum at a different point in the time domain.
4. The definition of a *Super-success* firm used in this study; i.e. a firm which has successfully held an IPO and is touted on a VC's website as an example of a *Success*, requires that only firms which have been pre-IPO firms in the last ten years can be surveyed. The internet was not available on a large scale commercial basis prior to that time.

Theoretical Considerations & Research Questions

The literature, which will be reviewed in *Chapter 2* of this study, does not appear to contain any studies which have examined why potentially successful VFSCs end up becoming Living Dead firms. The studies I have read merely report their existence. This study was conducted to determine if there is a statistically significant relationship between the sustaining of a founder's vision throughout the pre-IPO period and *success* (defined below). However, I am obligated to point out that failure to sustain the founder's vision is but one of a potentially limitless number of reasons which can lead to firms finding themselves among the *Living Dead* or worse; outright *Failures* (Bruderl, Preisendorfer, & Ziegler, 1992; Bruno, Leidecker, & Harder, 1986; Dimov & Shepard, 2005; Hill & Hlavacek, 1977; MacMillan, Zemann, & Subbanarahimha, 1987). This study will not produce a *silver bullet*; but rather, it hopes to provide management with one criterion in a laundry list of items to be considered, which may prove useful to management, when it comes to avoiding the pitfalls which lead potentially successful VFSCs into the realms of the *Living Dead* and/or outright *Failure*.

Given the volume of literature which highlights the need for and benefits of sustaining a founder's vision, one might expect to see some similarity between the percentages of investor identified *Successes* and the percentage of pre-IPO investor *Projected Successes*. If sustaining the founder's vision throughout the pre-IPO period does in fact improve the probability of becoming a *Success*, then one might expect the percentage of *Living Dead* firms, which sustain the founder's vision, to be materially different (less) to the percentage of *Successes* which sustain the founder's vision throughout the pre-IPO period. For purposes of this study, a *Success* is defined as a firm

that has successfully held an IPO and gone public. A *Super-success* is defined as a *Success*, which venture capitalists (or investors) tout on their web-sites as examples of *Success*. This categorization differs from Roberts (1991) who defined *Super-successes* as firms which achieved a *Return on Equity* of greater than 15% per annum combined with revenue growth rates in excess of 30% per annum. The percentage of *Failure* firms, which sustained the founder's vision, might be expected to differ from the percentage of *Successes*, which sustained the founder's vision, even further than those identified as *Living Dead* differed.

Another means of testing the theory would be to determine whether or not the number of Super-successes, Successes, Projected Successes, Living Dead and Failures (obtained from a survey), which sustained the founder's vision, is materially different to the estimated, projected, or inferred number of firms, which sustained the founder's vision, that one would expect to find in an appropriately sized random sample containing each category of *firm outcome*. This latter approach is the one that will be used in this study.

The primary research questions addressed by this study were the following:

1. Was the number of VFSC *Super-successes*, which sustained the founder's vision (obtained via survey), materially different to the inferred or estimated number of firms, which were determined to have sustained the founder's vision, in an appropriately sized random sample of all categories of firm outcome.
2. Was the number of VFSC *Successes*, which sustained the founder's vision (obtained via survey), materially different to the inferred or estimated number

of firms, which were determined to have sustained the founder's vision, in an appropriately sized random sample of all categories of firm outcome.

3. Was the number of VFSC *Failures*, which sustained the founder's vision (obtained via survey), materially different to the inferred or estimated number of firms, which were determined to have sustained the founder's vision, in an appropriately sized random sample of all categories of firm outcome.
4. Was the number of VFSC *Projected Successes*, which sustained the founder's vision (obtained via survey), materially different to the inferred or estimated number of firms, which were determined to have sustained the founder's vision, in an appropriately sized random sample of all categories of firm outcome.
5. Was the number of VFSC *Living Dead*, which sustained the founder's vision (obtained via survey), materially different to the inferred or estimated number of firms, which were determined to have sustained the founder's vision, in an appropriately sized random sample of all categories of firm outcome.

Research Design

This study was *mixed method* by design using a survey questionnaire that employs a *Concurrent Transformative Strategy* (Creswell, 2003). The questionnaire was validated with the use of an exploratory study by me. The *population* from which the studied sample came was the 472 venture capital and *private equity* firms which are members of the National Venture Capital Association (NVCA). The expected response rate was between 10% and 20%. This figure was consistent with other studies of this type (Amit et

al., 2001; Fombrun & Wally, 1989; Hood & Young, 1993; MacMillan et al., 1987; Shepard, 1999; Wasserman, 2003). The study was segmented into three distinct parts.

1. Each of the 472 NVCA firms was asked to identify an executive (in the firm) who would be willing to contribute to the study. The executive was asked to select from his firm's portfolio of firms a *Super-success*, a *Success*, a *Projected Success*, a *Failure*, and a *Living Dead* firm using the definitions outlined in this study. One, all or any combination of the categories of firm outcomes was (were) selected depending on the executive's wishes and experience. A necessary constraint was the executive had to have been a Board member or an Officer in all the firms selected for study.
2. The participating executive in each firm was then asked whether or not the vision for each category of firm outcome reported on (in the survey) conformed to the following definition of vision provided with the survey instrument: *Vision* was defined as "a projection: an image projected into the future of the place the entrepreneur wants his products to occupy eventually on the market, and also an image of the type of enterprise needed to get there" (Filion, 1991). The timing for the evaluation of the vision was at the time of *initial* or *seed funding*. The time of initial or seed funding was defined as the time at which an outside or external source of funds provided funding in the form of an investment in exchange for equity in the firm. (This is frequently referred to as the first round financing). This was the qualitative element.

3. The participating executive was then asked whether or not the founder's vision was sustained throughout the pre-IPO period. This was the quantitative element.

The study used inferential statistical techniques to determine whether or not the samples, categorized by firm outcome, differed in a statistically significant manner from *expected values*. For ease of data manipulation, null hypotheses were developed for each of the research questions. The results of the statistical analysis were then used to draw conclusions about the importance of sustaining the founder's vision in pre-IPO VFSCs, and the weighting management should allocate to monitoring whether or not the founder's vision is being sustained during the pre-IPO period.

Summary

Chapter 2 provides a full assessment of the relevant literature to the purpose and goals of this study. It provides a chronology of key developments, events and observations, which have contributed to the development of the field of entrepreneurship. It locates the focus of this work within the established traditions of entrepreneurship study, and it identifies those academic fields (of study), which have historically not been associated with entrepreneurship, but nonetheless, have significantly influenced the evolution of the field (of entrepreneurship).

Chapter 3 provides a detailed description of the study methodology including the survey method and a description of the analyses that were performed in this study. Null hypotheses have been developed, and the statistical methods that were used to evaluate those null hypotheses are explained. The rationale and methodology for the exploratory

study have been described. A plan to evaluate the study's *validity* and *reliability measures* is presented.

Chapter 4 documents the results of the study, and it highlights the important findings. The results of the hypotheses testing are documented, and an assessment of the study's *reliability* and *validity* is provided.

Chapter 5 concludes the study with a discussion of the results and an assessment of their implications. The study's limitations are identified, and several recommendations for future research are suggested.

Chapter 2: Literature Review

Introduction

This literature review is intended to provide a comprehensive review of the literature, which frames, defines, documents, and promotes the study of the field of entrepreneurship. The review starts by highlighting some of the difficulties inherent in trying to frame the field. It proceeds to document the origins of the word, and to explicate several of the many definitions which have been constructed to define the term.

A large section of the literature review is devoted to chronicling the history of the field. This section covers the influences of economic science, the Austrian Traditions, both first and second generation, classical economics, US interest in the field, Joseph Schumpeter and the Schumpeterian Tradition, and the Behavioral Scientists. The review traces contributions from the fields of psychology, sociology, social anthropology, population ecology, and management science. The review attempts to provide an overview of the new or recent research directions in the field by aggregating published research into definitive *conversation areas*.

The review concludes by documenting the literature sources available to the researcher. The sources include books, conference proceedings, journals, industry promotional publications, and the popular press.

Entrepreneurship Frameworks

Numerous authors have made serious attempts at framing the entrepreneurship literature. Many have undertaken the task with an eye towards documenting what has been written, by whom, and what needs to be researched or studied in the future. Most have characterized the field as difficult if not impossible to definitively frame.

Descriptive words like fractured, adolescent, complicated, complex, fragmented, diverse, chaotic, and pre-science have been employed to describe the state of the field. The following list presents a select few of the authors who have contributed to the framing of the field of entrepreneurship (Aldrich & Baker, 1997; Amit, Glosten, & Muller, 1993; Baumol, 1968; Casson, 1982; Ireland, Reutzel, & Webb, 2005; Kent, Sexton, & Vesper, 1982; Landstrom, 2005; Low & MacMillan, 1988; Reynolds & White, 1997; Sexton & Kasarda, 1992; Sexton & Landstrom, 2000; Sexton & Smilor, 1986, 1997; Shane & Venkataraman, 2000; Stewart, 1991). The difference in the approach (to the framing of the field) taken by each of these authors varies significantly in some cases and less in others.

Baumol (1968), for example, associated entrepreneurship with economic theory. He pointed out why it is of concern to us, why economic theory could not provide “an illuminating formal analysis” of entrepreneurship, and why it was unlikely to do so in the future. Casson attempted to explain many of the aspects of entrepreneurship in terms of classical economic theory. He showed how the entrepreneur impacts supply/demand curves, and how the market restores equilibrium after economic disruption has occurred.

Kent, Sexton et al, Sexton and Smilor, Sexton and Kasarda, Reynolds and White, and Sexton and Landstrom took a different tack. They edited books based on papers, which covered *topics of interest* in an effort to provide a framework for the field and direction for future work. Aldrich and Baker in (Sexton & Smilor, 1997) performed a retrospective review of the literature, and then proceeded to segment the academic journals which addressed entrepreneurship into two groups: Group one publications were identified as those which published primarily *empirical articles*, and group two

publications were identified as those which published primarily *conceptual or think pieces*. Most of the publications identified by Aldrich and Baker are referenced in this study. Aldrich and Baker went on to categorize and quantify the methodologies used in entrepreneurship research, paying particular attention to the collections of papers presented at the annual Babson College Conference titled, *Frontiers of Entrepreneurship Research*.

Low and MacMillan took a critical retrospective tour of the entrepreneurship literature, highlighting the expanding interest in the field caused by job creation (Birch, 1979; Freear et al., 1997) and increased federal and local tax revenues (Regan & Mauer, 1984). They described entrepreneurship as a *phenomenon*, “intertwined with a complex set of contiguous and overlapping constructs such as management of change, innovation, technological and environmental turbulence, new product development, small business management, individualism and industry evolution.” They went on to describe how entrepreneurship can be investigated as follows: “Furthermore, the phenomenon can be productively investigated from disciplines as varied as economics, sociology, finance, history, psychology, and anthropology, each of which uses its own concepts and operates within its own terms or reference” (p. 141).

They also saw fit to point out the shortcomings of past research, and they made suggestions for the future direction of research in the field. The principle contribution of their paper was the specification of “six key specification decisions” they deemed necessary to “begin to assemble a research program in the area of entrepreneurship” (Low & MacMillan, 1988, p. 140).

Amit, Glosten and Muller (1993) and Shane and Venkataraman (2000) focused their efforts on identifying fundamental unanswered questions in the field of entrepreneurship. They used these unanswered questions as a means for framing what the field should address.

Ireland, Reutzel and Webb (2005) took a much narrower approach. They focused their efforts on reporting on the publication of entrepreneurship articles in the Academy of Management Journal (AMJ). After identifying the domain of entrepreneurship, they reported on the numbers, types and authors of publications in the AMJ since 1963.

The abundance of literature attempting to frame the field of entrepreneurship suggests the field suffers from a condition similar to the one used to describe the inherent source of instability in entrepreneurial companies, that is a “liability of newness” (Stinchcomb, 1965). Not only do the boundary conditions of the field change frequently, but the theories, concepts and principles undergo continuous critique and revision. In this cauldron of fomenting scholarly activity, two studies stand out for their ability to rationalize the *spaghetti-like* nature of the field of entrepreneurship. Bortman Jr.’s tables (Sexton & Smilor, 1986) show a comparison of research on entrepreneurship with research on Small Businesses, and they show a classification of empirical studies on entrepreneurship and small businesses. The first five chapters of (Landstrom, 2005) describe the complexity of framing the field, the historical roots of entrepreneurship and small business research, the emergence of an academic field, the international picture, and some of the pioneers of the field and their contributions. Landstrom’s study is particularly insightful because of the way he has cross-sectioned the literature showing how the various sub-field dimensions have been woven together into a complex

integrated fabric. The fabric captures the core or the essence of what constitutes the field today.

Entrepreneurship Defined

Origins of the Word

Many entrepreneurship authors lament the lack of a framework and/or a definition for the study of the field of entrepreneurship. Gartner (1990) identified 90 different attributes associated with the term, *entrepreneur*. However, the origins of the word itself are quite well understood. The first recorded written definition of the word, *entrepreneur*, appeared in 1437 in the *Dictionnaire de la langue française*. Three definitions for the word were delineated. The most common meaning is translated as “a person who is active and achieves something” (Landstrom, 2005, p. 10). The spoken word has been part of the French language since the 12th century, and it was often used in the context of brutal warlike activities. Other French authors used the word in the context of someone who was tough and prepared to risk his own life and fortune. At the beginning of the 17th century the word began to take on more of a risk-taking meaning. It came to mean someone who took on risks associated with big (state) projects. Eventually its meaning evolved to one of a person who took on work at a fixed price via contracts. Profit or loss risk was assumed by the entrepreneur, and it was determined by how well he managed the financial aspects of the project. This definition of *entrepreneur* was very common in French legal and economic literature in the 17th and 18th centuries.

No comparable word existed in the English language until more recent times. The English used the terms *undertaker* and *adventurer* to describe similar or equivalent functionaries to entrepreneurs. The word *undertaker* is a reasonably precise translation of

the French verb *entreprendre* which means to undertake something. The use of the word *adventurer* is attributed to references to real estate speculators in Ireland in the 15th century. In *A Dictionary of the English Language from 1755*, *adventurer* is defined as: “he that seeks occasion of hazard; he that puts himself in the hand of chance” (as cited in Landstrom, 2005, p. 11) Nonetheless, use of the word *undertaker* became more common over time. By the 18th century *undertaker* was taken to mean businessman, and by the end of the 18th century, the term *capitalist* had replaced *undertaker* in this context. According to Casson (1982), John Stuart Mill popularized the term *entrepreneur* in the English language in the 19th century.

Contemporary definitions of the term *entrepreneur* appear to have regressed in their degree of clarity. Webster’s defines the term as “one who organizes, manages, and assumes the risks of a business or enterprise.” Schumpeter (1934) added “the notion of innovator and former of new combinations” (Vesper, 1990, p. 2). Casson (1982) describes the definition of *entrepreneur* as “one of the more crucial and difficult aspects of (economic) theory” (p. 19). He takes a more fundamentalist tack by identifying two approaches to understanding the concept; a functional approach and an indicative approach.

The functional approach says quite simply “an entrepreneur is what an entrepreneur does.” The indicative approach provides a description of an entrepreneur by which he may be recognized.

Definition of Entrepreneurship

Entrepreneurship is more ambiguously defined than the term *entrepreneur*. M. Morris (1998) identified 77 different definitions in a review of journal articles and

textbooks. Kirzner (1973) defined the term by what it is not: “An element in all human action, which although crucial to economizing activity in general, cannot itself be analyzed in terms of economizing, maximizing, or efficiency criteria” (p. 31).

One of the earliest definitions of the term in its modern sense was provided by the French economist, Jean Baptiste Say (1767-1832). He defined *entrepreneurship* as: “The combining of factors of production into an organism” (as cited in Landstrom, 2005, p. 28).

Low & MacMillan (1988) chronicled the development of the term as follows:

1. Knight (1921) – “ability to predict the future.”
2. Schumpeter (1934) – “carrying out new combinations.”
3. Cole (1968) – “purposeful activity to initiate, maintain and develop a profit-oriented business.”
4. Kirzner (1973) – “the ability to correctly anticipate where the next market imperfections and imbalances will be.”
5. Leibenstein (1978) – “the ability to work harder and smarter than your competitor.”
6. Gartner (1985b) – “the creation of new organizations.”

They then proceeded to suggest their own twist on the definition; “the creation of new enterprise” (p. 141). Amit et al. (1993) defined *entrepreneurship* as, “the process of extracting profits from new, unique, and valuable combinations of resources in an uncertain and ambiguous environment” (p. 816). Shane & Venkataraman (2000) elaborated on existing definitions by defining the field as “the scholarly examination of how, by whom, and with what effects opportunities to create future goods and services

are discovered, evaluated and exploited” (p. 218). They went on to say: “Consequently, the field involves the study of sources of opportunities; the processes of discovery, evaluation, and exploitation of opportunities; and the set of individuals who discover, evaluate, and exploit them” (p. 218).

Further compilations of definitions of *entrepreneurship* are provided in Meyer, Neck, & Meeks (2002) and Landstrom (2005). Finally, Montanye (2006) offered the most recent synopsis or integration of concepts as follows: “*Entrepreneurship* is the process by which individuals acquire (property rights) in *economic rents* of their creation.”

Evolution of the Field of Entrepreneurship

Entrepreneurship is one of the oldest activities humans have conducted. The existence of trade routes, which facilitated barter exchange as far back as the Paleolithic Period, gives testament to humans’ desire and need to conduct this form of activity (Spencer & Thomas, 1969). The Greek philosopher, Xenophon (approx. 430-354 B.C.) noted the “adventurous and opportunity seeking activities of overseas merchants (as cited in Karyayiannis, 2003). As mentioned above, the concept of one who undertakes (a project such as the building of a fortification or cathedral) was well known to the French from the 12th century onwards (Landstrom, 2005).

Entrepreneurship in Economic Science

Entrepreneurship as a subject to be studied first appeared in French economic science literature. Richard Cantillon (approx. 1680-1734), an Irish born banker, wrote *Essai sur a Nature du Commerce en General*, published posthumously in 1755 (as cited in Landstrom, 2005, p. 29). In this work, Cantillon recognized the element of *risk*, what Knight (1921) would later define as *uncertainty* in a market. Cantillon recognized that

“discrepancies in a market create opportunities for buying cheaply and selling at a higher price and that this sort of *arbitrage* (de la Porte, 1704) would bring equilibrium to the competitive market” (p. 29). Cantillon saw the assumer of risk (sic) as fundamentally different from the *capitalist*, (the provider of capital).

The development of classical economic theory, generally attributed to Adam Smith (1723-1790) for his *Inquiry into the Nature and Causes of the Wealth of Nations* (as cited in Landstrom, 2005, p. 27), changed the course of economic science. Smith focused on the *capitalist*, the provider of *stock*. He failed to recognize the significance of the entrepreneurial element and its function in the economy. Smith’s failure forced the study of entrepreneurship to the periphery of economic science, while his disciples formulated the principles of what has come to be known as classical economics.

Despite the lack of broad interest, entrepreneurship theory continued to develop. J. B. Say’s two books entitled *Traite d’economie politique* and *Coers complet d’economie politique pratique* (as cited in Landstrom, 2005, p. 28) not only defined *entrepreneurship*, but provided an empirical description of what the entrepreneur does and an analysis of the entrepreneurial function in the economy. Say’s theory of entrepreneurship divides industrial development into three categories:

1. Research that is conducted by researchers for the purpose of generating knowledge.
2. Adjustment of this knowledge for the purpose of creating usable products via entrepreneurs, who organize production factors.
3. The production that is performed by the workers.

Say viewed the entrepreneur as a broker who combined process with the goal of producing products that contributed value or efficiency to the economy all the while assuming the risks inherent in the activity (as cited in Landstrom, 2005, p. 28).

Other 19th century contributors to entrepreneurship theory came from Austria and Germany where a tradition that emphasized administration and politics existed. A German economist by the name of Johann von Thunen (1783-1850) argued there was a difference between entrepreneurship and management. The entrepreneur, according to von Thunen, was an innovator and a risk bearer. Hans von Mangoldt (1824-1868), another German economist, theorized that entrepreneurial profit was in fact an (*economic*) *rent* (Alchian, 1991) of ability (as cited in Landstrom, 2005, p. 29).

The Austrian tradition, first generation. During the 19th century while most practitioners of economic science focused on the effort to understand the principles of classical economics in the English (Adam Smith) tradition, a small cluster of Austrian economists continued to examine entrepreneurship. Carl Menger (1840-1921), the father of the Austrian Tradition, saw the entrepreneur as someone who transformed goods from one process step to another. He identified time, risk, and uncertainty as relevant dimensions of the process. Menger's contribution to classical economics was his development of the *subjectivist* view on the economy, wherein he claimed economic phenomena were not relations between objects, but between people (as cited in Landstrom, 2005, p. 29).

Menger had several disciples who expanded on his work. Eugen von Bohm-Bawerk (1852-1914) saw the entrepreneur as a capitalist. Friedrich von Wieser (1851-

1926) considered the entrepreneur a *jack-of-all-trades* (Ahl, 2002, as cited in Landstrom, 2005, p. 29).

Impact of classical economics. Classical economics based on Walras's *equilibrium theory* had no place for entrepreneurship. Alfred Marshall (1842-1924), one of the preeminent economists of his time, was an adherent to the English tradition. He viewed the entrepreneur as a multi-faceted capitalist, and he felt there was no place for entrepreneurs in the equilibrium of a perfectly competitive market (as cited in Landstrom, 2005, p. 29).

US interest. Rapid economic expansion in the US at the turn of the 20th century led to increased interest in entrepreneurship by leading American economists. Francis Walker, Fredrick Hawley and John Bates Clark are three Americans who expressed an interest in the subject. The best known member of the American group was Frank Knight, later recognized as the founder of the *Chicago School of Economics*. Knight (1921) theorized that entrepreneurship was characterized as *true uncertainty*. By true uncertainty, Knight meant the future was unknown and unknowable. In such circumstances it was not possible to insure or acquire insurance to cover adverse outcomes. Knight suggested *risk* exists when outcomes are uncertain, but they have quantifiable probabilities. He defined *uncertainty* as the condition whereupon outcomes cannot be calculated. Knight believed entrepreneurship arose out of opportunities that come into being when change leads to uncertainty. Knight felt there was no opportunity for profit when uncertainty did not exist i.e. perfect equilibrium (in the market) would be quickly restored. The ability to deal with uncertainty is then Knight's metric of entrepreneurial competence (Knight, 1921 as cited in Landstrom, 2005, p. 30).

Joseph A. Schumpeter. The person most responsible for rekindling entrepreneurship in the field of economic science is undoubtedly Joseph Schumpeter (1883-1950). Schumpeter was born into an aristocratic family in Slovakia, but moved to Vienna after his father died in the early 1890s. He studied economics at the University of Vienna at the time when Carl Menger and his disciples worked there. His thesis was on Walras's equilibrium theory. Schumpeter became a professor of Economics at the University of Graz, where he stayed until he became involved in politics. He had a six month stint as Finance Minister with Austria's Social Democratic Party in 1919. In the 1920s, Schumpeter involved himself in venture capital and investing. However, the economic crisis in Austria in the mid 1920s financially ruined him. He was offered a professorship at the University of Bonn in 1925, and shortly thereafter, both his wife and mother died leaving him free to travel. He was an invited lecturer at Harvard, where his talents were recognized. Harvard offered him a faculty position, which he accepted after a long period of deliberation in 1932 (Landstrom, 2005).

Chapter 2 of Schumpeter's *Theory of Economic Development* (1934) proposed a new theory of entrepreneurship. Schumpeter's theory stated that economic growth resulted from *new combinations* or innovation as opposed to capital accumulation. He discerned that creative destruction (in industry) caused continuous innovation that was the source of real economic growth. Schumpeter believed the normal condition (of the economy) was a state of equilibrium; however, he recognized that change destabilized the equilibrium condition for short periods of time during which all market participants adapted to the new economic realities. Schumpeter identified innovations as novel

production methods or processes, new products, and new organizational reconfigurations that led to greater efficiencies and/or lower cost structures.

Another observation of Schumpeter's was innovations tended to occur in clusters or *swarms* in the time domain. He observed that change did not occur uniformly throughout time, but in brief isolated periods of hyper-activity. In these brief periods of innovation, market participants that did not adapt quickly to the changing conditions were eliminated and replaced by more flexible organizations. The net result was the market for a product or service expanded along with overall economic activity leading to a redistribution of wealth (Schumpeter, 1934).

In his later years, Schumpeter became interested in economic history. He became convinced the economic importance of the entrepreneur would wane. This may have been a result of the importance accorded to *Keynesian Economics* by most governments and large institutions after The Great Depression and World War II. Keynesian Economics suggested entrepreneurship was an economic variable dependent upon economic factors, such as the availability of capital, labor and material. It presumed entrepreneurial activities occurred when conditions favored them. Schumpeter (1942) saw the R&D departments of large organizations as the sources of innovation, and thus he felt the entrepreneur would be relegated to a position of minor significance in the future. He believed the *economies of scale* inherent in large organizations and the growing influence of government in the economy would transform capitalistic economies into socialist ones. Once again, entrepreneurship was relegated to a position outside the economic science mainstream (Schumpeter, 1942, as cited in Landstrom, 2005, p. 35).

The Schumpeterian tradition. Schumpeter's ideas were not completely dropped. In 1948, Arthur H. Cole set up the Research Center in Entrepreneurial History at Harvard. In addition to Schumpeter and Cole, several Harvard researchers joined the center including Talcott Parsons, Thomas Cochran, Alexander Gerschenkron, Fritz Redlich and Hugh Aitken. These researchers held slightly different opinions about entrepreneurship, but they did agree it was framed by the following three dimensions:

1. Changes in the economic system.
2. Organizations needed to be created for commercialization of new products.
3. The task of the entrepreneur was to create profit via the production and distribution of goods and services.

They believed entrepreneurship was related to a certain sector of society (Landstrom, 2005).

The Research Center closed in 1958; however, several economists continued to work with Schumpeter's ideas. Erik Dahmen formulated the concept of *development blocks* (Dahman, 1950). Development blocks result from combinations of resources or technologies that enable the development of new technologies or products. Baumol (1993) theorized the entrepreneur was motivated to utilize his ingenuity by self-interest and the size of the potential reward. Baumol recognized entrepreneurship could be beneficial to society; however, he also recognized it could also be of no consequence or even destructive. Baumol used the concept of economic rents to underscore his case.

The Austrian tradition, 2nd generation. In the middle to latter part of the 20th century, two other Austrian economists carried on the Austrian Tradition. The Austrian tradition holds that the individual's actions greatly influence economic conditions in

society. Ludwig von Mises (1881-1973) believed entrepreneurship involved correctly anticipating the market. He believed profits could be realized by *getting a jump* on other competitors. This allowed the entrepreneur to produce goods and services more cheaply, and thus realize a profit when economic equilibrium was reestablished. Von Mises termed this type of behavior, *human action*. Von Mises believed people were astute. They were alert to opportunities that presented themselves. A student of von Mises, Israel Kirzner (1973) developed von Mises' ideas further by arguing that entrepreneurs are characterized by their alertness to opportunities. He went so far as to suggest that entrepreneurs actively seek out economic opportunities. He defined *entrepreneurship* as alertness to new opportunities, and he stated entrepreneurs act on those opportunities. Kirzner claimed entrepreneurs reestablish equilibrium by balancing *supply* and *demand* (Landstrom, 2005).

The other second-generation Austrian Tradition economist was Frederick von Hayek (1899-1992). Von Hayek observed that knowledge or information was not evenly spread throughout society. Indeed, clusters or aggregations of knowledge were the norm. These aggregates presented opportunities for the individuals who possessed the knowledge to exploit it in the market. Again the premise is market exploitation will lead to the reestablishment of economic equilibrium (Landstrom, 2005).

The Behavioral Scientists

While development of entrepreneurship languished in the field of economic science, other fields of study took up the challenge. The 1950s witnessed a change from studying entrepreneurship to developing it. Strong interest in entrepreneurship existed because of the impact the Great Depression had on jobs and the economy. In addition,

Western governments recognized the need to reinvigorate their private sectors because demand for wartime goods fell when World War II ended. There simply were not enough jobs for all the returning soldiers and the workers furloughed from the military industrial complex (Landstrom, 2005).

Entrepreneurship seemed the logical place for government to invest research funds in order to find a way to jump start the economy. This led to a desire to identify the types of individuals who started companies.

David McClelland. McClelland (1961) was one of the first Behavioral Scientists to write about entrepreneurship. He suggested the *achievement motive (nACH)* was the source of motivation for entrepreneurs. McClelland found that people who have a strong need to achieve are not typically artistic. They tend to be driven to improve themselves, and they want to win as a result of their personal effort as opposed to luck (Harris, 1971). Tests on entrepreneurs in small firms have shown they score higher on nACH than their associates.

In *The Achieving Society*, McClelland asked the question: Why do some societies develop more dynamically than others? Weber's *Protestant Work Ethic* provided him with the insight for why certain cultures are more dynamic than others. McClelland believed that norms and values, which prevail in certain cultures particularly in regard to the nACH motive, are of critical importance. McClelland did a large number of studies, which convinced him that a nation's need for achievement was coupled to its economic development. McClelland concluded openness toward people and their values as well as communication between people and a reduced adherence to institutional norms led to greater economic development. Using a parallel line of thinking, he saw the entrepreneur

as the vehicle, which drives economic development (McClelland's study as cited in Landstrom, 2005).

Other traits. With the advent of the Behaviorists and McClelland's work, individual qualities became the focal point of entrepreneurship research in the 1960s and 70s. A large number of studies were conducted in an attempt to identify characteristics inherent in the entrepreneur. Rotter (1966) developed the *locus of control* concept. Swayne & Tucker (1973) studied the traits of individual entrepreneurs. Cooper, Dunkelberg, & Woo (1986) studied tendencies for over-optimism. Sexton & Bowman (1985) studied the entrepreneur's need for autonomy and tolerance for ambiguity. Manimala (1992) presented five heuristics that he suggested improve the chances of venture success.

The Behaviorists, who focused on traits provided some interesting reading material, but unfortunately they have been largely discredited by follow-up research and study (Begley & Boyd, 1986; Delmar, 2000), the notable exceptions being McClelland's nACH motive, risk-taking propensity (Brockhaus, 1980), internal locus of control (Sexton & Bowman, 1985), and tolerance for ambiguity (Sexton & Bowman, 1985). Many other traits including the need for autonomy, dominance, independence, and endurance have been attributed to entrepreneurs, but they are traits frequently found in other individuals as well. Another reason for the declining interest in traits has been the trend toward new venture creation by teams of entrepreneurs. The influence of individual traits tends to be dampened out in a team environment.

Psychological studies on entrepreneurs. Several researchers have investigated the establishment of an organizational culture within new ventures. Stinchecomb (1965) first

suggested founders leave or form an *imprint* on their organizations. Since then, numerous other writers have observed and documented the founder's imprint even in cases where the founder has been terminated (Bamford, Dean, & McDougall, 1999; Baron, Hannan, & Burton, 1999; Barringer et al., 2004; Boeker, 1989; Nelson, 2003). Schein (1983) studied how the founder's views and assumptions interacted with the experiences of organizations to influence the development of the organization's culture.

Psycho-analytical contributions. Although the mainstream work of the Behaviorists was directed at specific traits of entrepreneurs, several researchers with a psycho-analytical background contributed to entrepreneurship theory. Kets de Vries (1977) suggested troubled early-life environments contribute to deviant behavior that may result in entrepreneurial activity later in life.

Categories of entrepreneurs. Another approach to entrepreneurship taken by Behaviorists was to try to catalog differences between entrepreneurs and other leaders. O. Collins, Moore, & Unwalla (1964) and Warner & Martin (1959) tried to identify the characteristics of successful business leaders. Smith (1967) studied so-called craftsmen and opportunistic types. Stanworth & Curran (1976) specified three types of entrepreneurs; artisan, the classical and the manager. Webster (1977) suggested five categories of entrepreneurs. Vesper (1990) provided a list of 11 types of entrepreneur, and Gartner (1984) developed eight archetypes that describe entrepreneurs.

Demographic studies. Demographic studies of entrepreneurs have been about as successful as studies on traits in identifying groups of individuals who tend toward entrepreneurship. Cooper & Dunkelberg (1987) determined that entrepreneurs are better educated, come from families where parents owned a business, start firms related to their

previous work, and locate where they are already living and working. However, they were not more likely to be immigrants, to leave school early, or to drift from job to job than the general population.

The Sociologists' Contributions

Sociology and sociologists have had a peripheral influence on entrepreneurship. Max Weber (1864-1920) observed that social systems change from one state to another. Kirzner (1973) pointed out the entrepreneur was alert to these state changes and uniquely capable of exploiting them for economic advantage. Weber saw *charismatic leadership* as a vehicle for causing social change (Landstrom, 2005). He observed that cultural influences had an important impact on society. In *The Protestant Ethic and the Spirit of Capitalism*, Weber (as cited in Low & MacMillan, 1988) argued the superior economic development of Northern countries was a direct result of Protestantism and its associated values of hard work, thrift and desire for material advancement. He also observed the entrepreneur was the only person capable of limiting the trend to larger and larger bureaucracies in industry.

More recent studies have suggested certain cultures tend to produce entrepreneurs and entrepreneurial activity. The Dissenters in England, the Huguenots in France, and Jews in many countries have been associated with entrepreneurial activity. Hagan (1960) pointed out disadvantaged groups or individuals tend to become entrepreneurs in an effort to alter the status quo. Brenner (1987) argued groups which have lost face or face the prospect of losing social status are driven to take entrepreneurial risks.

While adversity may provide the impetus for the disadvantaged to become entrepreneurs, it is by no means the only source of entrepreneurial talent. Teams of highly

skilled affluent professionals have become the norm in venture funded High-Tech start-ups.

Taking a different approach to the study of entrepreneurship, a separate group of sociologists has looked at the venture initiation process and attempted to model the influences that lead to new venture formation. Glade (1967) saw the entrepreneur as a decision maker within a specific social and cultural setting, namely the newly formed venture. He defined the term, *opportunity structure*, to describe a construct wherein the entrepreneur operates as a decision maker, has identified an economic opportunity, and has marshaled resources to address the opportunity (as cited in Low & MacMillan, 1988, p. 150).

Several other researchers have developed models to describe the venture initiation process (Martin, 1984; Vesper, 1983). Shapero & Sokol (1982) produced an elaborate model which takes into consideration life-path changes, perceptions of desirability, and perceptions of feasibility. The model provides a dynamic framework for venture formation by evaluating how the positives and negatives of venture formation influence the entrepreneur.

Network theories. Another group of Sociologists developed a view that entrepreneurs act as part of a social and cultural network. Granovetter (1985) described how economic activity was embedded in society, and he pointed out the relevance of social networking to entrepreneurship. Amit, Glosten, & Muller (1990) saw the entrepreneurial process as “a shifting network of continuing social relations that facilitate and constrain links between entrepreneurs, resources, and opportunities” (p. 822). Aldrich & Zimmer (1986) stated that networks have three characteristics; the amount of resources

within them, their diversity, and their accessibility. Aldrich, Rosen, & Woodward (1987) determined that successful entrepreneurs have large networks of casual acquaintances that provide timely and accurate information, provide access to customers, and introduce them to potential investors.

Researchers Dubini & Aldrich (1991) and Rush, Graham, & Long (1987) identified five roles that networks play in the venture formation process:

1. Facilitating the transformation of an idea into a realistic plan.
2. Increasing aspirations among the founders.
3. Stimulating new ideas.
4. Providing practical help.
5. Providing support.

Birley (1985) showed entrepreneurs tap their social networks for help and guidance when they are in pre-start-up mode. Cooper (1986) showed High-Tech entrepreneurs typically locate next to their former employers, and they tend to develop similar products to the ones developed at their former companies. The proximity to resources with the appropriate skill sets is considered critical by both the entrepreneur and his investors. Two Italian researchers, G. Becattini and S. Brusco studied *industrial districts* in Tuscany and Emilia Romagna respectively, a concept originally formulated by A. Marshall around 1900. Aldrich & Zimmer (1986) noted that having a history of successful past dealings provides the basis for trade and future assistance. Potential entrepreneurs frequently find support in mutual benefit associations, joint buying arrangements, and capital raising activities. Certain ethnic groups have distinguished themselves by their ability to raise capital for new business formations, e.g. the

Dissenters in England, the Protestants in France, the Jews in many countries, and the Parsees in India (Low & MacMillan, 1988).

A study on networking in the Indian context by Ramachandran & Ramnarayan (1993) suggested entrepreneurs could be segmented into two distinct groups. One group, identified as *High Pi*, had a strong inclination towards the *pioneer innovative motive* (Pi), while the other group, identified as *Low Pi*, was less driven by the (Pi) motive. The study found that High Pi entrepreneurs frequently sought out advice from their networks of contacts and used the advice to synthesize new opportunities from the available information. Perhaps even more interesting are the findings, which indicate High Pi individuals tended to be *change agents* interested in transforming society, industry and the economy as well.

A practical outgrowth of network theory's impact on entrepreneurship is the growth in the number of *incubator* and *angel* organizations (Freear et al., 1997). One could argue these organizations are a manifestation of the deviant behavior pattern identified by Hoselitz (1963) combined with what Young (1971) termed *organic solidarity* within the group. Young pointed out it was not important to be deviant with regard to society at large but to have access to resources within the group, which can overcome the lack of social recognition and denial of access to important social networks.

Social Anthropology's Contributions

The impact of social anthropology on entrepreneurship has been very limited, however; one person, Barth (1963) contributed an interesting study on the interaction between local entrepreneurship and the social pattern of the individual. Barth (as cited in Landstrom, 2005) argued entrepreneurship is about connecting two spheres in society in

which different norms and values exist. He suggests something cheap may exist in one sphere and it may be expensive in another sphere. By interacting, both spheres will benefit from the knowledge within the two spheres. Barth argued entrepreneurs are not locked into local norms, but they must take into consideration those norms and restrictions in the local community or social structure. Barth saw the entrepreneur as one who focused on optimizing profit making, was more experimental and hence; less institutionalized, and prepared to take risks.

Population Ecology Theory

Viewing entrepreneurship from a population ecology perspective is a fairly recent development. Its application to entrepreneurship is an adaptation from Darwin's biological theory of *Survival of the Fittest*. It suggests only organizations which are well adapted to their environments will survive in the long term, while those that are not well adapted will fail (Aldrich, 1990; Hannan & Freeman, 1977). Greenfield & Strickon (1986) have argued that social science models are too static and, therefore, incapable of accounting for the dynamism inherent in entrepreneurship. Prior to the advent of population ecology theory, most entrepreneurship research assumed entrepreneurial success was contingent only on the capability of entrepreneurs to make sound decisions. Ecological thinking has reframed the issue of how to achieve success in terms of organizations' adaptability to their environments.

One line of inquiry which has been inspired by population ecology theory is the study of births and deaths of firms. Carroll & Delacroix (1982) looked at the formation and failure of firms in Ireland and Argentina and determined different factors drive the two events.

Brittain & Freeman (1980) argued that new opportunities are created by the expansion of existing organizations and the founding of new organizations through technological change and demographic shifts. Borrowing from Stinchecomb (1965), they suggested entrepreneurs are most likely to come across opportunities as a result of being positioned at key *informational loci* within existing organizations.

Tushman & Anderson (1986) studied how new firms enter an industry, and they determined technological disruption that obsoletes or undermines technological competence favors new firms. Established firms tend to benefit from competence-enhancing technology, because they can exploit their market position and resources. New firms can take advantage of this means of analysis to assess their chances of survival.

Management Science

Economic science interest in entrepreneurship lay largely dormant after World War II. The works of Milton Keynes and John K. Galbraith dominated the economic science agenda. Concerns about job creation and economic development and fear of the concentrated Soviet economy convinced Western governments, companies and institutions that *big was better* (as cited in Landstrom, 2005).

However, towards the end of the 1960s and throughout the 1970s socio-politico-economic leaders began to question the *big is better* assumption. Social unrest, driven by unpopular wars, racial tensions, oil embargos, political scandals, economic stagflation, and large inefficient government bureaucracies caused people and researchers to question longstanding norms and paradigms. In a retrospective analysis of the period, Carlsson (1992) identified two explanations for the switch from interest in large corporations to small firms:

1. Intensification of global competition, increased uncertainty, and market fragmentation.
2. Fundamental changes in the characteristics of technology development.

The advent of information technology followed by biotechnology has had as significant an influence on society as the Industrial Revolution did on 18th century society.

The backdrop of heightened social tension, soul searching and technological innovation provided (government sponsored) opportunities for researchers to investigate new ways of thinking. Birch (1979) investigated where job creation was occurring in the U.S. economy, and he found small businesses were the source of job replacements for workers let go by larger firms. Birch's work has been criticized for its accuracy, but its fundamental conclusion that small firms were the dominant source of new job creation has been unequivocally accepted. Indeed Birch's work has led to a virtual re-blossoming of work in entrepreneurship, the scope of which seems only limited by researchers' abilities to formulate relevant questions.

New Research Directions

Renewed interest in entrepreneurship opened up many new avenues of research. The literature shifted in its approach from a focus on traits to a focus on process. Because the research on entrepreneurship had been so varied in content and approach, it was very difficult to focus on a streamlined number of topics. Landstrom (2005) addressed this dilemma by organizing the literature produced over the last 30 years into conversation areas. These conversation areas formed virtual focal points for interest in those aspects of entrepreneurship that acquired a broad base of interest at various points in time.

Landstrom, who utilized the work of Gregoire, Dery, & Bechard (2001) and Cooper (2003), identified six major conversation areas, three of which have significant sub-sections, which he felt covered the range of entrepreneurship research in the recent past. These conversation areas included:

1. Strategy
 - a. New Venture Performance
 - b. Factors Affecting New Venture Performance
 - c. Resources & Capabilities in Competitive Advantage
2. The Process of Venture Formation
 - a. Venture Finance
 - b. Venture Capital Roles & Practices
 - c. Networks
 - d. Innovation
3. Entrepreneur as a Person
 - a. Psychological Dimensions
 - b. Factors Affecting the Decision to Form a Firm
 - c. Leadership
4. Predictors of Performance
5. Structural & Economic Dependence Relationships
6. Corporate Intrapreneurship

Strategy. The seminal work on strategy as it applies to entrepreneurship has been attributed to Stinchecomb (1965) for his *liability of newness* concept and Porter (1980) for his work on competition and competitive strategy. In the sub-section of New Venture

Performance, Cooper & Bruno (1977), Doutriaux (1984), and Litvak & Maule (1980) studied the success/failure rates of start-up firms in the Boston, San Francisco and Ottawa areas. Litvak & Maule (1980) and Ruhnka et al. (1992) studied Marginal Survivors and the Living Dead phenomenon. Reid & Smith (2000) and von Krogh & Cusumano (2001, Winter) studied how new ventures perform.

A related sub-section of strategy, Factors Affecting New Venture Performance, focused on the identifying the factors that contribute to new venture performance. Several researchers focused on problems with performance (Bourgeois III & Eisenhardt, 1987; Bruno et al., 1986; Cooper et al., 1994; Hill & Hlavacek, 1977; Kazanjian, 1984; Laseter et al., 2007; Moore, 1991, 2004; Olofsson, Petersson, & Wahlbin, 1986). A significant number of researchers investigated which factors contribute to success (Bamford et al., 1999; Barringer et al., 2004; Brown Jr., 1986; Brush & Vander Werf, 1992; Chrisman, Bauerschmidt, & Hofer, 1998; Cooper & Daily, 1997; Covin & Slevin, 1997; Neiswander & Drollinger, 1986; Sandberg & Hofer, 1986, 1987; Stuart & Abetti, 1986; West III & Meyer, 1998). Boeker (1989) identified four strategies that new ventures could adapt to achieve success. The four strategies are:

1. The first mover, or first to market.
2. The low-cost producer, or cost minimization.
3. The second mover or fast follower.
4. The niche strategy.

He also identified three factors that could lead an organization to deviate from a dominant strategy. They are:

1. Poor performance

2. Organization age
3. Length of tenure of its founding entrepreneur.

Gimeno-Gascon, Folta, Cooper & Woo (1997) introduced the concept of a *threshold* to explain why a significant number of failing ventures persist long past when they should have failed.

A third sub-section of strategy, Resources & Capabilities in Competitive Advantage, takes a different approach to the study of new ventures. Barney (1991) and Wernerfelt (1984) studied how available resources impact strategic options. Penrose (1959) studied how diversification and amalgamation contributed to growth. McDougall et al. (1994) studied how selling internationally from the beginning of a firm's sales activities enhances a firm's competitive advantage. Zook & Allen (1999) discussed how sustained profitable growth was the result of focusing on a profitable core and then driving this competitive advantage into adjacent areas around the core.

The process of venture formation. The seminal work in The Process of Venture Formation conversation area has been attributed to Gartner (1985a). This major conversation area has been segmented into four sub-sections, Venture Finance, Venture Capital Roles & Practices, Networks and Innovation.

Research on Venture Finance has addressed a wide variety of financing issues. Bygrave & Timmons (1992) studied the structure and growth of the VC industry and speculated on trends for the future. Sahlman (1992) studied how VCs structure their financial investments. Mason & Harrison (2002) and Petty (1997) investigated the strategies, models and methodologies VCs use to harvest their investments. Mason and

Harrison also looked at the internal rate of returns (IRR) VCs were realizing and how those figures had changed over time.

A significant amount of research has been dedicated to studying the roles and practices of venture capital. Dimov & Shepard (2005), Rea (1989), Shepard(1999), and Tyebjee & Bruno (1984) studied how VCs decide on which firms they intend to invest. Dimov & De Clerq (2006), Gorman & Sahlman (1989), Moukheiber (1996), Sapienza (1992), and Wilson (1985) studied VC practices and behaviors. Amit et al. (1990), and Busenitz, Fiet, & Moesel (2005) ascertained that VCs have to settle for investing in the weakest firms because strong start-up companies will not accept a VC's investment proposal. Bruton et al. (1997), Rosenbloom (2006), and Schefczyk & Gerpott (2000) have investigated the causes of CEO dismissal and its repercussions on venture performance. Freear et al. (1997) and Timmons & Bygrave (1997) have studied VC investment activities and trends.

The role of networks and social networking has been an entry point into the study of entrepreneurship by social scientists. Aldrich & Zimmer (1986) and Ramachandran & Ramnarayan (1993) investigated how entrepreneurs acquire timely and accurate information relevant to their business opportunities. Greenfield & Strickon (1986) and Larson (1992) discussed the importance of social networks and contracts to entrepreneurs. Trust was determined to be a critical factor in some cultures. This influenced how entrepreneurs viewed written versus social contracts. Birley (1985) stressed the importance of family, friends, and business contacts to entrepreneurs.

Innovation plays an important role in entrepreneurship. Schumpeter (1934) saw innovation as the mechanism, which drove his *creative destruction*. Innovation remains

an important conversation area within the field of entrepreneurship evidenced by the variety of work conducted by the following researchers: Arrow (1962) looked at how *risk* and *uncertainty* lead to innovation. Audretsch (1991), Kim & Mauborgne (1997), and Kimberly (1979) studied how innovation enabled small companies to survive and grow. Acs & Audretsch (1990) looked at ways of measuring innovation and at the influence of technological change on small and large industries. They concluded *market turbulence* drives innovation. Manimala (1992) determined that 50% of the variation in innovativeness among three clusters of entrepreneurial firms can be explained by a High Pi orientation.

Entrepreneur as a person. Social science has made significant contributions to the study of entrepreneurship. The seminal work was done by McClelland (1961) in his study of the *need to achieve (nACH) motive*. Although efforts to tie venture performance to entrepreneurs' traits has been largely discredited, work still continues in three sub-sections, Psychological Dimensions, Factors Affecting the Decision to Form a Firm, and Leadership.

The sub-section of Psychological Dimensions continues to be a fertile ground for research in entrepreneurship. Several researchers have studied the similarities and differences between entrepreneurs and other members of society (Begley & Boyd, 1986; Brockhaus, 1982; Collins et al., 1964; Cooper et al., 1986; Hornaday & Aboud, 1971; Peacock, 1986). A number of other researchers studied the traits entrepreneurs tend to possess (Baum, 1995; Brockhaus, 1980; Garman & Phillips, 2006; Gartner, 1984; Kirzner, 1973; Staw, 1981; Swayne & Tucker, 1973). They investigated what traits they possess, and how they are utilized. Shapiro & Sokol (1982) developed a dynamic

framework of factors that influence entrepreneurs in new ventures. Krueger, Reilly & Carsrud (2000) compared the Theory of Planned Behavior (TPB) with the Shapero Entrepreneurship Event (SEE) theory to see which theory predicted entrepreneurial behavior better. SEE was determined to be slightly better. Their paper suggested *intentions models* may be good ways to study entrepreneurial behavior.

Psychologists have long been interested in determining the factors which affect the decision to form a new firm. Amit et al. (2001), Hayward, Shepard, & Griffin (2006), Liles (1974, Winter), and Pennings (1982) reported on many of the factors that go into the decision to start a firm. Katz & Gartner (1988) and Lichtenstein et al. (2006) focused on identifying and measuring the characteristics of nascent or emerging organizations.

The study of leadership has been a core component of management studies for a long time (Northhouse, 2004); however, it has only been applied to the study of entrepreneurship recently. A significant amount of the literature on *entrepreneurial vision*, one of the two central tenets of this study, has come from the leadership subsection. Baum et al. (1998), Filion (1991), Rockey (1986), and Salter (2000) studied how entrepreneurs use vision (as a guiding framework), how it is communicated (to employees) and how it contributes to firm growth. Abetti (2003) did a case study on a European firm, Steria SA, which elucidated how a moderate-sized company could survive and thrive in a market with large predatory competitors by sticking to its vision of being an independently controlled firm. Abetti (2003), Baum et al. (2001), Jain & Tabak (2007), Jayaraman, Khorana, & Nelling (2000), Nelson (2003), Rubenson & Gupta (1992), and Willard, Krueger, & Feeser (1992) investigated founder longevity, factors

influencing founder longevity, and managerial competence in comparison with professional managers.

Predictors of performance. The seminal work in the Predictors of Performance conversation area was by (Mayer & Goldstein, 1961). They proposed that motivation, background characteristics, and resources influence the degree of success of a new firm. Several other researchers studied factors and characteristics that can be used to predict success (Almus & Nerlinger, 1999; Hambrick & Crozier, 1985; MacMillan et al., 1987; Maidrique, 1984; Reynolds, 1986). Bruderl et al. (1992), Gimeno-Gascon et al. (1997), Herron & Robinson (1993), and Timmons (1984) developed theories and models that can be used to predict new venture success.

Structural & economic dependence relationships. Identifying seminal works in the Structural & Economic Dependence Relationship conversation area is problematic because of the number and variety of contributions that can be associated with entrepreneurship. Three studies that merit recognition are Pfeffer & Salancik (1978), Stinchcombe (1965), and Williamson (1975). Stinchcombe is cited for his analysis of social structure and how it impacts the rate of organization formation, the types of organizations formed, and the impact of organizational structures on social classes. Williamson is cited for the development of his understanding that a firm's ability to organize itself is reduced as the firm grows in size. Pfeffer and Salancik are recognized for their realization that environmental constraints affect how organizations operate. The body of literature contains articles on a wide variety of structural and economic relationships. Baumol (1968) and Casson (1982) described the benefits of entrepreneurship, its origins in the work of Knight and Schumpeter, and how it fits into

the realm of classical economics. A number of researchers studied job creation in small firms, the types of jobs created and the area of the economy where job growth was the highest (Kirchhoff & Acs, 1997; Kirchhoff & Phillips, 1988; Regan & Mauer, 1984; Reynolds & White, 1997). Weick (1969) did a theoretical study of why people organize. He studied organizing from the standpoint of dyads and communicating. He proposed organizing results from environmental change, enacting, selecting, and retaining with feedback and interlocking loops. Baumol (1993) took a contrarian point of view by pointing out how policy can lead entrepreneurs to socially undesirable activities. He presented models for imitation and innovation, and he modeled how competitors respond to innovation.

Corporate intrapreneurship. The growth in entrepreneurship related studies has not been ignored by researchers who study large corporations. Spurred by the competitiveness resulting from small companies' agility, researchers studying large companies have looked at ways to implement entrepreneurial behaviors in large firm environments. Fast (1978) was one of the first researchers to point out the entrepreneurial spirit existed in large companies. Weiss (1981) did a comparative study of venture funded start-ups with corporate start-ups. He determined the venture funded start-ups performed better, and he presented the reasons for the better performance. Kantor (1983) urged corporations to embrace change, to make change a way of life. She suggested corporate innovation should be a total team endeavor. Burgelman (1983) studied how entrepreneurial companies transformed entrepreneurial R&D projects into new businesses. The new businesses had to learn to adjust to the strict guidelines mature company policies dictate when manufacturing products. Burgelman developed a model of

how new organizational units developed around new businesses, and he observed challenging managerial and cultural issues frequently arise in the type of environments *Intrapreneurship* creates.

A tabular summary of the subject areas studied, the researchers who did the studies, the timeframes for the studies and their key findings is presented in Appendix C. The studies are loosely arranged in what Landstrom (2005) termed conversation areas or topics of interest that emerged in the 1980s and 1990s based on an analysis of papers by Gregoire et al. (2001) presented at the annual Babson Conference on Entrepreneurship in Jonkoping, Sweden.

New Conversation Areas

Landstrom's catalog of entrepreneurship literature provides a framework for tracking the development of the main body of entrepreneurship literature. However, there are additional conversation areas derived from peripheral fields of study, integrations of Landstrom's conversation areas (2005), and work on entrepreneurship frameworks. Additionally, there are a large number of How-to-do-a-Start-up manuals in print (Nesheim, 2000; Stevenson, Roberts, Grousbeck, & Bhide, 1999; Venkataraman & MacMillan, 1997; Vesper, 1990), and there are several testimonies to academic involvement in entrepreneurship which strongly influence the direction of research (Long & Ohtani, 1986; Roberts, 1991).

Charismatic leadership. Charismatic Leadership has already been mentioned as a topic of interest in the entrepreneurship literature. However, its relationship to entrepreneurship can best be described as tangential. Charismatic Leadership has its own body of literature firmly planted in the leadership field of study (Northhouse, 2004). That

said there are several studies on Charismatic Leadership and in particular, vision, which are relevant to this study. Conger & Kanungo (1987) did a theoretical study on Charismatic Leadership. Baum et al. (1998), Filion (1991), Rockey (1986), and Salter (2000) and determined future vision is a key to a leader acquiring visionary attribution. They found leaders are charismatic when their vision is discrepant from the status quo, but within the latitude of acceptance of followers. J. Collins & Porras (1991) described how organizational vision is derived from mission, tangible images, beliefs, values, guiding philosophies, and purpose. Quigley (1994) and Shamir et al. (1993) studied how vision motivates followers and reinforces the corporate culture which in turn leads to competitive advantage. Larwood, Falbe, Kirger, and Miesing (1995) did a complex study in which they found CEOs in fast moving companies have the clearest vision, communicate it most effectively, and have the best long term strategy.

Entrepreneurship frameworks, history, & data. Entrepreneurship is such a diverse field of study that many researchers have periodically tried to take a snap-shot of the state-of-the-field in an attempt to establish the field's boundaries and genealogy. Landstrom (2005), Montanye (2006), and Sandberg & Hofer (1982) have provided detailed histories of the development of the field. Several other authors documented the existing literature and attempted to provide direction for future research (Aldrich & Baker, 1997; Amit et al., 1993; Hoy, 1997; Low & MacMillan, 1988; Sexton, 1997; Shane & Venkataraman, 2000). Wortman (1986) developed a theoretical typology for research in entrepreneurship and small business. Hood & Young (1993) did a survey of entrepreneurial executives to ascertain what they would recommend for a curriculum in entrepreneurship. Phillips & Dennis Jr. (1997) surveyed firms and institutions to

determine the appropriateness, accessibility, and content of data bases suitable for entrepreneurship research.

Integrated conversation areas. Recently a number of studies have been conducted that can best be characterized as integrations of Landstrom's conversation areas. Rather than assign these studies to one of Landstrom's conversation areas, this study has decided to identify integrations as a new trend in the entrepreneurship literature. Zacharakis, Meyer, & DeCastro (1999) reported on New Venture Performance and VC Roles and Practices. They found that failure attribution differs between VCs and entrepreneurs. VCs see poor management as the source of failure. Entrepreneurs see poor management as a source of failure in other firms, but they tend to identify internal issues in their own companies.

Boeker & Karichalil (2002) investigated a combination of Founders' Departures, New Venture Performance and VC Roles and Practices. They determined founders' departures follow a *U-shaped pattern*. Fast growth tends to cause earlier founder departure because many founders are viewed (by VFSC Boards) as not having the skill-set required to manage very fast growth organizations. The back-end of the U-shaped pattern is driven primarily by typical *succession events*, or the founder's desire to move on to some other challenge.

Fombrun & Wally (1989) examined an integration of the fields of Organization Theory and New Venture Performance. They studied how small firms design management control systems to facilitate rapid growth. The systems were determined not to be a burden, but provided the minimum number of controls to allow for controlled rapid growth.

Westley & Mintzberg (1989) studied a combination of Visionary Leadership and Strategic Management. They suggested vision provokes an emotional response in its adherents, and that *strategic vision* is dependent on followers and drama.

Abetti (1997) looked at a combination of Corporate Intrapreneurship and Vision in a case study of Toshiba's entry into the laptop and notebook (computer) marketplaces. Abetti found that persistent pursuit of a vision by a division manager provided the impetus to overcome the obstacles presented by an old-line highly structured organization.

Baron et al. (1999) investigated the relationship between Organization Theory and Founder Influences. They identified six typologies of organization in new firms; star, engineering, bureaucracy, autocracy, commitment, and aberrant. Their study concluded changes to organizational structure lead to departures of senior management. However, their findings supported Stinchcombe's contention that founders embed (*imprint*) distinctive visions and values in enterprises, or they are conduits for economic, social, or cultural forces.

Daily & Dalton (1992) and Wasserman (2003) compared founder performance with the performance of professional managers. Both studies concluded that entrepreneurs can become very effective managers. However, Wasserman pointed out that firms, which experience *hyper-growth*, may not have the time for an entrepreneur to gain the experience necessary to manage such a dynamic business entity.

Ronstadt (1988) examined the *corridor principle*, a networking behavior, in conjunction with a phenomenon which occurs in many new ventures, namely the *near venture failure syndrome*. The corridor principle articulates how entrepreneurs have

many avenues to new opportunities, while the *near venture failure syndrome* alerts entrepreneurs to the reality of the pressures involved in starting a new venture.

Start-up how-to manuals. The growth in the number of new business ventures over the last thirty years has spawned a new branch in the entrepreneurship literature dealing with how one actually does a start-up venture. Vesper (1990) did a survey of ways to start a company. He considered all types of firms and commented on the success and failure rates of each type. He concluded that innovations based on market need fare better than those driven by technological push.

Venkataraman & MacMillan (1997) identified three modes of start-up. They developed theories for why each one is used.

Stevenson, Roberts, Grousbeck & Bhide (1999) studied a number of start-up cases. They highlighted how each entrepreneur dealt with important issues relative to their respective case.

Nesheim (2000) has produced a thorough guide to the start-up process. His book covers the formation process, legal issues, business plan preparation, team structure and issues, ownership and dilution, personal rewards, VCs, leasing capital, bankers, and other sources of venture capital.

Academic involvement in entrepreneurship. A number of academic institutions have sponsored or spun out organizations for commercial exploitation. Three of the most representative manifestations of this type entrepreneurship include MIT's efforts in the Boston Route 128 area, Stanford's High Tech Industrial Park in Palo Alto, California, and the Research Triangle formed between Duke University, the University of North Carolina, and North Carolina State University around Raleigh-Durham, North Carolina.

This study did not examine the literature for this form of entrepreneurship in great detail; however, two sources which describe the phenomenon are described. Long & Ohtani (1986) used an MBA program at the University of Calgary in Alberta, Canada to support entrepreneurship activities at the university. They produced a report summarizing the progress of the entrepreneurs involved. Roberts (1991) did an extensive examination of the role MIT plays in the formation of new ventures in the Boston area.

A tabular summary of the new conversation areas as defined by this study, the researchers who did the studies, the timeframes for the studies, and their key findings is presented in Appendix D.

Where do “vision” and “living dead” fit in the literature? This study has reviewed approximately 250 books and articles dealing with the study of entrepreneurship. Of the 250 documents, 38 (15%) reported on vision, and 10 (4%) reported on the Living Dead or Marginal Survivor phenomenon. The distribution of documents reporting on vision is widely distributed across both Landstrom’s and the new conversation areas identified in this study. This result may reflect selection bias due to the nature of the study; however, it was not a premeditated action. The distribution of documents reporting on the Living Dead or Marginal Survivor companies is tightly distributed. Living Dead or Marginal Survivor companies are only mentioned once in new conversation areas. This may reflect broad acceptance in the research community of the concept, and/or it may provide justification for undertaking this study.

10 of 13 (77%) of Landstrom’s conversation areas were found to have a document in which the subject of vision was discussed or mentioned (Appendix E). This appears to reflect the widely held contention that vision is important to new ventures and mature

firms. The only conversation areas that did not reveal an article on vision were Venture Finance, Structure & Economic Dependence Relationships and Corporate Intrapreneurship. (A case study by Abetti on Toshiba's laptop and notebook computer business has been classified into a new integrated conversation area entitled, Corporate Venturing and Vision.) Documents on vision in Landstrom's conversation areas are most concentrated in the areas of Strategy, The Process of Venture Formation, and the Entrepreneur as a Person. The sub-section on Leadership accounted for the most documents with nine. The next highest contributor conversation area was Factors Affecting New Venture Performance with four documents.

Three of Landstrom's 13 (23%) conversation areas (Appendix E) contained reports on Living Dead or Marginal Survivor firms. Venture Performance and/or Venture Capital Roles and Practices conversation areas (Landstrom or new) accounted for all the documents on Living Dead and/or Marginal Survivor firms.

Literature Sources

Because entrepreneurship is such a diverse and dynamic field of study, the literature consists of traditional scholarly sources such as books, scholarly journal articles, and conference proceedings as well as non-traditional (by academic standards) sources. Non-traditional sources include newspaper articles, magazines, commercial white papers, web-sites, and industry promotional material.

Books

The number of books written about entrepreneurship probably ranges into the thousands. However, six books stand out as good reference sources for the active *conversations* occurring at the times of their respective publication. The six books are:

1. Encyclopedia of Entrepreneurship by C. Kent, D. Sexton & K. Vesper – 1982
2. The Art and Science of Entrepreneurship by D. Sexton & R. Smilor – 1986
3. The State of the Art of Entrepreneurship by D. Sexton & J. Kasarda – 1992
4. Entrepreneurship 2000 by D. Sexton & R. Smilor – 1997
5. The Blackwell Handbook of Entrepreneurship by D. Sexton & H. Landstrom – 2000
6. Pioneers in Entrepreneurship and Small Business Research by H. Landstrom – 2005

Conference Proceedings

Babson College (Press) has published the proceedings from its annual conference entitled, *Frontiers of Entrepreneurship Research* for the years 1981 to present. These compendia of articles, which were organized along conversation areas, provide a wealth of information on each year's relevant topics and research.

The Academy of Management has a dedicated interest group which provides a forum for presenting research and opinions on subjects related to the field of entrepreneurship. The Academy publishes the proceedings from its annual meetings. Proceedings from the conference on Technical Entrepreneurship (*Technical entrepreneurship: A symposium*, 1972) held in Milwaukee, Wisconsin provide a broad overview of the relevant issues in the study of entrepreneurship in the early 1970s.

Journals

Aldrich & Baker (1997) segmented the journals that deal with entrepreneurship into two groups. Group 1 publications were identified as primarily empirical articles, and

group 2 publications were identified as primarily conceptual articles. The major contributors of group 1 or empirical articles were the following:

1. Academy of Management Journal (AMJ)
2. Administrative Science Quarterly (ASQ)
3. Entrepreneurship Theory & Practice (ETP)
4. Journal of Small Business Management (JSB)
5. Journal of Business Venturing (JBV)

Each of these publications has been referenced in this study.

The major contributors of group 2 or conceptual articles were the following:

1. Academy of Management Review (AMR)
2. Business Horizons (BHO)
3. California Management Review (CMR)
4. Harvard Business Review (HBR)
5. Journal of Business Strategy (JST)
6. Journal of Economics and Business (EBB)

Group 2 publications 1 through 4 have been used in this study.

Other publications which contribute to the body of entrepreneurship research and have been used in this study include:

1. Small Business Economics
2. Industrial Marketing Management
3. Journal of Marketing Research
4. Review of Economics and Statistics
5. American Sociological Review

6. Journal of Applied Psychology
7. Technovation
8. Strategic Management Journal
9. Research Management
10. International Small Business Journal
11. Personnel Psychology
12. Strategy+Business
13. I.E.E.E. Transactions on Engineering Management
14. Business Quarterly
15. Research Policy
16. Journal of Business
17. Journal of Economic Literature
18. The Independent Review
19. Organization Science
20. Journal of Marketing
21. Sloan Management Review
22. Management Science

Industry Promotional Publications

A forum, known as the Global Entrepreneurship Monitor (GEM), was established in 1999. It is a research project that aims to describe and analyze entrepreneurial processes in a significant number of countries. The GEM measures differences in the level of entrepreneurial activity between countries, attempts to uncover factors that influence the level of entrepreneurial activity, and identify policies that may enhance the

level of entrepreneurial activity. The GEM publishes the results of its project in an annual report.

The National Venture Capital Association (NVCA), a trade organization representing approximately 472 venture capital and private equity firms, routinely publishes information promoting venture capital and the venture capital industry. Their publication, *Venture Impact*, highlights the economic importance of venture capital backed companies to the U.S. economy by providing statistics on job creation, industry revenues, profitability, and other metrics of interest. The NVCA puts out a weekly electronic summary of activities relevant to the venture industry called *NASVF NetNews*.

The Popular Press

The popular press and media routinely contribute articles to the entrepreneurship literature. Magazines like *Money*, *Inc.*, *Upside*, *Forbes*, *Business Week*, and *The Red Herring* along with many others contribute articles of varying technical depth on contemporary subjects. The *Wall Street Journal*, *Financial Times*, *Barrons*, *Morningstar*, and other investment newspapers and the business sections of major daily newspapers report on financial performance, venture capital activity, and business trends. These media sources also provide easy access to industry statistics.

Chapter 2 Summary

Entrepreneurship is an economically important and ancient practice. It has enjoyed varying degrees of interest in the commercial and academic communities throughout history. In the past sixty years, there has been a marked upturn in interest in the field due to its perceived importance to economic growth and job creation.

The study of entrepreneurship as a field of study is a twentieth century phenomenon. Prior to that time, entrepreneurship was treated as an appendage to economic science. In the first half of the twentieth century its study was limited to a relatively small community of enthusiasts. That situation changed dramatically in the late 1970s when Birch's research showed entrepreneurship was the *economic engine* driving job creation in the post-industrial US economy.

The field of entrepreneurship has proven very difficult if not impossible to frame. The boundaries for its core concepts and theories function as a porous amoeba-like membrane. The field is influenced by many surrounding fields of study, and it influences many fields in return. However, the location of the field's boundaries fluidly shift depending on which topics are considered *hot* by its community of contributors. In a sense entrepreneurship is more akin to an organic system than a closed system. Economic science, psychology, sociology, management science, and social anthropology among others have significantly influenced entrepreneurship. These influences have led to the formation of so-called *conversation areas*.

Recent research in the field of entrepreneurship has shifted from conversation areas, (associated with other fields of study which have influenced entrepreneurship) to integrations of those conversation areas to form new hot topics of interest and to the creation of new conversation areas. This study is a manifestation of that evolution. The two principal concepts investigated in this study, namely vision and Living Dead firms, have been treated historically as independent concepts. While the study of vision is pervasive throughout the study of entrepreneurship and other fields of study, the study of the Living Dead phenomenon has been restricted to a narrow sub-section of

entrepreneurship study, namely Strategy and New Venture Formation. This study seeks to establish whether or not vision has a significant influence on the number of firms classified as Living Dead.

This Literature Review concludes with a survey of the various types of literature that provide the forum for discussion in the field of entrepreneurship. The types range from academic books and journals on one end of the spectrum to industry promotional publications and the popular press on the other end.

Chapter 3: Methods

Introduction

This study utilized a *mixed-method* design and a *Concurrent Transformative Strategy* (Creswell, 2003). It was cross-sectional in nature in that it surveyed a percentage of the population of members of the National Venture Capital Association (NVCA). The quantitative section deals with the collection and analysis of data captured via a survey instrument developed specifically to probe for answers to the study's research questions. The qualitative section deals with ascertaining (qualifying) whether or not the studied firms have/had a (founder's) vision, which largely conforms to the converging definitions for a vision developed in the literature review (Chapter 2). Only the data from qualified *respondents* were used in the analysis (of the survey data). Respondents' answer sets were qualified by me, the researcher, by my assessing whether or not their answers addressed the following criteria in the affirmative:

- Did the respondent work in the VC industry and for how many years?
- Were the firms on which a report was submitted Venture Funded High Technology Start-up Companies (VFSCs)?
- Was the respondent a board member for the firm on which he or she reported?

This chapter presents and explains the methods used as follows:

1. Theory, Research Questions, & Hypotheses
 - a. Theory
 - b. Research Questions & Hypotheses
 - i. Organization of Research Questions & Null Hypotheses
 - ii. Primary Research Questions & Null Hypotheses

- iii. Secondary Research Questions & Null Hypotheses
- 2. Subjects Surveyed
- 3. Instrumentation
 - a. Survey Measures Employed
 - i. Pilot Study
 - ii. Survey Instrument
 - iii. E-mail Survey of Non-respondents
 - b. Independent & Dependent Variables
 - c. Case for Use of the Instrument
 - d. Reliability, Validity, Non-response Bias, & Sources of Measurement Error
- 4. Procedures & Internal Review Board (IRB) Requirements
 - a. Circumstances Affecting the Number of Participants
 - b. Procedures Used to Contact Participants, Letters, and Instruments
 - i. Pilot Study
 - ii. Survey Instrument
 - iii. E-mail Survey of Non-respondents
- 5. Data Analysis
 - a. Statistical Tests Used
 - b. Rationale for Tests
- 6. Chapter 3 Summary

Theory, Research Questions, & Hypotheses

Theory

The entrepreneurship literature strongly supports the contention that vision, and more specifically the founder's vision, is a key to Venture Funded High Technology Start-up (VFSC) organizational success. If one accepts this contention, then one should expect to find statistically significant evidence of a relationship between having a vision and firm performance, and conversely a statistically significant relationship between the number of firms characterized as Living Dead or Failures and the lack of a vision. This study investigated the existence of these relationships.

Research Questions & Hypotheses

Organization of research questions & null hypotheses. The research questions and hypotheses developed for this study have been categorized as primary or secondary. Research questions and hypotheses, which are the basis for testing the proposed theory, have been treated as primary. Research questions and hypotheses, which provide contextual information, have been treated as secondary.

The numerical sequencing of the research questions (e.g. R1, R2...Rn) and corresponding null hypotheses (H1, H2... Hn) have been aligned with the Results section, Chapter 4. As a result, several research questions now have more than one associated null hypothesis stated for testing purposes. The instances of multiple null hypotheses per research question resulted from the two independent analyses of the *survey* and *combined survey and non-respondent sample* data sets. For example: Research questions R3 to R7 (R3–R7) have two sets of corresponding null hypotheses, H3 to H7 (H3–H7), which represent the null hypotheses for the *survey sample*, and H44

to H48 (H44–H48), which represent the null hypotheses for the combined survey and non-respondent samples. The study was conducted in two phases. The first phase represented the survey of 450 NVCA member firms. Henceforth, it is annotated as the *survey sample*. The second phase represented the follow-up survey of non-respondents or the *Non-response Bias Test*. The second phase surveyed 300 out of 413 NVCA member firms, which did not respond to the original survey (Phase 1). Henceforth, this (follow-up) survey is referred to as the *non-respondent survey*. The combined survey and non-respondent survey aggregated the data from the survey sample and the non-respondent sample to form a new composite sample annotated as the *combined survey and non-respondent sample*.

The use of large numbers of specific *classifications* in the survey instrument's answer sets necessitated pooling of classifications to facilitate proper statistical tests. Chi Square and Binomial Tests in particular necessitated pooling techniques to insure *expected contingency table cells* had *counts* of five or greater, which is requisite for the appropriate use of each of these tests. The modest survey response rate simply did not generate high enough frequency counts in each of the expected contingency table cells to allow for analysis of all the classifications delineated in the survey instrument. This in turn has forced a rewording of several of the study's research questions to more precisely align them with what was examined by the statistical tests.

Primary research questions & null hypotheses. The research questions and the associated null hypotheses that were considered primary in this study are listed below. Please note that research questions R1 and R2 are secondary research questions, and they are addressed in the next sub-section.

1. Primary Research Questions and Null Hypotheses

- a. (R3–R7) Was there a difference between the *observed distribution* of vision classifications which represent *significant change* (e.g. ‘vision changed completely’ + ‘vision disregarded completely’ + ‘vision changed somewhat’ + ‘vision disregarded somewhat’), and vision classifications which represent *minor change* (e.g. ‘vision changed slightly’ + ‘vision disregarded slightly’ + ‘vision sustained’) as a function of firm outcome (e.g. Super-successes, Successes ... Failures) and the *expected distribution* of vision classifications for significant and minor change?
- b. (H3–H7 & H44–H48) There was no difference between the observed distribution of vision classification frequency counts which represent significant and minor change as a function of firm outcome, and the expected distribution of vision classification counts for significant and minor change.

Secondary research questions & null hypotheses. The 21 secondary research questions were designed to qualify the responses and provide context to the study. Null hypotheses are presented immediately following their respective research questions in the following list.

1. Secondary Research Questions & Null Hypotheses

- a. R1 and H1 & H43
 - i. (R1) Was there a difference between the observed distribution of firm outcomes, which experienced a *succession event*, and the expected distribution of firm outcomes?

- ii. (H1 & H43) There was no difference between the observed distribution of firm outcome counts, which experienced a succession event, and the expected distribution of firm outcome counts for firms which did and did not experience a succession event.
- b. R2 and H2
 - i. (R2) What percentage of VFSC firms had a (founder's) vision?
 - ii. (H2) There was no difference between the survey sample proportion of firms that had a vision and the estimated proportion of firms that had a vision.
- c. R8–R12 and H8–H12 & H49–H53
 - i. (R8–R12) Was there a difference between the observed distributions of vision valuation counts (e.g. 'highly valued' vision and 'less than highly valued' vision ['somewhat valued' + 'not valued' + 'no vision']) as a function of firm outcome and the expected distribution of vision valuation counts for 'highly valued' and 'less than highly valued' visions?
 - ii. (H8–H12 & H49–H53) There was no difference between the observed distribution of vision valuation counts, which represent 'highly valued' visions, and 'less than highly valued' visions as a function of firm outcome, and the expected distribution of vision valuation counts.
- d. R13–R17 and H13–H17 & H54–H58
 - i. (R13–R17) Was there a difference between the distributions of vision clarity (e.g. 'very clear' versus 'somewhat clear' + 'unclear' + 'no

- vision’) as a function of firm outcome, and the expected distribution of vision clarity?
- ii. (H13–H17 & H54–H58) There was no difference between the distributions of vision clarity counts as a function of firm outcome and the expected distribution of vision clarity counts.
- e. R18–R22 and H18–H22 & H59–H63
- i. (R18–R22) Was there a difference between the distributions of vision conformity classifications (e.g. ‘largely conforms’ versus ‘somewhat conforms’ + ‘does not conform’) as a function of firm outcome, and the expected distribution of vision conformity?
 - ii. (H18–H22 & H59–H63) There was no difference between the distributions of vision conformity counts as a function of firm outcome and the expected distribution of vision conformity counts.
- f. R23 and H23 & H64
- i. (R23) Was there a difference between the observed distribution of significant changed-related vision classifications (e.g. ‘vision changed completely’ + ‘vision disregarded completely’ + ‘vision changed somewhat’ + ‘vision disregarded somewhat’), and minor or no change-related vision classifications (e.g. ‘vision changed slightly’ + ‘vision disregarded slightly’ + ‘vision sustained’) in firms which experienced a succession event, and the expected distribution of change-related vision classifications for all firms?

- ii. (H23 & H64) There was no difference between the observed distribution of change-related vision classification counts in firms which experienced a succession event and the expected distribution of change-related vision classification counts for all firms.
- g. R24 and H24 & H65
 - i. (R24) Was the mean failure rate of VFSCs, obtained via survey, different to the failure rate reported by Cooper & Bruno (1977)?
 - ii. (H24 & H65) There was no difference between the proportion means of Failures, calculated from the results of the survey sample and the combined survey & non-respondent samples, and the proportion mean of Failures reported by Cooper& Bruno, (1977).
- h. R25 and H25 & H66
 - i. (R25) Was there a difference between the proportion mean of Projected Successes, calculated from the results of the survey sample and the combined survey & non-respondent samples, and the proportion mean of Projected Successes reported by Ruhnka et al. (1992)?
 - ii. (H25 & H66) There was no difference between the proportion mean of Projected Successes, calculated from the results of the survey sample and the combined survey & non-respondent samples, and the proportion mean of Projected Successes reported by Ruhnka et al. (1992).
- i. R26 and H26–H42

- i. (R26) Was there a statistically significant difference between the survey sample response set and the non-respondent sample response set?
- ii. (H26–H42) There was no statistically significant difference between the response sets provided by the survey sample and the response sets provided by the non-respondent sample.

Subjects Surveyed

The *participants* in this study were a cross-section of the approximate 472 members of the National Venture Capital Association (NVCA). The NVCA is a trade association which represents the public policy interests of the venture capital community, provides reliable industry data, facilitates interaction among its members, and provides other professional services. The candidate population for this survey was selected because the NVCA member firms represent a high percentage of the professional firms specializing in High Tech venture investments. The vast majority of the expertise and resources required to successfully conduct this type of business is contained within these firms. All the listed NVCA members were contacted via the email solicitation package (Appendixes F, G, H, I, J, K, L, M, & O); however, a large percentage (92%) of the contacted firms chose not to participate in the survey for a myriad of reasons, not the least of which included; time, confidentiality, and firm policy. A follow-up reminder email (Appendix N) was sent to NVCA members who did not immediately respond to the survey solicitation package one week after the survey was launched. Twenty-two member firms disqualified themselves because their principal business involves providing financial services to the VC industry, and as such, they do not invest in VFSCs. These

firms use their memberships in the NVCA to track and familiarize themselves with the industry.

The survey requested that one executive from each VC firm be assigned to respond to the survey. The respondents, who participated, were either selected by their peers, volunteered to participate on their own, or responded to a follow-up phone call from me. All, but possibly one respondent, had the requisite knowledge and experience as judged by this researcher to answer the survey questions.

Instrumentation

Survey Measures Employed

The three measures employed in this study include:

1. Pilot Study
2. Survey Instrument
3. Non-response Bias Test (using the electronic survey instrument)

The Pilot Study was used to evaluate the survey instrument's *reliability* and *validity*. The newly developed survey instrument was used to acquire data for answering the research questions and determining the relative importance or significance of the variables. The survey instrument was used to ascertain industry Success/Failure rates and Projected Success/Living Dead rates of occurrence. The Non-response Bias Test generated a data base that was used to determine if the non-respondents' answers to the survey instrument were or were not statistically equivalent to the survey respondents' answers.

Pilot study. A pilot study, which used the newly developed survey instrument, was conducted to determine the survey's reliability and validity. The study was

conducted in two phases: The first phase employed a targeted selection of seven senior executives who had extensive experience in the VC industry and were considered to be industry experts by me. Qualification as a High Tech industry expert came as a result of an analysis of four suitability variables that were used to judge (score) each of the executives. A fundamental requirement for being judged to be an expert was the need to have some experience or exposure to each of the four measured variables. The results for each of the four variables were summed to calculate a suitability index. A suitability index of 10 or greater was judged by me to be sufficient to consider the executive an expert. 10 represented an average score of 2.5 out of a possible 5.0 across all four variables. Appendix P displays the scoring of each executive by suitability variable and the calculated suitability index. The qualification variables were (a) years of experience in the High Tech industry as a senior executive (eg. Board Member, CEO, COO, CTO, or CFO), (b) the number of High Tech firms at which the executive had worked as an officer or board member, (c) the level of involvement or exposure to the Board of Directors, and (d) the executive's familiarity with this study's variables.

The selected respondents were asked to take the survey twice with a three week interval between administrations (of the survey) to determine if the survey instrument responses were repeatable over time. The second phase required the same seven executives, who participated in the repeatability test, to answer a specific *yes* or *no* question related to the content validity of the survey instrument. Detailed information about how the reliability and validity testing was conducted and the results (of the testing) have been provided in the section titled, *Reliability & Validity*.

Survey instrument. The survey instrument used in this study was developed by Dr. William Bleuel, Dr. Robert Canady, and me. Refer to Appendix O for a copy of the survey instrument and Appendix Q1 for a graphic representation of the survey plan. Appendix Q presents an explanation of how to interpret the Survey Plan (Appendix Q1). The instrument was specifically designed to investigate the following relationships:

1. Firm outcome as a function of occurrence of a succession event.
2. Firm outcome as a function of the degree to which the founder's vision was sustained, changed, or disregarded during the pre-IPO period.
3. Firm outcome as a function of the degree to which the founder's vision was valued by the Board of Directors.
4. Firm outcome as a function of the degree of vision clarity.
5. Firm outcome as a function of degree of vision conformity (with the definition provided in the solicitation package).
6. Influence of succession events on the degree of vision change.

The survey instrument generated *nominal, ordinal, interval, and ratio scale* data for purposes of statistical analysis. It was designed to ascertain the experience levels of the respondents, the level of their involvement with the Boards of the firms on which they reported, and the strength of their beliefs in the need for a vision. Finally, the survey instrument was designed to obtain current data from NVCA members on the following industry-wide statistics:

1. Success rate
2. Super-success rate
3. Failure rate

4. Percentage of portfolio firms characterized as Projected Successes
5. Percentage of firms characterized as Living Dead firms

The data were used to determine whether or not current Success/Failure rates and percentages of VC portfolio firms characterized Projected Successes and Living Dead have changed from the figures reported in the literature (Cooper & Bruno, 1977; Ruhnka et al., 1992) prior to the dot.com bust of 2000-2001.

Email survey of non-respondents. One of the anticipated limitations of this study was the expected response rate of between 10% and 20%. Such a poor response rate begged the question; was the survey sample different than the *non-respondent population*? While I suspected there would be no statistically significant differences between the data set provided by the survey sample and the data set provided by the non-respondent sample, it was decided (by my committee and me) to establish whether or not a difference or *Non-response Bias* did or did not exist. To that end, seven days after the survey response period expired, an e-mail survey of non-respondents (*non-respondent survey*) was conducted to gather a comparable data set that could be used to test for statistically significant differences between the survey sample and the non-respondent sample.

The non-respondent survey was conducted electronically in the same manner as the original survey with a slightly modified solicitation letter (Appendix R). The procedures, used to conduct the Pilot Study, Survey, and Non-response Bias Test, are described below in the section titled: *Procedures and Internal Review Board (IRB) Requirements*. The solicitation email letter to the non-respondent population explained

the need for the added data. Appendixes F, H, I, K, & M were attached to the solicitation email (Appendix R) to comply with university and IRB requirements.

Three groups of 100 members were selected from an alphabetical listing of all non-respondent NVCA member firms using a *pseudo-random number generator*. The email Non-response Bias Test solicitation package was sent to the first group of 100 non-respondents, and they were allocated two weeks to respond to the email request for participation. At the end of two weeks, the second group of 100 non-respondents was sent an email request for participation in the Non-response Bias Test. They were given an additional two weeks to respond. The third and final group of non-respondents were sent the email request for participation after the second groups' response period expired, and they were given an additional two weeks to participate in the Non-response Bias Test.

Fifteen statistical tests were performed on the survey and non-respondent sample data sets to determine whether or not the two samples came from the same population (NVCA member firms).

Independent & Dependent Variables

The objectives of each of the three survey measures differed significantly in their purpose. That said many of the survey dependent and independent variables were common to all three of the survey measures. The lists presented below show the Pilot Study's dependent and independent variables first, then the survey instrument and Non-response Bias Test dependent and independent variables which are supplementary (to the Pilot Study dependent and independent variables). Neither the Spearman's ρ Rank Order Correlation Coefficient nor the Validity Measure, which were Pilot Study dependent

variables, was considered a dependent variable for the survey and the Non-response Bias Test.

Pilot study. The Pilot Study independent variables were as follows:

1. Years of VC Industry Experience
2. Strength of Belief in the Need for a Vision
3. Vision (or No Vision)
4. IPO Success Rate
5. IPO Super-success Rate
6. Venture Firm Failure Rate
7. Percentage of Firms in a VC firm's Portfolio Classified as Projected Successes
8. Percentage of Firms in a VC firm's Portfolio Classified as Living Dead
9. Board Member (or not)
10. Classification of Vision Change (Changed, Disregarded or Ignored [Both have equal weighting.], or Sustained)
11. Classification of Vision Clarity
12. Vision Articulated in Writing (or not)
13. Classification of Vision Conformity
14. Classification of Vision Valuation (by BOD & Executive Officers)
15. Number of Firms Reported to have had a Succession Event

The Pilot Study's dependent variables were the following:

1. Spearman's ρ Rank Order Correlation Coefficient (Test-Retest Correlation Coefficient or the *Coefficient of Stability*)

2. The Validity Measure (Question answered *yes* or *no*)
3. Count of Super-successes
4. Count of Successes
5. Count of Projected Successes
6. Count of Living Dead
7. Count of Failures

Survey instrument & email survey of non-respondents. The survey instrument and the email survey of non-respondents had the same independent variables as the Pilot Study but with the following addition:

1. Number of Respondents Reporting a Succession Event

The dependent variables for the survey instrument and the email survey of non-respondents included the Pilot Study's dependent variables and the supplemental dependent variables listed below. Please note: Neither the Spearman's ρ Rank Order Correlation Coefficient nor the Validity Measure belong to the survey instrument and Non-response Bias Test dependent variables. They pertain only to the Pilot Study.

1. Percentage of Respondents Reporting a Succession Event
2. Percentage of Firms Reported to have had a Succession Event
3. Percentage of Each Firm Outcome
4. Change in Success/Failure Rates
5. Change in Projected Success/Living Dead Proportions
6. Percentage of Firms with a Vision
7. Difference in the Distribution of Vision Clarity Counts
8. Difference in the Proportion of Firms with Vision Articulated in Writing

9. Difference in the Distribution of the Vision Conformity Counts (with study's definition)
10. Difference in the Distribution of the Vision Valuation Counts (by BOD & Executive Officers)
11. Difference in Years of Experience between Survey & Non-respondent Samples
12. Difference in Mean Value of Belief in Need for a Vision between Two Samples
13. Difference in Distribution of Firm Outcome Mean Counts between Two Samples
14. Difference between Proportions of Respondents Reporting a Succession Event
15. Difference between Proportions of Firms Reporting a Succession Event
16. Difference between Distributions of Vision Change-related Classifications
17. Difference in Success/Failure Proportion Means between Two Samples
18. Difference in Projected Success/Living Dead Proportion Means between Two Samples

Case for Use of the Instrument

The case for using the survey instrument rested largely on my conviction that no other survey instrument, available at the time this survey was conducted, could capture the data this survey instrument endeavored to capture. The literature review (Chapter 2) supported this contention in that the data this survey endeavored to capture was not in evidence in any of the hundreds of books and articles I read in preparation for the research component of this study.

While I would have preferred to use survey instruments which had an established history of being *reliable* and *valid*, I believed the measures that were undertaken in this exploratory study to demonstrate the survey instrument was reliable and valid were more than adequate to achieve the desired results. Those measures will be discussed in the next section (of this chapter).

Additionally, the targeted audience for this survey is renowned for its frenzied pace of activity, discretion, and disdain for outsiders meddling in their business affairs. Complex inquiries, be they in the form of surveys, questionnaires, and letters, requesting information, are routinely discarded before they reach their intended audience. That said I paid careful attention in the development of the survey instrument to ensure the target audience would not be severely taxed for time if they decided to participate (in the survey). This was accomplished by carefully limiting the number of questions asked, reducing the complexity of the answer set, and maximizing the information content (Abramson, 1963) per response to each question.

Reliability, Validity & Non-response Bias

Reliability. Survey instrument reliability was demonstrated by testing for *repeatability*. A test-retest sequence (using the survey instrument) was administered to a set of seven senior executives (experts) possessing extensive experience with VFSCs. The sample of seven executives was chosen from a list of suitable executives known to me. The test was administered at a time convenient for the participants. Each participant was handed a solicitation package (Appendixes G, H, I, K, L, O, S, & T), and the package was reviewed in detail with each. Participants had the choice of using the electronic survey instrument or manually filling out a survey worksheet. The retest was

administered between three and four weeks later. This period (of time) was judged by me to be sufficient to minimize the residual impact of taking the survey on the participants' short-term memories. The results of the test-retest sequence were then evaluated to determine to what degree they correlated and/or agreed. The measures of correlation, Spearman's ρ Rank Order Correlation Coefficients (or the *coefficients of stability*), were determined by first arranging the data sets into four appropriate correlation data sets and then calculating the Spearman's ρ correlation coefficient for each (Emory, 1980; Gibbons, 1993; Huck, 2004; Langley, 1968; Mendenhall, Beaver, & Beaver, 2006b).

The nominal scale data generated from *yes* or *no* questions in the survey instrument were aggregated into a frequency or count of *yes* answers for each of the seven respondents in both the test and re-test phases of the reliability study. These counts were then analyzed using Spearman's ρ Rank Order Correlation Test. Since the counts represent interval or ratio scale data, I judged the Spearman's ρ Rank Order Test to be an acceptable test for this type of correlation analysis. Use of the Spearman's ρ Rank Order Test on the *yes* counts had the added advantage of producing a correlation coefficient that could be compared with the correlation coefficients from the other three correlation analyses discussed next.

The three other correlation exercises were performed on ordinal scale data produced from questions that requested Likert Scale response sets. The Spearman's ρ Rank Order test is one of several recommended correlation tests for analyzing this type of ordinal scale data (Emory, 1980; Gibbons, 1993; Mendenhall et al., 2006b).

Validity. *Content validity* was determined by the same group of seven executives who participated in the reliability test. They were asked to evaluate the survey instrument to determine if it measures what it was designed to measure.

Criterion validity was not measured for the survey instrument. The instrument was new and as such, there was no criterion to measure it against.

Construct validity was not be evaluated as there were no known (*Construct*) variables that could be correlated to the variables the survey sought to study.

Non-response bias. Non-response bias was assessed by comparing the survey sample results with the non-respondent sample results obtained via a post-survey email solicitation to the non-respondent population. Several statistical tests were used to determine if statistically significant differences in the results of the two surveys existed. Please refer to the section titled, *Statistical Tests Used*, for a complete listing of the tests used in this study.

Sources of survey instrument measurement error. The use of Likert Scales, which produce ordinal scale data, is widely accepted in Social Science research (Lissitz & Green, 1975). However, the use of these scales does present the researcher with sources of measurement error with which the reader should be aware. The Statistics Literature has recognized the existence of these sources of measurement error for over fifty years (Stevens, 1946). All of the Likert Scales used in this study were ordinal scale (Emory, 1980; Stevens, 1946). That is they inferred a direction or a progression, but they did not indicate a consistent increment, interval, or step size between classifications. A specific scale used in this study illustrates the point: One of the survey questions provides the following list of possible answers: (a) largely conforms, (b) somewhat conforms, (c) does

not conform, and (d) not applicable/no vision. While most survey respondents would be expected to be able to discriminate between (d) not applicable/no vision and any of the other possible answers, (a) through (c), it is not at all clear that survey respondents would be able to accurately discriminate between (a) largely conforms and (b) somewhat conforms even if they were evaluating the same firm's vision (against the definition used in this study). In the case of this study, the survey respondents evaluated firms' visions which were completely independent of each other, and thus they had no benchmark or *stake-in-the-ground* against which to base their responses.

The optimal number of scale points on a Likert Scale has been studied extensively (Weathers, Subhash, & Niedrich, 2005); however, the results have not been consistent. Some researchers suggest a scale with seven scale points is optimal for obtaining accurate data, while others insist four or five scale points are optimal. This study has employed four point, five point and seven point scales, so it must be assumed that at least one of the response sets in this study is sub-optimal.

Recent research has identified several additional factors which influence scale reliability and response accuracy when using Likert Scales. Weathers et al. (2005) observed survey respondents tend to select the same response alternative in a series of questions if the task of discriminating between response alternatives becomes complex or there are an increasing number of response options. This behavior has been identified as the Status Quo Heuristic (SQH). Survey respondents with a high Need for Cognition (NFC) or "tendency to engage in and enjoy thinking," (Cacioppo & Petty, 1982, p. 116) will tend to discriminate among response alternatives, but individuals with a low NFC will tend to use the SQH. Finally, Ashcraft (1994) and Cowan (2000) determined that as

processing power, the amount of cognitive resources available, increases, survey respondents are better able to discriminate among a greater selection of response options. Conversely, SQH will be more frequently employed when processing power diminishes.

Procedures & Internal Review Board (IRB) Requirements

Circumstances Affecting the Number of Participants

The number of participants surveyed in this study was limited to the approximate 472 members of the NVCA. The NVCA is the industry trade association chartered with representing the interests of the independent U.S. venture capital industry. It is widely recognized as a reliable source for information on economic developments within the venture capital community. Numerous other venture related organizations exist within the U. S. for individual investors (angels), corporate investors, and other organizations which support entrepreneurial activity. However, only the NVCA focuses its attention on VFSCs; the types of companies this survey sought to study.

The population of firms, eligible to participate in this survey, was reduced by 22 firms leaving 450 firms that were actually eligible to be surveyed. Several NVCA member firms notified me they were NVCA members; however, they informed me they only provided financial services to NVCA member firms that actually invest in VFSCs. Several other firms were removed from the survey solicitation pool because they were deemed unsuitable for participation by me. Several of these NVCA member firms were based in foreign countries, and I decided I would not be able to communicate effectively with them.

Finally, the VC community has historically been reticent to participate in industry surveys. Response rates to survey requests have been typically in the range of 10 to 20

percent. That said it was projected (by me) that the population of survey respondents would be on the order of 30 to 50 firms assuming a 40% qualification rate and a 20% response rate ($450 * 0.8 * 0.5 * 0.2 = 36$). The 40% qualification rate was derived from two assumptions: (a) 80% of contacted firms would meet the criteria of having invested in VFSCs, and (b) 50% of the respondents would be judged by me to be qualified to participate in the study based on their answers to the survey instrument qualification and background questions. The forecast of the number of NVCA firms, which would participate in the survey, proved to be quite reliable. This is discussed in detail in Chapter 4.

Procedures Used to Contact Participants, Letters, & Instruments

Pilot study. The procedures and documents used in executing the Pilot Study were as follows:

1. I selected a set of seven senior executives with extensive experience in the VC industry.
2. The selected sample was polled to determine their level of interest in participating in the Pilot Study.
3. An electronic or hard copy Pilot Study solicitation package was emailed or handed to each of the selected participants. This package included a list of definitions (Appendix I), a Backgrounder (Appendix H), a list of instructions for participating in the survey (Appendix T), and a cover letter (Appendix S) which accomplished the following:
 - a. Solicited the recipients voluntary participation in the Pilot Study and explained what the Pilot Study was and how it was to function.

- b. Provided direction on how to access the Pilot Study electronic survey instrument.
 - c. Explained what information was sought and how it was going to be used by me as researcher.
 - d. Informed the respondents that the Pilot Study was being conducted under the supervision of Dr. Robert Canady, Pepperdine University faculty, and the Pepperdine University Internal Review Board (IRB) for Human Participant Studies.
 - e. Provided contact information for Dr. Robert Canady and me in the event follow-up questions arose or clarification about the Pilot Study was needed.
 - f. Explained how privacy and confidentiality of data and participants was to be maintained.
 - g. Explained how response data was to be stored, for how long it was to be stored, and how it was to be disposed.
 - h. Advised the respondents of their right to obtain a statistical summary of the Pilot Study results, and the date the summary was to be made available.
4. The Pepperdine-Qualtrics survey engine collected and stored the Pilot Study results for analysis.

My committee and I remain the only ones who have access to the Pilot Study survey results stored on the Pepperdine-Qualtrics survey engine. Each survey response has been stored in a password protected file on a secure server. The survey engine

provided automated analysis tools for the data in the form of statistics, bar graphs, pie charts, etc.

Survey instrument. The planned procedures and documents used to execute the survey instrument were as follows:

1. The Pepperdine-Qualtrics survey engine was used as the *clearinghouse* for storing the results of the survey.
2. A survey instrument solicitation package was emailed to each of the approximate 472 members of the NVCA. This package included a cover letter (Appendix F) which accomplished the following:
 - a. Solicited their participation in the survey and explained how the survey was to be conducted.
 - b. Provided direction on how to locate, answer, and respond to the electronic survey.
 - c. Explained what information was sought and how it was going to be used.
 - d. Informed the respondents that the survey was being conducted under the supervision of Dr. Robert Canady, Pepperdine University faculty, and the Pepperdine University Internal Review Board (IRB) for Human Participant Studies.
 - e. Provided contact information for Dr. Canady and me in the event follow-up questions arose or clarification about the survey instrument was needed.
 - f. Explained how privacy and confidentiality were to be maintained.

- g. Explained how response data was to be stored, for how long it was to be stored, and how it was to be disposed.
- h. Advised the respondents of their right to obtain a statistical summary of the survey responses, and the date the summary was to be made available.

NVCA members selected (by me) to receive the survey solicitation package were identified using the following process:

- The NVCA membership mailing list was retrieved from the NVCA web-site.
- The contact persons listed on each member firm's web-page link were reviewed to determine the most appropriate persons to whom I would send the solicitation package. The target audience was senior managing partners, general partners, founders, or respected members of the VC community as determined by me.
- If a suitable contact was not listed on the member firm's web-page, I went to the firm's web-site to determine who the most suitable person (to receive the solicitation package) might be.
- Highly experienced VC's, who I know through experience or reputation, were also added to the solicitation list when they were discovered to still be active in making investments or managing firms in the VC industry.

Additionally, the electronic solicitation package contained instructions (Appendix G) for accessing, filling out, and submitting the survey, a Backgrounder (Appendix H) which briefly explained the rationale, purpose, and theory behind the survey instrument, a list of definitions for key terms used in the survey (Appendix I), a reference letter from Floyd Kvamme of Kleiner Perkins (Appendix K), my resume (Appendix J), the Memorandum

of Informed Consent (Appendix L), and the survey worksheet developed to assist participants respond to the survey instrument (Appendix M). A follow-up email reminder (Appendix N) was sent to all the targeted NVCA members who had not responded to the email solicitation package one week after the original solicitation letter was sent.

Email survey of non-respondents. The procedures and documents used in executing the non-respondent email survey were the following:

1. One week after responses to the survey instrument stopped being collected, an alphabetical listing of all the non-respondent NVCA members was created. The members, who were contacted for the survey but chose not to participate, were re-contacted for the non-respondent survey using a process described below.
2. The individuals selected to be contacted were typically managing general partners of firms, VC's with extensive experience in the industry, or someone who had been recommended as a possible source by my contacts in the industry.
3. A pseudo-random number generator was applied to the list to create a *pseudo-random* ordering of NVCA firms.
4. The list was broken into four groups of roughly 100 NVCA members and three of the groups were sent email solicitation packages. Two weeks after the third group received its solicitation package, the Non-response Survey was terminated, and no additional (non-respondent) survey responses were recorded. Fourteen responses were received, and that was deemed to be a

sufficient number to test for differences in the two samples (survey & non-respondent).

5. Each of the three groups that were solicited was emailed the solicitation package sequentially, and they were given two weeks to complete the survey and submit it electronically. All responses were accepted until the non-respondent survey was terminated.
6. At the end of each two week period, the number of responses was counted and evaluated to determine whether or not an additional group of 100 members needed to be solicited. Most if not all (95%) non-respondents, who participated in the Non-response Bias Test, responded to the solicitation package within one week of having received the (Non-response Bias Test) solicitation package.
7. The non-respondents selected for solicitation to participate in the non-respondent survey were sent the following documents (Appendixes F, H, I, K, & M) electronically appended to the non-respondent survey solicitation letter (Appendix R). Appendix F was the original survey solicitation package cover letter, and it documented the terms and conditions for participation in the survey. These terms and conditions applied to the non-respondent survey to the same extent as they applied to the survey. Appendixes H (Backgrounder) and I (List of Definitions) were combined into one *word document* and they were electronically attached to the solicitation email (Appendix R). Appendix M was electronically attached to the solicitation email. It was an *excel worksheet* designed as a tool to assist respondents with the taking of the

survey instrument. It was developed in response to issues that surfaced in the Pilot Study. Appendix K was appended to Appendix R. It was the Floyd Kvamme letter of introduction.

Data Analysis

Statistical Tests Used

The statistical tests used in this study are summarized below:

1. One-sample Chi Square Test
2. Two-sample Chi Square Test
3. Spearman's ρ Rank Order Correlation Coefficient
4. Student's t -Test
5. Large Sample z -Test
6. Wilcoxon Sum of Ranks Test
7. Binomial Test
8. Fisher's Exact Test

Rationale for Tests Used

The rationale for using the one-sample Chi Square Test was this test was one of the recommended tests for analyzing nominal-scale and ordinal-scale data (Emory, 1980). It was designed to test for statistically significant differences between a sample distribution and a much larger population distribution.

The survey instrument was designed to acquire nominal scale and ordinal scale data in the form of *yes* and *no* answers (nominal scale) and *Likert-like* qualitative responses (ordinal scale). The frequency counts of data acquired via the survey instrument were compared with *expected counts* derived from survey and non-respondent

survey sample populations to determine if statistically significant differences were discernable.

The rationale for using the two-sample Chi-Square Test was this test was one of the recommended tests for analyzing differences between two sample distributions of nominal or ordinal data. The two-sample test was used primarily in comparing survey sample data with non-respondent sample data in the Non-response Bias Test.

The Spearman's ρ Rank Order Correlation Coefficient (Gibbons, 1993) was used to determine the degree of correlation that was achieved in the test-retest sequence of the Pilot Study. It is a correlation statistic that is ideally suited for comparing ordinal scale data of the type generated in the test-retest sequence.

The Student's *t*-Test was used to test for differences between the mean values and proportions of small samples (interval & ratio scale data) and the mean values and proportions of other corresponding small samples. It is typically used when sample sizes are less than 30 (Mendenhall, Beaver, & Beaver, 2006a). The Student's *t*-Test was also used to test for a difference between a small sample mean and a larger sample mean. The Non-response Bias Test sample size was only 14, so this test was used to test for differences between current (non-respondent) proportions of Successes & Failures and Projected Successes & Living Dead and previously published data for these firm outcomes.

The Large Sample *z*-Test (Mendenhall, Beaver, & Beaver, 2006c) was used to test for differences between mean values or proportions of large samples and mean values or proportions of other corresponding large samples or populations. It is typically used when

sample sizes are 30 or greater. The Large Sample z -Test was also used to estimate population mean values and proportions for a large population.

The Wilcoxon Sum of Ranks Test (Langley, 1968) was used to compare the distribution of rankings for one sample with the distribution of rankings for a second corresponding sample. The specific cases involved a sample size of 14 (non-respondent sample) and a sample size of 37 (survey sample). Coding was employed to rank the survey data sets. The rationale behind using the Wilcoxon Sum of Ranks Test was to confirm the results of t -Tests performed to determine if the survey and non-respondent data sets came from the same population.

The Binomial Test (Langley, 1968) was used in cases where the one-sample Chi-Square Test could not be used because the expected number of frequency counts in the Chi Square contingency table cells was less than five. The Binomial Test is the recommended test for data sets which have this characteristic. The Binomial Test was also used to confirm the results of Chi Square Tests which had expected contingency table cell counts of five or slightly more.

A Fisher's Exact Test (Garson, 2008) was performed to compare the proportion of survey sample respondents, who experienced a succession event, with the proportion of non-respondent survey respondents who experienced a succession event. The rationale for using the Fisher's Exact Test was the sample size of the non-respondent sample was considered too small to conduct a Large Sample z -Test. The Fisher's Exact Test is recommended for binomial samples with a number of observations between 8 and 50 (Langley, 1968).

Chapter 3 Summary

This chapter has presented and explained the methods that were employed in this study. The three phases of the study; namely, the Pilot Study, Survey, and Non-response Bias Test have been outlined. A brief review of the theory that motivated the study was conducted. The study's research questions and corresponding null hypotheses have been listed. The subjects of the study have been characterized, and the instruments used to conduct the surveys have been explained. The dependent and independent variables used in each phase of the study have been defined and listed. A case for the use of the survey instrument used in the study has been developed, and the methods used to establish the instrument's reliability and validity have been documented. The procedures and policies used to conduct the survey have been elucidated. The documents and electronic materials used to contact the subjects of the survey have been described and referenced. The circumstances affecting the number of survey participants have been highlighted. Finally, the statistical tests, employed to analyze the study's research questions, have been listed, and the rationale for their use has been presented.

Chapter 4: Analysis & Results

Organization of Results

The results of this study (Chapter 4) have been organized into six sections as follows:

1. Pilot Study
2. Survey Results and Non-response Bias Test Overview
3. Survey Results
4. Non-Response Bias Test Results
5. Combined Survey & Non-response Bias Test Results
6. Chapter 4 Summary

The Pilot Study consisted of a Content Validity Test and a Test-Retest Reliability Test. Experience gained from using the electronic survey instrument was incorporated into the survey instrument prior to its distribution to the target audience.

The Survey Results and Non-response Bias Test Overview provide background information on the targeted audience, and it explains how the survey instrument was used for both the survey and the Non-response Bias Test. It discusses the reasons some survey respondents did not complete the survey, and it explains how the target audience was selected.

The Survey Results section is broken into five segments. Survey respondent qualification and background information are provided in the first segment. Information on respondents and respondents' firms are discussed in the second segment. Vision-related data and analysis are discussed in the third segment. Industry Success/Failure

rates are discussed in the fourth segment. The section concludes with the results of the questions regarding confidentiality and the study's questions.

The Non-response Bias Test Results section discusses all the tests conducted to establish that a Non-response Bias did not exist. It concludes with a summary of all the tests conducted and their statistical significance or lack thereof.

The Combined Survey and Non-response Bias Test Results section discusses the results of combining the survey sample data set with the non-respondent sample data set. The statistical tests conducted on the survey sample data set are repeated to determine if any differences exist between the survey sample and the combined survey and non-respondent sample. This chapter concludes with a summary of the results and findings.

Pilot Study

A Pilot Study, using the survey instrument developed by me and my committee specifically for this study, was conducted to establish content validity and to determine if the survey instrument was repeatable prior to its distribution to the target audience. The Content Validity study has been identified as phase I of the Pilot Study, and the Test-Retest repeatability test has been identified as phase II of the study. The Pilot Study was also used to identify and correct weaknesses in the survey instrument. The weaknesses ranged in scope from misleading text to typographical errors to text that required further elaboration to communicate the precise line of questioning.

Seven current or former High Tech industry executives with extensive experience in managing start-up companies were administered the survey instrument either electronically or on paper by me. All seven executives participated in both phases of the

Pilot Study. Convenience in recovering the Pilot Study data dictated the format for acquiring the data from the seven respondents.

Content Validity Test

In the case of the validity test, the seven executives, who were judged to be industry experts by me (Refer to p. 76 for an explanation of the process used to select the industry experts.), were asked to respond to the following question at or after the administration of the survey for the second time:

In your opinion as an expert in the subject area, does this survey instrument test for what it purports to test for? In other words, is the survey instrument useful in acquiring data that will be suitable for answering the research questions? Said another way, does the survey instrument ask the relevant and appropriate questions for studying the influence of the founder's vision on the outcomes of venture funded start-up companies? All I need from you is a *yes* or *no* answer to this question.

The timing for the administration of the validity test was designed to coincide with the administration of the second or repeat part of the reliability test, which was a minimum of three weeks after the administration of the first test for reasons dictated by the design of the repeatability test. This provided the Pilot Study respondents with the maximum exposure to the survey instrument, enabling them to both understand the questions in the instrument and to discern their degree of appropriateness. In every case I either met individually with each of the Pilot Study respondents or corresponded with them via email and/or over the phone. These interactions (by me) were intentional as I

wanted to make sure the survey questions made sense and the respondents understood the essence and purpose of each question.

While the validity test called for a simple *yes* or *no* answer, several respondents chose to elaborate on their answers without prompting from me. I have interpreted their responses as an indication they gave thoughtful and discerned responses.

Table 1 provides a summary of the validity test responses along with any additional comments that were provided at the time the test was conducted.

Table 1

Summary of Validity Test Results

Respondent	Response	Comments
1	Yes	
2	Yes	
3	No	I think a founders vision is a good beginning, but as the company progresses there are many more factors that determine their outcome. Flexibility is one point, and I think sometimes a founders vision; but more so, his/her inability to change it is the downfall of many start ups.
4	Yes	
5	Yes	More than No.
6	Yes	For pre-IPO firms.

(table continues)

Respondent	Response	Comments
7	Yes	The long winded answer is Yes, as long as you receive a spectrum of answers, such as no, marginal vision and its results, results of change of vision, results in change of leadership to bring new vision and its results, etc... My experience at XYZ Corp was a Super-success driven by a clear and consistent vision of the founder(s). This is at the extreme end of one of the poles of your survey. To make the data relevant, you need the other end and then see how it supports whatever theory or drives a demonstrable conclusion of value.

To summarize, six of seven respondents indicated the survey was valid and one respondent indicated he did not feel the survey was valid, because he felt many other factors have an impact on the outcomes of VFSCs.

The above Content Validity Test was consistent with literature approaches to establishing survey instrument Content Validity (Carmines & Zeller, 1979; Emory, 1980; Huck, 2004). An alternative method for establishing Content Validity, the results of which are documented in Appendix Q1 (Survey Plan), called for a complete review of the survey instrument to determine if each research question in the study had a corresponding survey question that specifically addressed the objectives of each respective research question. Appendix Q1 shows how each survey question mapped one to one to each research question. To summarize, the two procedures used in this study independently

and/or in combination supported my contention the survey instrument had acceptable Content Validity.

Test-Retest Repeatability

The seven senior executives, who participated in the Pilot Study Content Validity Test, also participated in the Test-retest Repeatability Test. The objective of the Test-retest Repeatability Test was to measure a stability coefficient for the survey instrument, and thus make an assessment as to whether or not any differences in the Pilot Study response sets could be attributed to systematic and/or environmental influences.

Survey instrument repeatability is known to suffer from several deficiencies (Emory, 1980; Huck, 2004) such as:

- A time delay between the first and second survey administrations.
- Respondents may remember answers from the first administration of the survey. This usually occurs when the time between administrations is short, which is typically cited as two weeks or less in the literature. The issue that arises from a short test-retest time period is the stability coefficient may be inadvertently biased toward a higher figure than is justified.
- The survey instrument process may introduce a bias. Respondents may become more comfortable with re-taking of the test.
- Respondents become more knowledgeable of the subject matter, and their opinions may change or evolve over the survey administration period.
- Long durations between survey administrations could potentially lead to respondents' views and opinions being influenced by external environmental changes.

The duration of the test-retest period in this study was between three and four weeks with a typical duration of 3.5 weeks. This differs slightly from the target duration of three weeks, which I requested each Pilot Study respondent adhere to. Emory (1980) suggests the ideal duration for a test-retest sequence is from two to four weeks. In the case of this study, comments from the Pilot Study respondents indicated some of them completely forgot the answers they provided during the first administration of the survey, while others made unsolicited written notes about how they intended to answer the survey questions when they initially took the survey. I believe the action of writing down the response set contributed to some degree of memorization of the response set provided in the initial survey. It should be noted I verbally suggested to the Pilot Study respondents they should make a mental note of the categories of firm outcomes they used for their responses to the initial survey. This was done to prevent inadvertent corrupting of the two data-sets, which could result from the same firm being assigned to two different firm outcomes by accident in the test-retest process.

The mixture of nominal, ordinal, interval, and ratio data the survey generated made selection of the statistical tools needed to evaluate the results challenging. The small sample size (7) provided the biggest obstacle as most statistical tests for nominal and ordinal data need sample sizes on the order of 30 to achieve a practical level of *statistical power* (Mendenhall et al., 2006a) . The survey instrument's use of three Likert Scales with differing resolutions further complicated the analysis. For these reasons, I chose to break the data sets into four separate categories coded as follows:

1. Nominal Data from Yes/No questions coded as 1s and 0s.
2. Ordinal Data in the form of Likert Scale values from 1 to 7.

3. Ordinal Data in the form of Likert Scale values from 1 to 5.
4. Ordinal Data in the form of Likert Scale values from 1 to 4.

The scale in item two, above, included a default value of 1 to account for firms that did not change or disregard their visions. (Visions were sustained.)

The next step in the analysis was to aggregate the coded values of all the responses in each category of data to generate before (test) and after (re-test) data sets for each Pilot Study respondent. These values were then subjected to Spearman's ρ Rank Order correlation analyses, the results of which are reported in Table 2.

Table 2

Spearman's ρ Rank Order Correlation Coefficients

Data Category	Spearman's ρ Coefficient
<i>Yes or No Questions</i>	0.906
Likert Scale Data with 7 possible responses	0.847
Likert Scale Data with 5 possible responses	0.891
Likert Scale Data with 4 possible responses	0.927

No effort was made to average the correlation coefficients into a coefficient of stability that represents the entire Pilot Study. I felt the individual Spearman's ρ Rank Order correlation coefficients more than adequately demonstrated the survey instrument was repeatable from a test-retest reliability standpoint. The raw data used to calculate the correlation coefficients is presented in Appendix U.

Survey Results & Non-response Bias Test Overview

888 individuals from approximately 450 NVCA member firms were contacted by email requesting their participation in this study. There was some ambiguity in the number of firms that participated because of mergers, combinations, or virtual partnerships. The number of individuals contacted at each NVCA member firm varied from one to eight depending on the firm's size, reputation, posture within the industry, and the partners' experience levels. Twenty-two NVCA member firms were not contacted because they were deemed to be unsuitable for participation in the survey by me. Thirty-seven firms, or 8.2% of contacted firms, responded to the request for survey participation, of which 22 or 59.5% (of the 37) completed the entire survey. Fifteen (of the 37) or 40.5% of the respondents stopped answering questions after question 10 of the survey. A major consequence of this result was I decided to combine the survey sample and non-respondent sample data sets into one larger sample; hereafter, referred to as the combined sample, in order to enhance the statistical power of the statistical tests I conducted on the combined sample data set.

All responses except one for both the survey and Non-response Bias Test were conducted electronically using the Pepperdine-Qualtrics survey engine developed by me and my committee. The one exception was a case where the respondent did not complete the survey. I contacted the individual by phone to inquire as to why he chose not to complete the survey, and he graciously agreed to take the survey orally over the phone. After recording this individual's response set in writing, I proceeded to erase his earlier response set (provided electronically) from the survey engine data base and replace his response set with the responses he provided over the phone.

If one included the participants from the Non-response Bias Test, the total number of responses was 51. Of the 14 participants in the Non-response Bias Test, 11 or 79% (of the 14) completed the survey. The total number of firms that completed the survey including the Non-response Bias Test respondents was 33 out of the 51 (64.7%). 51 represents a response rate of 11.1% of all NVCA member firms who were contacted by email. Each member firm provided only one response.

Sample polling of the Survey and Non-response Bias Test respondents, who stopped completing the survey after question 10, indicated several reasons for deciding not to complete the survey. These reasons included the following:

- The study's model did not take into consideration the participant firm's strategy of specifically trying to sell its ownership share before the VFSC was ready to go public or IPO.
- The text used in the survey questions was ambiguous from the respondent's perspective and could be answered in several different ways.
- The respondent did not understand the questions, or understand their relevancy to the study, and it would take too much time to complete the study in a professional manner.
- The respondent was retired and had not participated in a venture-funded start-up since the advent of the internet age, circa 2001. This was a requirement for identifying a Super-success firm as defined by this study.

Survey Results

The respondents' survey results have been segmented into five different categories of results as shown below:

1. Qualification & Background Information
2. Respondent & Respondent Firm Data
3. Vision-related Data & Analysis
4. Industry Success/Failure Rates & Percentages of pre-IPO Firm Outcomes
5. Miscellaneous Confidentiality & Study Related Questions

Qualification & Background Information

The following information pertains to questions 1, 2, 4, 6, 7, and 8 of the survey instrument (Appendix O). 36 of 37 respondents provided their names, job titles, and the names of the venture firms with which they were affiliated. One respondent (out of 37) was a retired executive, who may or may not have been peripherally involved with an NVCA member firm at the time of this study. The respondent did disclose his name and job title, but he did not disclose the name of the firm with which he may or may not have been associated. All 37 respondents confirmed they were reporting on VFSCs, and they are or have been board members of the firms on which they were reporting.

Respondent & Respondent Firm Data

The following information pertains to survey instrument questions 3, 5, 9, & 10 (Appendix O). Research questions R1 & R26 are also addressed:

Years of experience. The distribution of the numbers of years of VC experience for the survey sample is displayed in Figure 2. The count for each category of experience is displayed along with its respective percentage of the total number of firms for which a response was received. The survey sample size was 37.

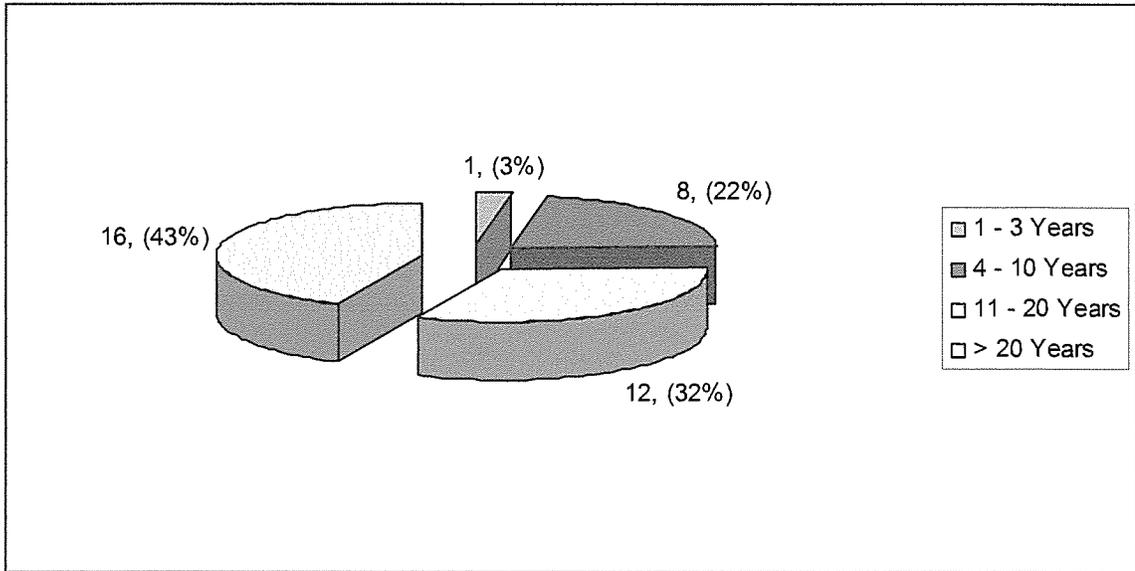


Figure 2. Number of years of respondent experience in the VC industry.

The respondent population had a distribution with a mean number of years of experience in excess of 11 – 20 years. 75.7% of respondents had 11 – 20 years of experience or more. 97.3% of respondents had 4 – 10 years of experience or more. The distribution of respondents, who actually completed the survey, was skewed toward greater numbers of years of experience. Of the 22 respondents who completed the survey, 13 (59%) had > 20 years of experience in the VC industry, 6 (27%) had 11 – 20 years of experience, and 3 (14%) had 4 – 10 years of experience.

Strength of belief in the need for a vision. Figure 3 shows the distribution of the respondents' relative strength of belief in the need for a (founder's) vision. 94.6% of respondents reported they 'believe' or 'strongly believe' VFSCs need a vision. There were no (zero) responses that reported they 'strongly disbelieve' in the need for a (founder's) vision.

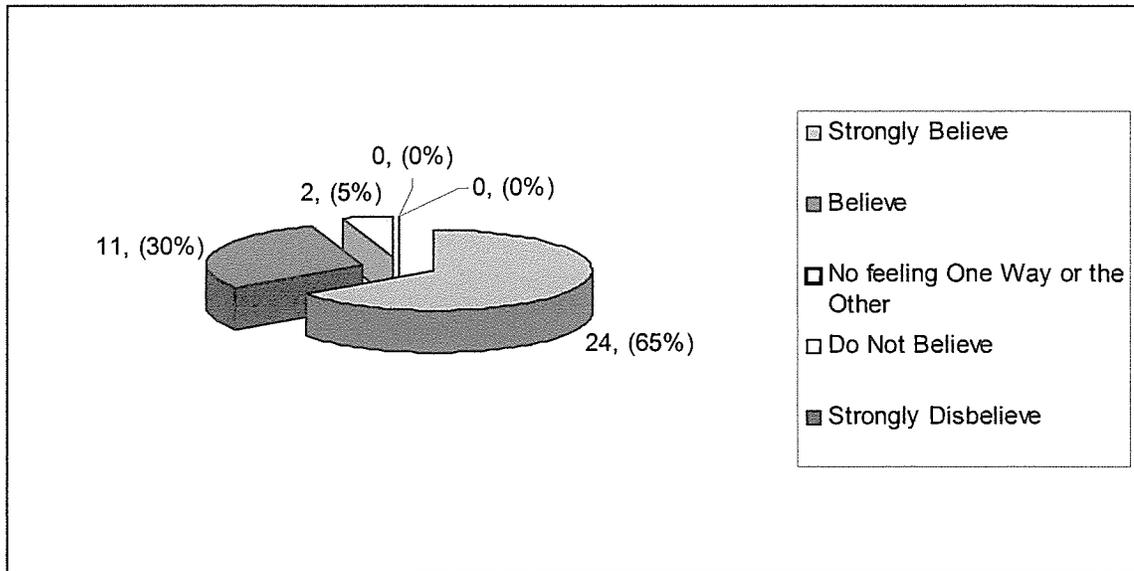


Figure 3. Strength of belief in the need for a (founder's) vision.

Distribution of firm outcomes. Figure 4 shows the distribution of firm outcomes on which the respondents reported. Figure 4 shows respondents reported on all five categories of firm outcomes, Super-successes, Successes, Projected Successes, Living Dead, and Failures, in a numerically comparable fashion. Responses were received for 109 firms. Each category of firm accounted for approximately 20% of the total reported data. This was a somewhat surprising and welcome result as it was assumed (by me) VC's would intentionally or sub-consciously tend to report on Successes at the expense of Failures or Living Dead firms. It should be noted the distribution of firm outcomes acquired in this study is not representative of the distribution of firm outcomes in (the VC) industry. Data will be presented in a later section of this chapter that more accurately describes the actual distributions of firm outcomes in the VC industry; see pages 132 – 138, 161 – 169, & 189 – 193.

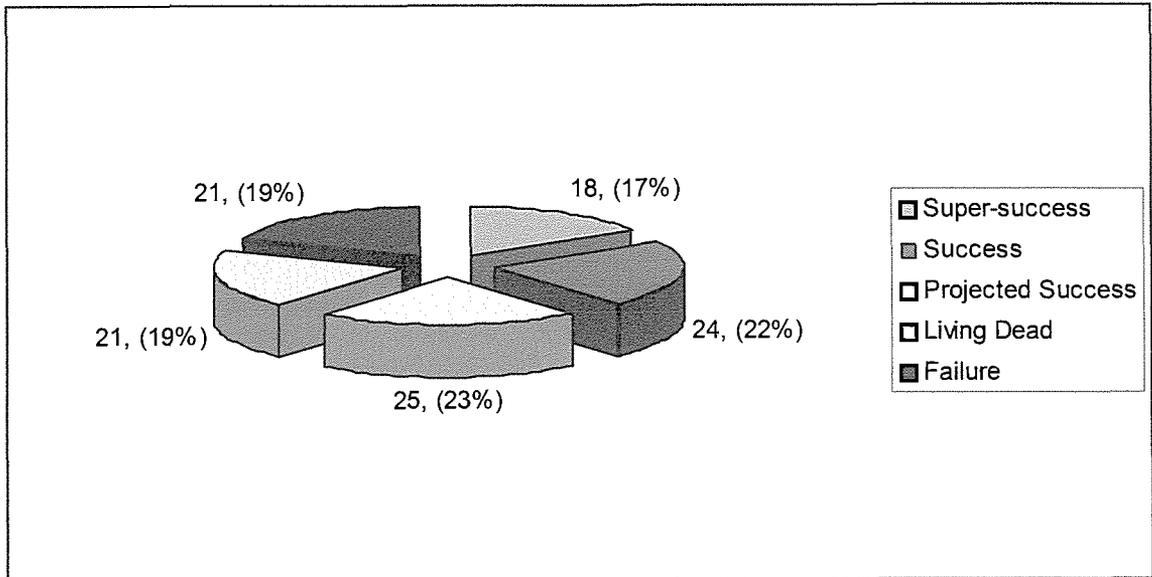


Figure 4. Distribution of firm outcomes on which survey respondents reported.

Percentage of respondents reporting a succession event. Figure 5 shows the distribution of respondents who did and did not report at least one of the firms on which they reported had a succession event during their firm's(s') pre-IPO period(s).

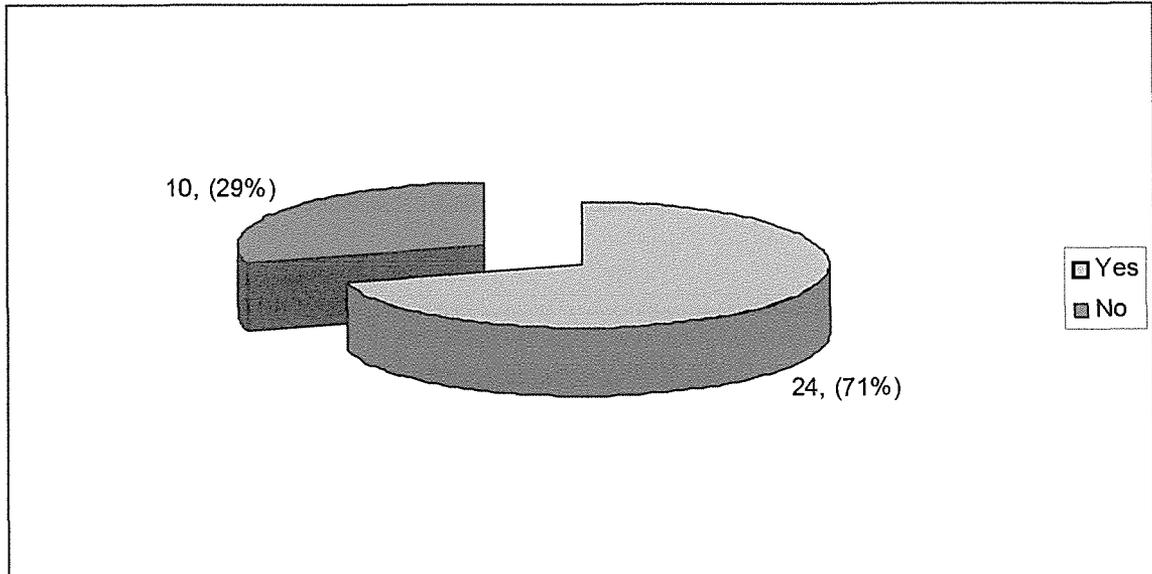


Figure 5. Percentage of respondents reporting at least one succession event.

34 respondents provided responses, and the 34 respondents reported on a total of 72 firms. (Please note, a *Yes* implies the respondent did report he or she encountered a succession event, and a *No* implies the respondent did not report he or she encountered a succession event.) A review of the data set indicates three respondents skipped question 9. (Refer to Appendix O for the text of question 9.)

Distribution of firms which experienced a succession event. Of the 72 firms on which a report was received, 43 or 59.7% of the firms were reported to have had a minimum of one succession event during their pre-IPO period. Table 3 shows the distribution of firms which had succession events as a function of firm outcome.

Table 3

Distribution of Firms, Which Had Succession Events, as a Function of Firm Outcome

Firm Outcome	Number of Firms Reporting a Succession Event	Total Number of Firms	Percentage	Number of Firms with No Data
Super-success	10	15	67%	3
Success	12	15	80%	9
Projected Success	9	16	56%	9
Living Dead	7	13	54%	8
Failures	<u>5</u>	<u>13</u>	31%	<u>8</u>
Totals	43	72	59.7%	37

It is interesting to note the percentages of Successes and Super-successes, which had a succession event, were more than double the percentage of Failures which had a succession event. No data was reported on 37 (of 109) firms. (Recall: 15 respondents

stopped taking the survey at question 10.) The data suggested that in general a large number of VFSCs have had succession events, and succession events did enhance the chances of success. This was consistent with what has been reported in the literature (Bruton et al., 1997; Rosenbloom, 2006; Schefczyk & Gerpott, 2000). However, I offer this word of caution about drawing such a conclusion. The same entrepreneurship literature reported VCs have a tendency to overstate the value of their influence and contributions to the success of VFSCs.

While the percentages of successful firms (Super-successes & Successes), which had a succession event, differed markedly from the percentage of firms, which failed and had a succession event (Failures), firms, which had yet to have their fate decided; namely Projected Successes and Living Dead, had comparable (56% versus 54%) percentages of succession events.

Firm outcome distributions as a function of experiencing or not experiencing a succession event. One of the relationships this study sought to analyze was whether or not the distribution of firm outcome counts for firms, (Super-successes, Successes, ...Failures) which experienced a succession event, was statistically significantly different from the expected distribution of firm outcome counts for the survey sample. A one-sample Chi Square Test was used to test for differences between the two sets of counts. 37 respondents attempted to take the survey instrument. Of the 37, 34 provided a response to question 9. (Refer to Appendix O for the text of question 9.) The null hypothesis that was tested is presented in Table 4. For purposes of brevity the acronym HX, where 'H' refers to hypothesis and 'X' refers to a specific number, will be used to identify each of the null hypotheses being evaluated (throughout the study's text).

Table 4

Null Hypothesis Model for Testing the Influence of a Succession Event on Firm Outcome

Null Hypothesis Acronym	Null Hypothesis
H1	There was no difference between the observed distribution of firm outcome counts, which experienced a succession event, and the expected distribution of firm outcome counts.

The test results for the Chi Square Test are presented in Table 5. The sample size was 72 of which 43 had a succession event. Actual calculations are provided in Appendix V1.

Table 5

Chi Square Statistic for Influence of a Succession Event on Firm Outcome

Null Hypothesis	χ^2 Statistic	χ^2_c $\alpha = 0.05; df = 4$	Accept/ Reject - Ho
H1	2.25	9.49	Accept

Table 5 indicates a statistically significant difference did not exist between the observed distribution of firm outcome counts, which experienced a succession event, and the expected distribution of firm outcome counts at the 95% confidence level.

Vision-related Data & Analysis

The following information pertains to survey instrument questions 11, 12, 13, 14, & 15 (Appendix O). Research questions R2 – R23 and their respective null hypotheses H2 – H23 are also addressed.

The information reported in the previous section (*Respondent & Respondent Firm Data*.) of this study supported the entrepreneurship literature’s views and findings on

vision, and its significance in the management of entrepreneurial firms. That said the objective of this study was to provide novel insight and empirical data on the influence founders' visions have had on the outcomes of their respective VFSCs.

Percentage of firms with a vision. The starting point chosen to analyze the importance of vision on VFSC firm outcomes was to estimate the proportion of VFSC firms that had a vision. A Large Sample z-Test (Mendenhall et al., 2006c) was utilized to determine if the survey sample proportion (of firms which had a vision) was statistically different from an estimated population proportion. The survey sample size was 77. No data was reported on 32 of 109 firms. The null hypothesis for the z-Test is presented in Table 6.

Table 6

Null Hypothesis Model for Testing for Proportion of Firms with a Vision

Null Hypothesis Acronym	Null Hypothesis
H2	There was no difference between the survey sample proportion of firms that had a vision and the estimated proportion of firms that had a vision.

Table 7 presents the results of the z-Test. Actual calculations can be found in Appendix V2. Assuming the proportion of all firms that have had a vision was 0.93, the z-Test indicated the chances of 100% of the firms in the survey sample reporting they had a vision was less than 1 in 100. 0.93 was selected as the *expected value* because it enabled the sampling distribution to conform to the normality requirements of the Large Sample z-Test.

Table 7

z-Test Results for Estimating Proportion of Firms with a Vision

Null Hypothesis	Statistic	Calculated Value	Critical Value $\alpha/2 = 0.025$	Accept/Reject - H_0
H2	<i>z</i>	2.407	± 1.96	Reject

Based on these test results, I concluded a very high proportion (> 0.93 , p -value = 0.008) of VFSC firms had a vision, although the clarity of the vision of individual firms varied from ‘very clear’ to ‘very unclear’.

Vision articulated in writing. Figure 6 shows the number of firms reported to have had a vision that was articulated in writing as a function of firm outcome.

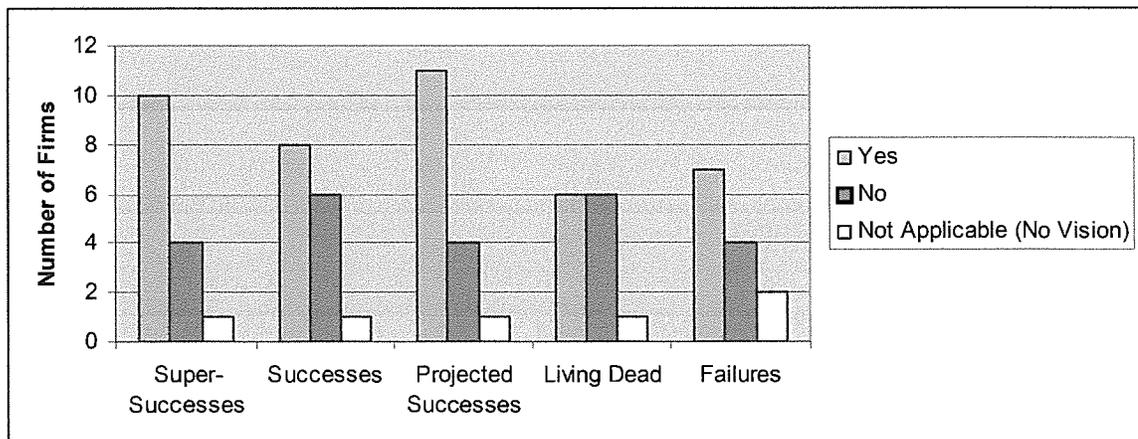


Figure 6. Number of firms with vision articulated in writing.

A *Yes* implies the respondent’s firm had a vision articulated in writing, and a *No* implies the respondent’s firm did not have a vision articulated in writing. Super-successes (66.7%) and Projected Successes (68.8%) had the highest percentages of firms that had a written vision followed to a lesser extent by Successes (53.3%). Living Dead firms were

reported to be equi-likely to have had a written vision or a vision that was not articulated in writing. Failures (53.8%) were reported to have had a percentage of firms with a vision articulated in writing comparable to the percentage of Successes (which had a vision articulated in writing). The number of respondents to this question was 72, and the percentage of respondents who reported firms with visions articulated in writing was 58.3%. No data was reported on 37 of 109 firms because 15 respondents did not complete the survey.

The primary research questions (number 1 below) and the remaining contextual or secondary research questions of this study (numbers 2-5 below) will now be addressed. The survey sample data set was used as the basis for analyzing the following five relationships:

1. Firm outcome as a function of the degree to which the founder's vision was sustained, changed, or disregarded (during the pre-IPO period).
2. Firm outcome as a function of the degree to which the founder's vision was valued by VFSC (Board of) Directors.
3. Firm outcome as a function of the degree of vision clarity.
4. Firm outcome as a function of degree of vision conformity (with the definition provided in the solicitation package).
5. Degree of vision change as a function of occurrence of a succession event.

The objective of the tests, used to analyze the survey sample data set, was to identify relationships that can be attributed to cause firm outcomes or vision change which could be characterized as statistically significant. (Please note the results presented in this section of the study do not include any results from the Non-response Bias Test survey.)

Vision change as a function of firm outcome. The analysis of the first relationship sought to determine if any of the five VFSC firm outcomes (Super-successes, Successes, ... Failures) were influenced by any of the seven *vision state* classifications (Vision Changed Completely, Vision Disregarded Completely,... Vision Sustained). Figure 7 shows a graph of firm outcome as a function of the degree to which firms' visions were sustained, changed or disregarded during the pre-IPO period, according to the survey respondents.

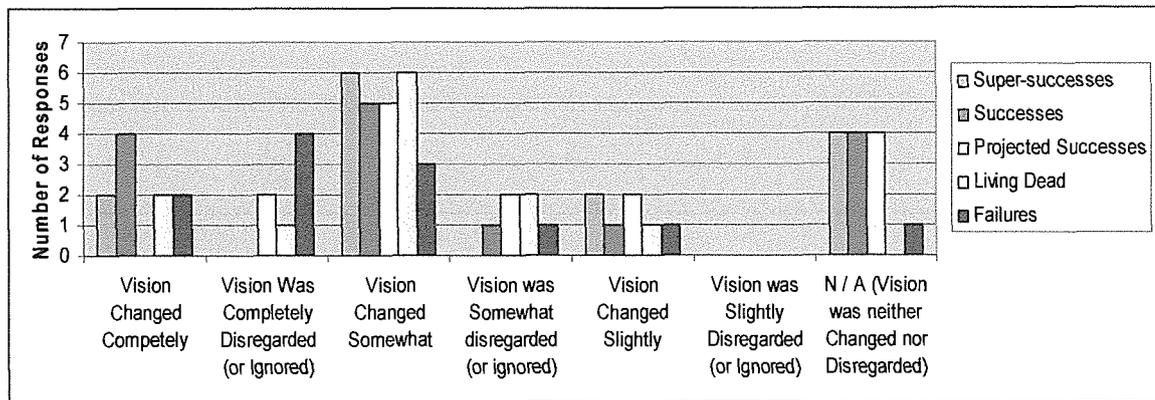


Figure 7. Degree of vision change or disregard.

Figure 7 shows survey respondents reported firm visions were either changed or disregarded during their respective pre-IPO periods 80.9% of the time. The total number of survey responses was 68. No data was reported on 41 of 109 firms because 15 respondents did not complete the survey, and respondents, who did complete the survey, failed to provide data on four firms for which they provided data for other survey questions.

Of the 55 firms that were reported to have had their visions changed or disregarded, 42 (76.4%) were reported to have had ‘completely changed’, ‘somewhat

changed', or 'slightly changed' visions. Seven firms 'completely disregarded or ignored' their visions during the pre-IPO period, and six firms 'somewhat disregarded' their visions. The largest number of responses (25) fell into the 'vision changed somewhat' classification. It is interesting to note respondents reported no Living Dead firms had sustained their visions, and no Super-successes or Successes 'completely disregarded or ignored' their visions.

An analysis using Binomial Tests (Langley, 1968) was carried out to look for differences between the distributions of observed change-related vision classification counts as a function of firm outcome (obtained via survey) and the distribution of expected change-related vision classification counts (derived from the survey sample). The Binomial Test was used because the number of counts in the expected cells of the Chi Square contingency table did not meet the minimum requirement for five even after the pooling of counts. The Binomial Test is the recommended test for evaluating a binomial distribution with one classification with a contingency table cell count of less than 5 (Langley, 1968). Accordingly, 'vision changed completely', 'vision disregarded completely', 'vision changed somewhat', and 'vision disregarded somewhat' were pooled together to form one classification, and 'vision sustained', 'vision changed slightly', and 'vision disregarded slightly' were pooled together to form a second classification. The survey sample size was 68. The null hypotheses, which were tested, are presented in Table 8.

Table 8

Null Hypotheses Models for Testing for Differences between Observed and Expected Distributions of Vision Change-related Classification Counts Using Binomial Tests

Null Hypothesis Acronyms	Null Hypotheses
H3 – H7	There was no difference between the distributions of observed change-related vision classification counts as a function of firm outcome and the expected distribution of change-related vision classification counts.

The results of the Binomial Tests are presented in Table 9.

Table 9

Binomial Test Statistics for Vision Change-related Classifications

	Firm Outcome	Observed (x)	Expected Prob. (Px)	Expected Number	Sample Size (n)	Critical Probability	Accept/Reject - Ho
H3	Super-Successes	6	0.30	4.12	14	9 @ 5%	Accept
H4	Successes	5	0.30	4.41	15	7 @ 5%	Accept
H5	Projected Successes	6	0.30	4.41	15	9 @ 5%	Accept
H6	Living Dead	1	0.30	3.53	12	17 @ 5%	Accept
H7	Failures	2	0.30	3.53	12	22 @ 5%	Accept

Table 9 provides a list of null hypotheses, the categories of firm outcomes, the relevant Binomial Test statistics, and a corresponding accept-reject decision for each hypothesis.

Actual calculations are provided in Appendix V3.

Table 9 shows that in all cases the observed distributions of pooled change-related vision classification counts as a function of firm outcome (obtained via survey) were not statistically significantly different from the expected distribution of pooled change-related vision classification counts (derived from the survey sample) at the 95% confidence level.

The small number of counts in the expected contingency table cells provided the impetus for combining the survey and non-respondent samples, which increased the sample size used in the analysis; and hence, the veracity of the findings. The combined survey and non-respondent sample data set is analyzed in the *Combined Survey & Non-response Bias Test Results* section presented later in this chapter.

Vision value by BOD as a function of firm outcome. The second relationship (refer to page 117) this study sought to analyze was the degree to which the founder’s vision was valued by VFSC (Board) Directors. Figure 8 shows the distribution of the degree to which respondents valued the visions of the firms on which they reported as a function of firm outcome. The total number of responses was 72. No data was reported on 37 (of 109) firms.

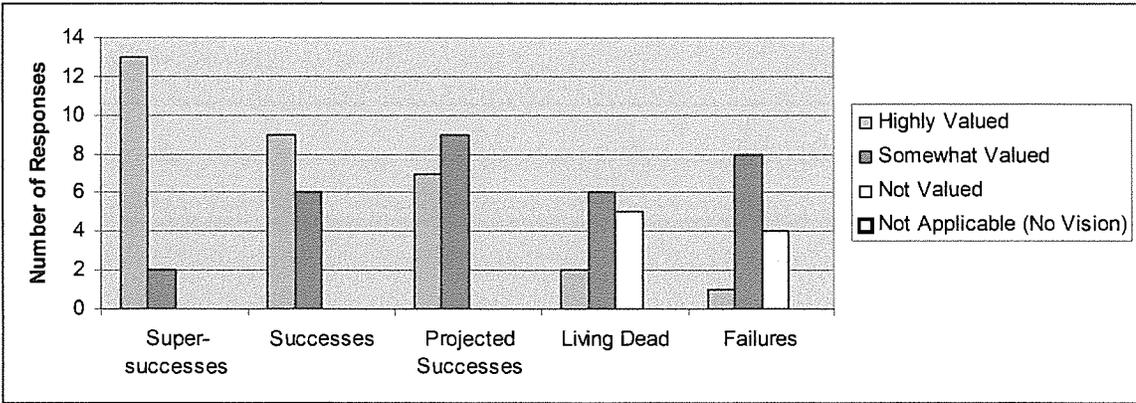


Figure 8. Degree to which vision was valued as a function of firm outcome.

A significant percentage of Super-successes, Successes and Projected Successes were reported to have had 'highly valued' or 'somewhat valued' visions by the survey respondents. 86.7% of the Super-successes had visions that were 'highly valued' by the respondents. The percentage dropped for Successes (60%) and dropped further again for Projected Successes (43.8%), but it was still substantial. Living Dead and Failure firms were reported to have had a more uniform spread of vision valuation counts ranging from a small number (2 & 1 respectively) of firms with 'highly valued' visions to a moderate number of firms with 'somewhat valued' visions (6 & 8 respectively) and visions that were 'not valued' (5 & 4 respectively).

An analysis, which employed Binomial Tests and Chi Square Tests, was carried out to look for differences between observed distributions of vision valuation counts as a function of firm outcome (obtained via survey) and the expected distribution of vision valuation counts (derived from the survey sample). A one-sample Chi Square Test (Emory, 1980) was used to confirm the results of the Binomial Test.

The small number of expected counts per vision value classification necessitated the pooling of classifications to meet the Binomial Test requirement for two classifications. 'Somewhat valued', 'not valued', and 'no vision' classifications were pooled together to form one classification. The second classification was composed of 'highly valued' vision counts. The sample size was 72. Table 10 presents the null hypotheses that were tested.

Table 10

Null Hypotheses Models for Testing for Differences between Observed and Expected Distributions of Vision Valuation Counts Using Binomial & Chi Square Tests

Null Hypothesis Acronyms	Null Hypotheses
H8 – H12	There was no difference between the observed distributions of vision valuation counts as a function of firm outcome and the expected distribution of vision valuation counts.

Table 11 provides a list of null hypotheses, firm outcomes, relevant Binomial Tests, and corresponding accept-reject decisions for each null hypothesis.

Table 11

Binomial Test Statistics for Firm Vision Valuations by Boards of Directors

	Firm Outcome	Observed (x)	Expected Prob. (Px)	Expected Number	Sample Size (n)	Critical Probability	Accept/Reject - Ho
H8	Super-Successes	13	0.44	6.67	15	18 @ 5%	Reject
H9	Successes	9	0.44	6.67	15	12 @ 5%	Accept
H10	Projected Successes	7	0.44	7.11	16	7 < 7.11 & x > 4; Cannot Use Binomial Test!	
H11	Living Dead	2	0.44	5.78	13	13 @ 5%	Reject
H12	Failures	1	0.44	5.78	13	9 @ 5%	Reject

Actual calculations are provided in Appendix V4. Table 11 shows that in the case of H9 (Successes), the observed distribution of vision valuation counts was not statistically significantly different from the expected distribution of vision valuation counts at the

95% confidence level. H8, H11, and H12 (Super-successes, Living Dead, & Failures respectively) were rejected. The distributions of vision valuation counts were determined to be statistically significantly different from the expected distribution of vision valuation counts at a confidence level of 95%. H10 (Projected Successes) could not be tested using the Binomial Test because the expected contingency table cell count did not comply with the requirements for using the Binomial Test (Langley, 1968).

Table 12 shows the results of the analysis of the degree to which Boards of Directors valued firm visions using one-sample Chi Square Tests. The same pooling of classifications used in the Binomial Tests was used for the Chi Square Tests. Actual calculations are provided in Appendix V4.

Table 12

Chi Square Test Statistics for Firm Vision Valuations by Boards of Directors

	Firm Outcome	χ^2 Statistic	χ^2_c $\alpha = 0.05; df = 1$	Accept/ Reject - Ho
H8	Super-Successes	10.83	3.84	Reject
H9	Successes	1.47	3.84	Accept
H10	Projected Successes	0.003	3.84	Accept
H11	Living Dead	4.45	3.84	Reject
H12	Failures	7.11	3.84	Reject

Table 12 confirms the results of Table 11 and shows null hypothesis H10 should be accepted at the 95% confidence level. (Recall from Table 11, page 123, H10 could not be tested.) There was no statistically significant difference between the observed distribution

of vision valuation counts for Projected Successes and the expected distribution of vision valuation counts at the 95% confidence level.

Vision clarity as a function of firm outcome. The third relationship (refer to page 117) this study sought to analyze was the degree to which vision clarity influenced firm outcome. Refer to Appendix O for the wording of question 11. Figure 9 graphically displays the degree of vision clarity as a function of firm outcome. The survey sample size was 77. No data was reported on 32 of 109 firms.

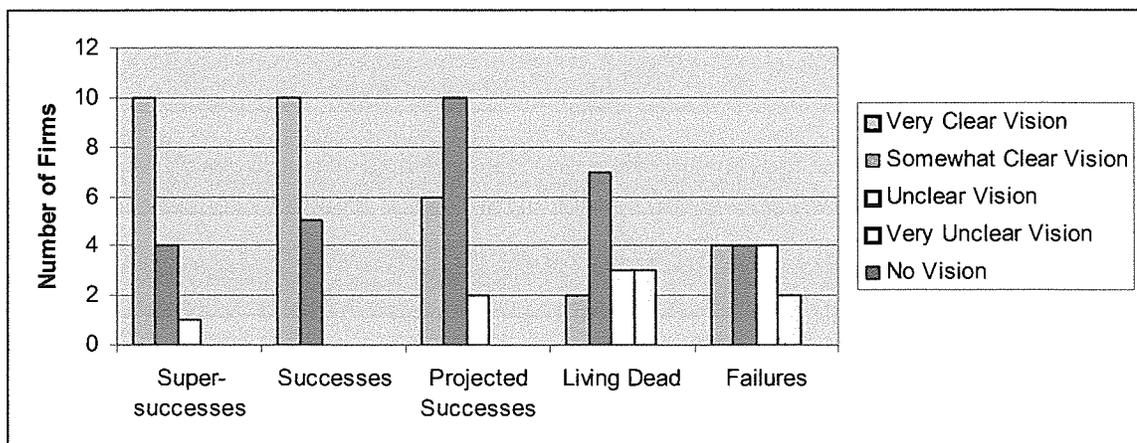


Figure 9. Vision clarity versus category of firm outcome.

Figure 9 indicates a large percentage (88+ %) of Super-successes, Successes, and Projected Successes had ‘very clear’ or ‘somewhat clear’ visions. Living Dead and Failure firms had more uniformly spread distributions of vision clarity although a significant number (46.7%) of Living Dead firms had a ‘somewhat clear’ vision. Table 13 shows the percentage of firms in each category as a function of degree of vision clarity.

Table 13

Percentage of Firm Outcomes as a Function of Vision Clarity

Firm Outcome	Degree of Vision Clarity			
	Very Clear	Somewhat Clear	Unclear	Very Unclear
Super-success	66.7% (10/15)	26.7% (4/15)	6.7% (1/15)	0.0%
Success	66.7% (10/15)	33.3% (5/15)	0.0%	0.0%
Projected Success	33.3% (6/18)	55.6% (10/18)	11.1% (2/18)	0.0%
Living Dead	13.3% (2/15)	46.7% (7/15)	20.0% (3/15)	20.0% (3/15)
Failures	28.6% (4/14)	28.6% (4/14)	28.6% (4/14)	14.3% (2/14)

19.5% (15/77) of firms were reported to have had an ‘unclear’ or ‘very unclear’ vision. 6.5% (5/77) of firms were reported to have had ‘very unclear’ visions, but zero firms were reported to have had ‘no vision’ although ‘no vision’ was a response option on the survey instrument.

An analysis using one-sample Chi Square Tests was conducted to look for a difference between the observed distributions of vision clarity counts as a function of firm outcome (obtained via survey) and the expected distribution of vision clarity counts (derived from the survey sample). For purposes of the analysis, classifications ‘somewhat clear vision’, ‘unclear vision’, and ‘very unclear vision’ were pooled to form one classification. Pooling was done to insure the minimum count in each Chi Square expected contingency table cell was five or greater. The null hypotheses that were tested are presented in Table 14.

Table 14

Null Hypotheses Models for Testing Influence of Vision Clarity on Firm Outcome

Null Hypothesis Acronyms	Null Hypotheses
H13-H17	There was no difference between the distributions of vision clarity counts as a function of firm outcome and the expected distribution of vision clarity counts.

Table 15 shows the results of the Chi Square Tests. Actual calculations are provided in Appendix V5.

Table 15

Chi Square Statistics for Influence of Vision Clarity on Firm Outcome

	Firm Outcome	χ^2 Statistic	χ^2_c $\alpha= 0.05; df= 1$	Accept/ Reject - Ho
H13	Super-successes	3.89	3.84	Reject
H14	Successes	3.89	3.84	Reject
H15	Projected Successes	0.50	3.84	Accept
H16	Living Dead	4.92	3.84	Reject
H17	Failures	0.97	3.84	Accept

Table 15 indicates a statistically significant difference did not exist between the observed distributions of vision clarity counts for Projected Successes and Failures and the expected distribution of vision clarity counts at the 95% confidence level. A statistically significant difference did exist between the observed distributions of vision clarity counts

for Super-successes, Successes, and Living Dead firms and the expected distribution of vision clarity counts at the 95% confidence level.

Vision conformity (with Solicitation Package Definition [Appendix I]) as a function of firm outcome. The fourth relationship (refer to page 117) this study analyzed was the degree to which vision conformity with the definition used in the survey email solicitation package (Appendix I) influenced firm outcome. Of the 37 respondents who attempted to take the survey, 22 provided a minimum of one response to question 14. (Refer to Appendix O for the text of question 14.) Figure 10 shows the survey sample vision conformity (to the email solicitation package definition) classification counts as a function of firm outcome. The survey sample size was 72. No data was reported on 37 (of 109) firms.

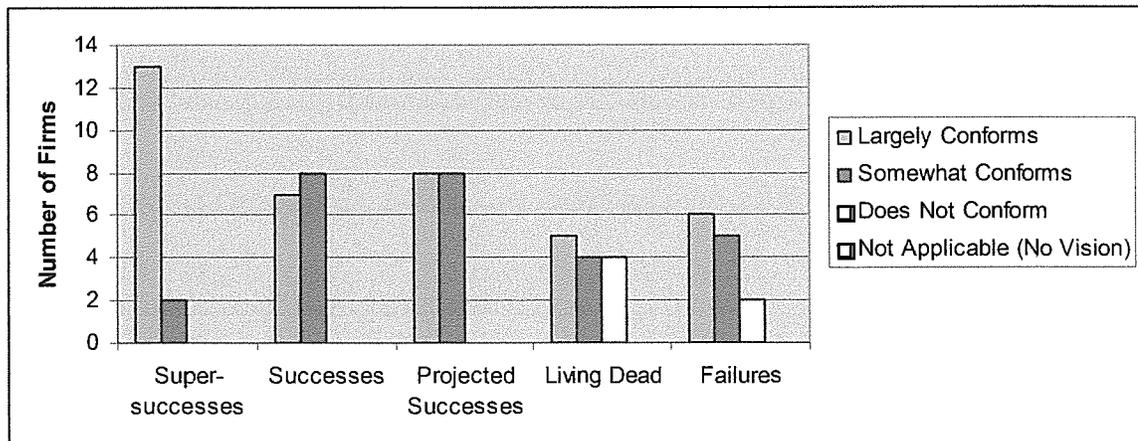


Figure 10. Degree of vision conformity with study's definition for vision.

Figure 10 shows respondents reported a high percentage (86.7%) of Super-successes had visions that 'largely conformed' to the definition provided in the email solicitation package. Respondents were equi-likely to report Successes and Projected Successes had

visions that ‘largely conformed’ or ‘somewhat conformed’ to the definition provided in the solicitation package. Living Dead and Failure firms had similar distributions of vision conformity (similar to Successes & Projected Successes), but they also reported several firms had visions which ‘did not conform’ to the definition of a vision provided in the email solicitation package. The distribution data suggested the definition of vision used in this study and the many similar definitions annotated in the literature were less than widely utilized by the VC industry in practice. 33 out of 72 (45.8%) firms had visions that ‘somewhat’ or ‘do not conform’ to the literature definition for a vision. ‘No vision’ is represented in Figure 10’s legend even though the classification recorded zero counts. The Non-response Bias Test, discussed later in this chapter, did record counts for this classification, so ‘no vision’ was included in the legend for Figure 10 for completeness reasons.

An analysis, using one-sample Chi Square Tests, was used to look for differences between the observed distributions of conformity classification counts as a function of firm outcome (obtained via survey) and the expected distribution of conformity classification counts (derived from the survey sample). The null hypotheses that were tested are presented in Table 16.

Table 16

Null Hypotheses Models for Testing Influence of Vision Conformity on Firm Outcome

Null Hypothesis Acronyms	Null Hypotheses
H18-H22	There was no difference between the distributions of vision conformity classification counts as a function of firm outcome and the expected distribution of vision conformity classification counts.

Conformity classifications ‘somewhat conformed’ and ‘does not conform’ were pooled to insure the minimum count in each Chi Square expected contingency table cell was five or greater. Table 17 shows the results of the Chi Square Tests. Actual calculations are provided in Appendix V6.

Table 17

Chi Square Statistics for Influence of Vision Conformity on Firm Outcome

	Firm Outcome	χ^2 Statistic	χ^2_c $\alpha= 0.05; df= 1$	Accept/ Reject - Ho
H18	Super-successes	6.38	3.84	Reject
H19	Successes	0.34	3.84	Accept
H20	Projected Successes	0.11	3.84	Accept
H21	Living Dead	1.29	3.84	Accept
H22	Failures	0.34	3.84	Accept

Table 17 indicates a statistically significant difference did not exist between the observed distributions of vision conformity classification counts (as defined in the email solicitation package) for Successes, Projected Successes, Living Dead, and Failures and the expected distribution of vision conformity classification counts at the 95% confidence level. A statistically significant difference did exist between the observed distribution of vision conformity classification counts for Super-successes and the expected distribution of vision conformity classification counts at the 95% confidence level.

Vision change as a function of succession events. The fifth relationship (refer to page 117) this survey sought to analyze was how a succession event influenced the degree to which firms’ visions were sustained, changed, or disregarded. An analysis

using a one-sample Chi Square Test was performed to determine if the occurrence of a succession event had a statistically significant influence on the distribution of vision change-related classifications (e.g. ‘Vision changed completely’, ‘vision disregarded completely’, ... ‘vision sustained’). The survey sample size was 68. No data was reported on 41 (of 109) firms. The null hypothesis that was tested is presented in Table 18.

Table 18

Null Hypothesis Model for Testing the Influence of a Succession Event on Vision Change-related Classifications

Null Hypothesis Acronym	Null Hypothesis
H23	There was no difference between the observed distribution of change-related vision classification counts in firms, which experienced a succession event, and the expected distribution of vision change-related classification counts in all survey sample firms.

Table 19 shows the Chi Square Statistic resulting from the test to determine if a statistically significant difference existed between the distribution of change-related vision classifications for firms, which had a succession event, and the expected distribution of change-related vision classifications for all survey firms. Vision classifications, vision ‘changed somewhat’ and vision ‘disregarded somewhat’, were pooled together to form one new classification, and vision classifications, vision ‘changed slightly’ and vision ‘disregarded slightly’, were pooled together to form a second classification. The pooling was done to insure the minimum Chi Square expected contingency table cell count was five or greater. Vision classifications, vision ‘changed completely’, vision ‘disregarded completely’, and vision ‘sustained’ were not pooled as

their contingency table cell counts met the Chi Square Test requirement of 5 or greater in number. Appendix V7 shows the calculations of the Chi Square Statistic.

Table 19

Chi Square Test: Influence of Succession Events on Distribution of Vision Classifications

	χ^2 Statistic	χ^2_c $\alpha = 0.05; df = 4$	Accept/ Reject - Ho
H13	0.979	9.49	Accept

The results of Table 19 show there was no statistically significant difference between the distribution of change-related vision classification counts for firms, which experienced a succession event, and the expected distribution of change-related vision classification counts for all survey firms at the 95% confidence level.

Industry Success/Failure Rates & Percentages of Pre-IPO Firm Outcomes

Super-successes, successes, & failures. Question 16 of the survey instrument (Refer to Appendix O) was designed to study current Success/Failure rates of VFSCs whose fate had been decided. Question 16 addressed research question R24. The survey results have been reproduced in Table 20.

Table 20

Percentage of VFSC Super-successes, Successes, & Failures

Firm	Super-successes	Successes	Failures
1	5	65	30
2	10	60	30

(table continues)

Firm	Super-successes	Successes	Failures
3	10	20	70
4	20	40	40
5	10	40	50
6	20	60	20
7	10	75	15
8	20	30	50
9	5	55	40
10	1	29	70
11	2	3	95
12	10	40	50
13	20	40	40
14	2	18	80
Sample Size (<i>n</i>)	14	14	14
Mean	10.357	41.071	48.571
<i>SD</i>	7.110	20.254	23.074

It must be noted the sample of 14 respondents was culled from an initial sample size of 22 respondents because the results provided by eight respondents did not comply with the guidelines for answering the question provided with the survey instrument. Guidelines for answering the question were provided in the text of question 16 (Appendix O). Several

reasons may account for the need to cull the responses: (a) There were clearly some responses which had typographical errors. (b) There were responses which suggested the respondents did not fully understand the question. (c) Several respondents may not have known the answers to the question, and (d) it was conceivable the range of possible responses provided in the survey instrument did not include the complete set of responses the respondent would have preferred to have seen.

A Student's *t*-Test (Mendenhall et al., 2006a) was conducted on the Failure proportion mean to determine if the mean Failure rate (of VFSC firms) had changed from the value reported by (Cooper & Bruno, 1977). The null hypothesis that was tested is presented in Table 21.

Table 21

Null Hypothesis Model for Testing whether Failure Rate Had Changed

Null Hypothesis Acronym	Null Hypothesis
H24	There was no difference between the Failure proportion mean of the survey sample and the Failure proportion reported by (Cooper & Bruno, 1977).

The results of the Student's *t*-Test are presented in Table 22.

Table 22

Student's t-Test Results for Failure Proportion of Survey Sample

Null Hypothesis	Statistic	Calculated Value	Critical Value $\alpha/2 = 0.025, df = 13$	Accept/Reject - Ho
H24	<i>t</i>	2.993	± 2.160	Reject

Actual calculations are provided in Appendix V8. The failure rate was determined to have increased, and the *t*-Test indicates the change was statistically significant ($0.02 > p\text{-value} > 0.01$). The sampling mean of the survey failure rate was determined to lie between 38.0% and 58.8% with a 90% confidence level. A *Finite Population Correction Factor* (Emory, 1980) of 0.985, calculated to account for the finite population of 450 firms, was used in determining the confidence interval. Correspondingly, success rates were determined to have declined, and results of the *t*-Test indicated the decline was statistically significant ($0.02 > p\text{-value} > 0.01$).

Projected successes & living dead. Question 17 of the survey instrument (Refer to Appendix O.) was designed to study the current Projected Success and Living Dead proportions of VFSCs whose fate has not yet been decided. Question 17 addressed research question R25. The survey results have been reproduced in Table 23.

Table 23

Percentage of VFSC Projected Successes and Living Dead Firms

Firm	Projected Successes	Living Dead
1	70	30
2	90	10
3	20	80
4	20	80
5	50	50
6	70	30
7	100	0

(table continues)

Firm	Projected Successes	Living Dead
8	40	60
9	70	30
10	70	30
11	60	40
12	30	70
13	50	50
14	90	10
15	43	57
16	80	20
Sample Size (<i>n</i>)	16	16
Mean	59.563	40.438
<i>SD</i>	24.747	24.747

It must be noted the sample of 16 respondents was culled from an initial sample size of 22 respondents because the results provided by six respondents did not comply with the guidelines for answering the question provided with the survey instrument. Guidelines for answering the question were provided at the beginning of question 17 of the survey instrument (Appendix O). The same reasons for culling the responses for Super-successes, Successes, and Failures apply to the firms whose fate had not been decided.

A Student's *t*-Test was conducted on the Projected Success proportion mean to determine if the proportion mean of Projected Successes had changed from the value reported by (Ruhnka et al., 1992). The null hypothesis that was tested is presented in Table 24.

Table 24

Null Hypothesis Model for Testing whether or not Projected Success Proportion Had Changed

Null Hypothesis Acronym	Null Hypothesis
H25	There was no difference between the proportion mean of Projected Successes, calculated from the results of the survey sample, and the proportion of Projected Successes reported by (Ruhnka et al., 1992).

The results of the Student's *t*-Test are presented in Table 25. Actual calculations are provided in Appendix V8.

Table 25

Student's t-Test Results for Projected Success Proportion of Survey Sample

Null Hypothesis	Statistic	Calculated Value	Critical Value $\alpha/2 = 0.025, df = 15$	Accept/Reject - Ho
H25	<i>t</i>	0.705	± 2.131	Accept

The Projected Success proportion mean was determined to not be statistically significantly different from the value reported by Ruhnka et al. (1992) at the 95% confidence level. Correspondingly, the proportion mean of Living Dead firms was

determined to not be statistically significantly different from the value reported by Ruhnka et al. at the 95% confidence level.

Miscellaneous Confidentiality & Study Related Questions

The last three questions of the survey instrument (18, 19, & 20) requested information about the respondents' concerns about confidentiality; desire to receive a summary copy of the survey results, and willingness to discuss the survey. The results from these questions are presented in Table 26.

Table 26

Confidentiality, Desire to Receive a Copy of Results, & Willingness to Discuss Survey

Question	Percentage	
	Yes	No
Do you consider your response confidential?	55%	45%
Would you like to receive a summary of results?	77%	23%
Are you willing to discuss the survey?	50%	50%

Non-response Bias Test Results

The non-respondent survey results have been segmented into five sections of results as shown below:

1. Qualification & Background Information
2. Non-respondent, Non-respondent Firm Data, & Comparisons with Survey Sample Data
3. Vision-related Data & Analysis
4. Industry Success/Failure Rates & Percentages of pre-IPO Firm Outcomes

5. Summary of Comparisons between Survey & Non-respondent Samples

Qualification & Background Information

37 out of 450 NVCA member firms responded to the survey solicitation e-mail. This represented a response rate of 8.2% which was in line with initial projections. However, the relatively low response rate begged the question: Is the population of non-respondents different to the sample of survey respondents?

To address this question, a Non-response Bias Test was conducted and the results are reported below: The following information pertains to questions 1, 2, 4, 6, 7, and 8 of the survey instrument (Appendix O). All 14 respondents provided their names, job titles, and the names of the venture firms with which they were affiliated. They confirmed they were reporting on VFSCs, and they were or had been board members of the firms on which they were reporting. The 14 responses came from a pool of over 300 members selected pseudo-randomly from the population of 413 non-respondent NVCA member firms.

Non-respondent, Non-respondent Firm Data, & Comparisons with Survey Data

The following information pertains to survey instrument questions 3, 5, 9, & 10. Research questions R1 and R26 and their corresponding null hypotheses H1 and H26 are also addressed.

Years of experience. The range of experience of the non-respondent sample is shown in Figure 11. Figure 11 also shows the percentage of respondents in each experience interval and each experience group's respective count.

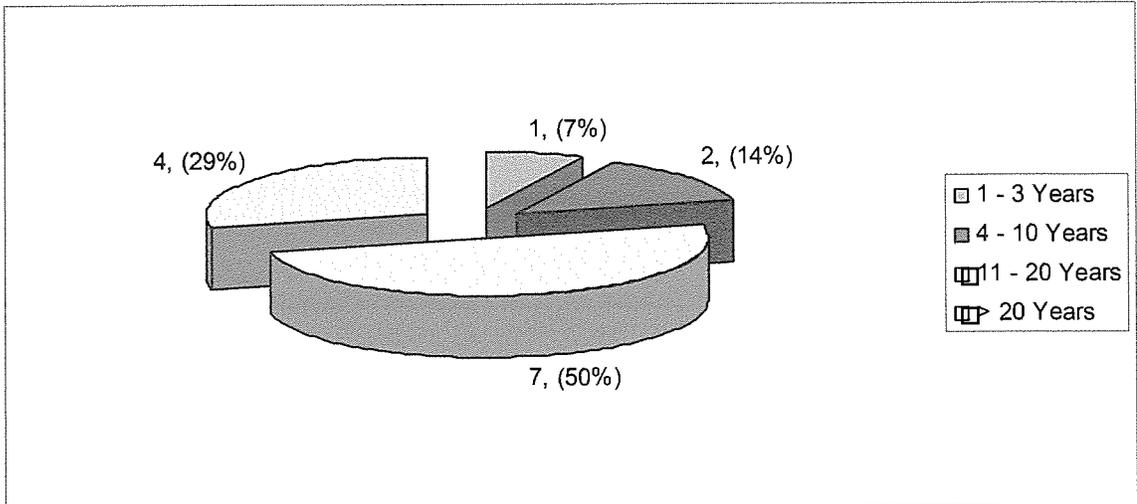


Figure 11. Years of experience of non-respondent sample.

Two tests of significance, a Student's *t*-Test and a Wilcoxon's Sum of Ranks Test (Langley, 1968) were performed to determine if the survey sample was statistically different from the non-respondent sample. The Student's *t*-Test was performed due to the small sample size of the non-respondent sample. If the shape of the two distributions had been more like the normal distribution, the Wilcoxon's Sum of Ranks Test would not have been performed. However, the survey sample showed a continuous build-up in frequency count as one progressed from 1-3 years of experience to greater than 20 years of experience. It was; therefore, decided a Wilcoxon Sum of Ranks Test should be performed to confirm the results of the Student's *t*-Test. The null hypotheses for the two tests are presented in Tables 27 and 28.

Table 27

Null Hypothesis Model for Testing for Differences between Survey & Non-respondent 'Years of Experience' Sample Means

Null Hypothesis Acronym	Null Hypothesis
H26	There was no difference between the coded mean interval of 'years of experience' for the survey sample and the coded mean interval of 'years of experience' for the non-respondent sample.

Table 28

Null Hypothesis Model for Testing for Differences between Survey & Non-respondent 'Years of Experience' Measurement Sets

Null Hypothesis Acronym	Null Hypothesis
H27	There was no difference between the 'years of experience' measurement set for the survey sample and the 'years of experience' measurement set for the non-respondent sample.

The results of the two tests are shown in Table 29.

Table 29

Test Results for the Difference in 'Years of Experience' Means for Survey and Non-respondent Samples & Survey and Non-respondent Sample Measurement Sets

Null Hypotheses	Statistic	Calculated Values	Critical Values $\alpha/2 = 0.025, df=49$	Accept/Reject - Ho
H26	<i>t</i>	0.595	± 1.960	Accept
H27	<i>z</i>	0.580	± 1.960	Accept

Actual calculations are presented in Appendix V9. The survey sample size was 37 and the non-respondent sample size was 14. The results in Table 29 indicate the two samples came from the same population at the 95% confidence level.

Strength of belief in the need for a vision. Figure 12 shows the distribution of the non-respondent sample's relative strength of belief in the need for a (founder's) vision.

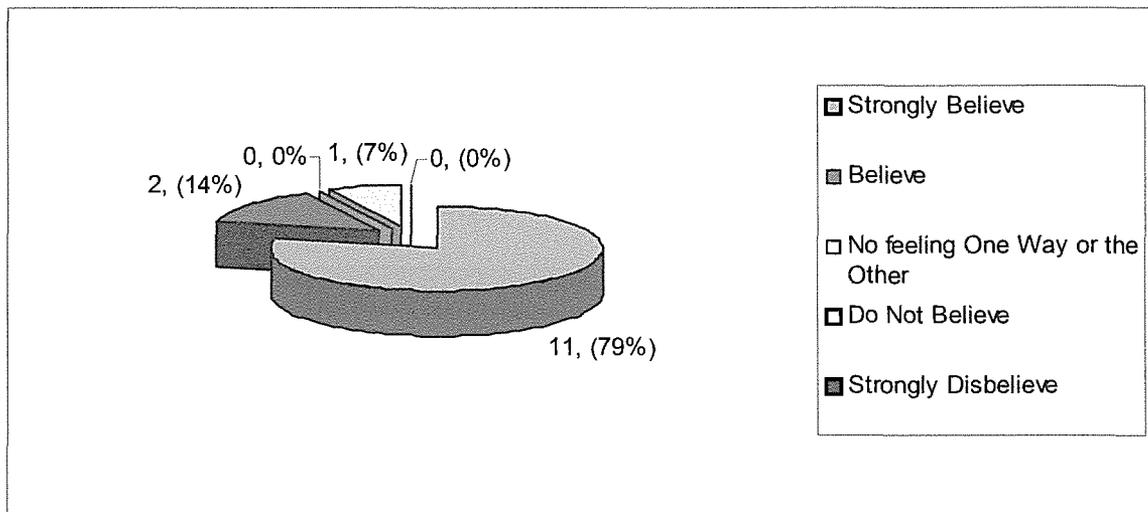


Figure 12. Non-respondent strength of 'belief in the need for a (founder's) vision.'

Two tests of significance, a Student's *t*-Test and a Wilcoxon's Sum of Ranks Test were performed to determine if the survey sample was statistically significantly different from the non-respondent sample. The Student's *t*-Test was performed due the small sample size of the non-respondent sample. If the shape of the two distributions had been more like the normal distribution, the Wilcoxon's Sum of Ranks Test would not have been performed. However, the survey sample and the non-respondent sample showed a continuous build-up in frequency count as one progressed from 'strongly disbelieve' coded as a 1, to 'strongly believe' coded as a 5. It was; therefore, felt a Wilcoxon Sum of

Ranks Test should be performed to confirm the results of the Student's *t*-Test. The null hypotheses for the two tests are presented in Tables 30 and 31.

Table 30

Null Hypothesis Model for Testing for Differences in Survey & Non-respondent 'Belief in the Need for a Vision' Mean Values

Null Hypothesis Acronym	Null Hypothesis
H28	There was no difference between the coded mean degree of 'belief in the need for a vision' value for the survey sample and the coded degree of 'belief in the need for a vision' value for the non-respondent sample.

Table 31

Null Hypothesis Model for Testing for Differences in Survey & Non-respondent 'Belief in the Need for a Vision' Measurement Sets

Null Hypothesis Acronym	Null Hypothesis
H29	There was no difference between the 'belief in the need for a vision' measurement set for the survey sample and the 'belief in the need for a vision' measurement set for the non-respondent sample.

The results of the two tests are shown in Table 32. Actual calculations are presented in Appendix V10. The survey sample size was 37 and the non-respondent sample size was 14. The results in Table 32 indicate the two samples came from the same population at the 95% confidence level.

Table 32

Test Results for the Difference in 'Belief in the Need for a Vision' Means for Survey and Non-respondent Samples & Survey and Non-respondent Sample Measurement Sets

Null Hypothesis	Statistic	Calculated Values	Critical Values $\alpha/2 = 0.025, df = 49$	Accept/ Reject - Ho
H28	<i>t</i>	0.229	± 1.960	Accept
H29	<i>z</i>	0.654	± 1.960	Accept

Distribution of firm outcomes. Figure 13 shows the non-respondent sample's distribution of firm outcomes. The non-respondent sample size was 36. The firm outcomes are presented as a percentage of the total number of firms in the non-respondent sample and the actual count for each firm outcome. A Large Sample *z*-Test was performed to determine if the coded survey sample mean was statistically significantly different from the coded non-respondent sample mean. Both sample frequency counts had assumed normally shaped distributions, so the normal approximation (to the *z*-Test) was deemed to be valid. The sample sizes were 36 for the non-respondent sample, and 109 for the survey sample. Coding was used to enable the calculation of mean values.

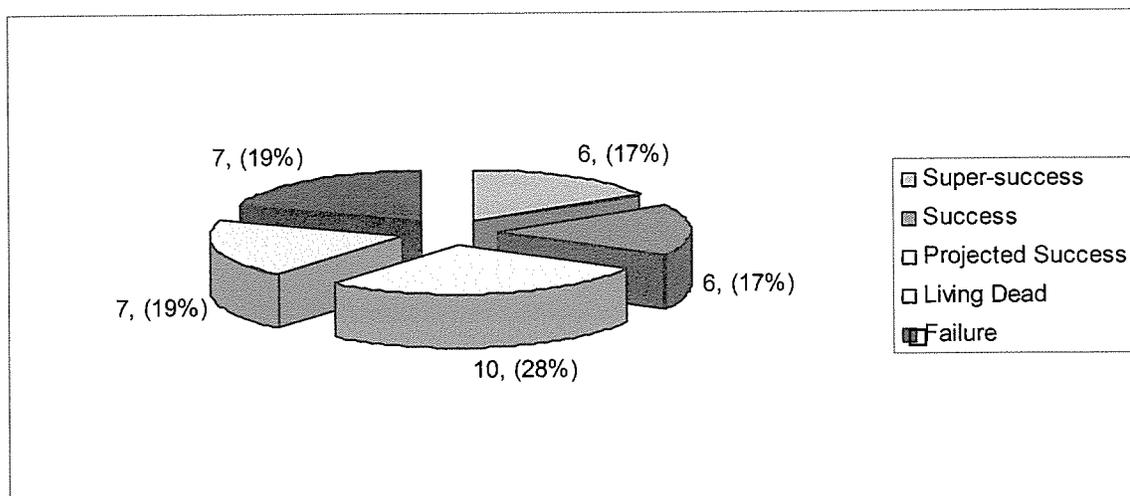


Figure 13. Non-respondent distribution of firm outcomes.

Table 33 shows the coding scheme used.

Table 33

Firm Outcome Coding Scheme

Firm Outcome	Coded As
Super-successes	5
Successes	4
Projected Successes	3
Living Dead	2
Failures	1

The null hypothesis for the Large Sample z-Test is presented in Table 34.

Table 34

Null Hypothesis Model for Testing for Differences in Survey & Non-respondent 'Firm Outcome' Mean Values

Null Hypothesis Acronym	Null Hypothesis
H30	There was no difference between the coded mean value for firm outcomes for the survey sample and the coded mean value for firm outcomes for the non-respondent sample.

The results of the test are shown in Table 35. Actual calculations are presented in Appendix V11.

Table 35

Test Results for the Difference in Coded Means for Survey and Non-respondent Samples

Null Hypothesis	Statistic	Calculated Value	Critical Value $\alpha/2 = 0.025$	Accept/ Reject - Ho
H30	<i>z</i>	0.213	± 1.96	Accept

The results in Table 35 indicate the two samples came from the same population at the 95% confidence level.

Percentage of respondents reporting a succession event. Figure 14 shows the percentages of the non-respondent sample that did and did not report a succession event. A *Yes* count implies a non-respondent sample participant did report a minimum of one succession event for the firms on which he or she reported, and a *No* implies a non-respondent sample participant did not report a succession event for any of the firms on which he or she reported. The sample counts are presented adjacent to their respective

percentages. The number of respondents in the non-respondent sample was 13, and the number of respondents in the survey sample was 34. One respondent out of 14, who started to take the survey, chose not to provide an answer to question 9 (Appendix O). Three of the 37 members of the survey sample did not complete the survey.

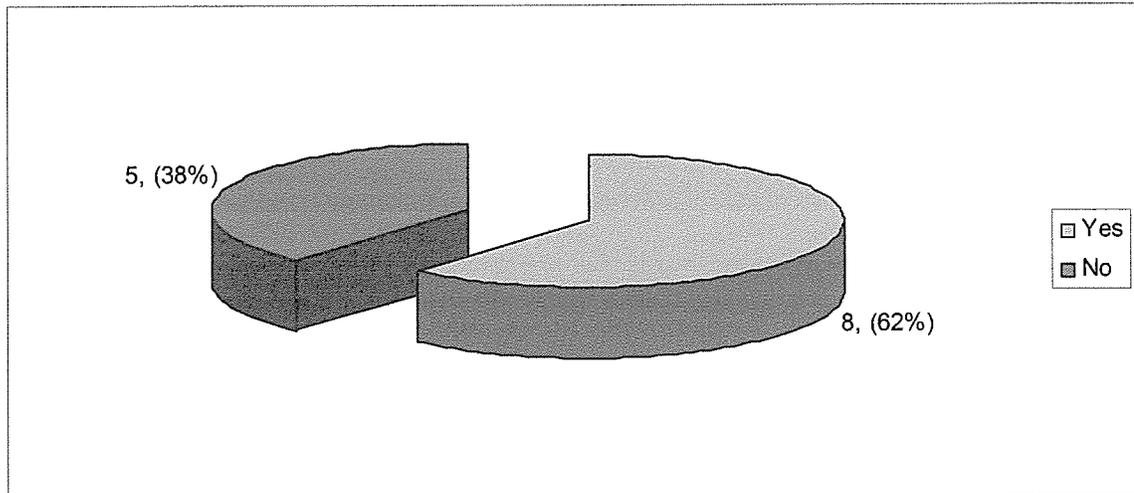


Figure 14. Percentage of non-respondent sample reporting a succession event.

A Fisher's Exact Test (Garson, 2008) was performed to determine if the proportion of the survey sample, which had a succession event, was statistically significantly different from the proportion of the non-respondent sample which had a succession event. A Fisher's Exact Test was used because the sample size for the non-respondent sample was judged to be too small and the variance and standard deviation of the population were not known. This made use of Large Sample z-Test on the proportions suspect. The null hypothesis for the Fisher's Exact Test is presented in Table 36.

Table 36

Null Hypothesis Model for Testing for a Difference between Survey & Non-respondent Sample Proportions of Respondents Reporting a Succession Event

Null Hypothesis Acronym	Null Hypothesis
H31	There was no difference between the proportion of survey sample respondents, reporting a succession event, and the proportion of non-respondent sample respondents reporting a succession event.

A Student's *t*-Test and a Large Sample *z*-Test were also performed to confirm the results of the Fisher's Exact Test. The null hypothesis for the *t*-Test and the Large Sample *z*-Test reads the same as the null hypothesis for the Fisher's Exact Test. The calculations used to determine the results of all three tests are presented in Appendix V12. A summary of the results of the three tests is presented in Table 37.

Table 37

Test Results for Determining if a Difference Exists between the Survey and Non-respondent Sample Proportions of Respondents Reporting a Succession Event

Null Hypothesis	Statistic	Calculated Values	Critical Values $\alpha, \alpha/2 = 0.05, 0.025$	Accept/Reject - Ho
H31	<i>P</i>	0.828	0.05	Accept
H31	<i>t</i>	0.728	± 1.96	Accept
H31	<i>z</i>	0.584	± 1.96	Accept

The results in Table 37 indicate the two samples came from the same population at the 95% confidence level.

Distribution of firms which experienced a succession event. Table 38 shows the distribution of non-respondent sample firms, which had succession events, as a function of firm outcome.

Table 38

Distribution of Succession Events as a Function of Firm Outcome

Firm Outcome	Number of Firms Reporting a Succession Event	Total Number of Firms	Percentage	Number of Firms with No Data
Super-success	3	6	50%	0
Success	0	6	0%	0
Projected Success	4	8	50%	2
Living Dead	5	7	71%	0
Failures	<u>2</u>	<u>7</u>	29%	<u>0</u>
Totals	14	34	41%	2

The distribution of non-respondent sample firms, which experienced a succession event, appeared to be different from the distribution of survey sample firms, which experienced a succession event, when viewed as a function firm outcome. This was particularly evident for the Success and Living Dead firm outcomes (0% versus 80% and 71% versus 54% respectively). The relatively small non-respondent sample size may have exaggerated the differences between the two sample outcomes. Refer to Table 3, (page 112) for the corresponding survey sample data set. To test for differences in the two sample proportions, a Large Sample z-Test was performed. The null hypothesis that was tested is presented in Table 39.

Table 39

Null Hypothesis Model for Testing for a Difference between Survey & Non-respondent Sample Proportions of Firms Reporting a Succession Event

Null Hypothesis Acronym	Null Hypothesis
H32	There was no difference between the proportion of survey sample firms reporting a succession event and the proportion of non-respondent sample firms reporting a succession event.

The results of the z-Test are presented in Table 40. Actual calculations are presented in Appendix V13. The survey sample size was 72 and the non-respondent sample size was 34. No data was reported on 2 of the 36 non-respondent sample firms and 37 of the 109 survey sample firms.

Table 40

Test Results for Determining if a Difference Exists between the Survey and Non-respondent Sample Proportions of Firms Reporting a Succession Event

Null Hypothesis	Statistic	Calculated Value	Critical Value $\alpha/2 = 0.05$	Accept/ Reject - Ho
H32	<i>z</i>	- 1.83	± 1.645	Reject

The results of Table 40 indicate a tendency towards a statistically significant difference existed between the survey and non-respondent sample proportions of firms reporting a succession event ($0.10 > p\text{-value} > 0.05$).

Vision-related Data & Analysis

The following information pertains to survey instrument questions 11, 12, 13, 14, & 15 (Appendix O). Research question R26 was also addressed.

Vision articulated in writing. Figure 15 shows the number of non-respondent firms reported to have had a vision that was articulated in writing as a function of firm outcome. The total number of responses was 33. Data for 3 out of the 36 non-respondent sample firms was not provided.

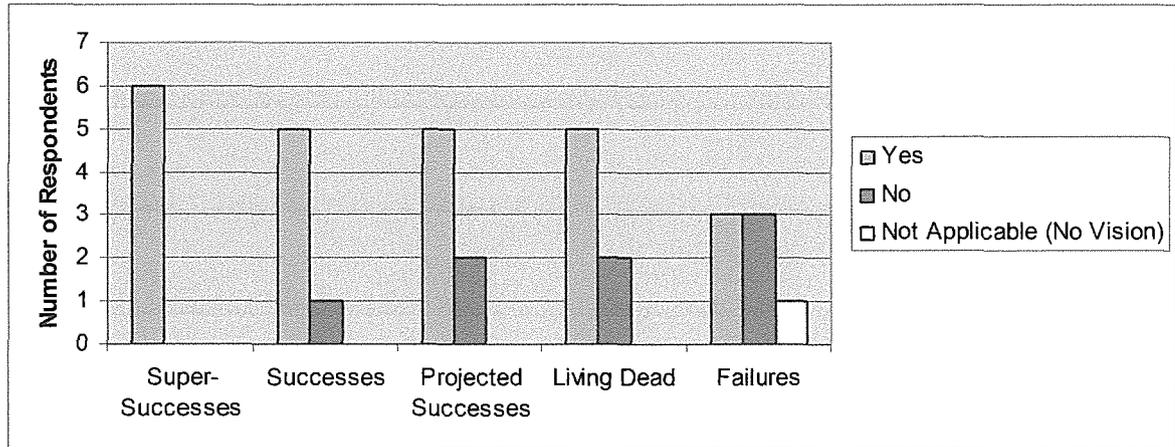


Figure 15. Non-respondent firms: Vision articulated in writing.

24 out of 33 (72.7%) non-respondent sample firms were reported to have articulated a vision in writing. This compares with 58.3% for the survey sample. Refer to Figure 8, (page 121). The survey sample size was 72. A Large Sample z-Test was conducted on the two proportions to determine if they were statistically significantly different. ‘No’ responses and ‘no vision’ responses were pooled to facilitate analysis of the proportions. The null hypothesis that was tested is presented in Table 41.

Table 41

Null Hypothesis Model for Testing for a Difference between Survey & Non-respondent Sample Proportions Which Have Articulated a Vision in Writing

Null Hypothesis Acronym	Null Hypothesis
H 35	There was no difference between the non-respondent sample proportion of firms, which articulated a vision in writing, and the survey sample proportion of firms, which articulated a vision in writing.

The results of the Chi Square Test are presented in Table 42. The calculations for the test are provided in Appendix V14.

Table 42

Test Results for Determining if a Difference Exists between the Survey and Non-respondent Sample Proportions of Firms Which Articulated a Vision in Writing

Null Hypothesis	Statistic	Calculated Value	Critical Value $\alpha/2 = 0.025$	Accept/Reject - Ho
H35	<i>z</i>	- 1.486	± 1.96	Accept

The results of the Large Sample *z*-Test indicate there was no statistically significant difference between the two sample proportions, which had articulated a vision in writing at the 95% confidence level.

Vision value by BOD as a function of firm outcome. Figure 16 shows the distribution of the degree to which the sample of non-respondents valued the visions of the firms on which they reported as a function of firm outcome. The total number of non-respondent responses was 34. Data for 2 out of the 36 non-respondent sample firms was not provided. The number of survey responses was 72 (out of 109).

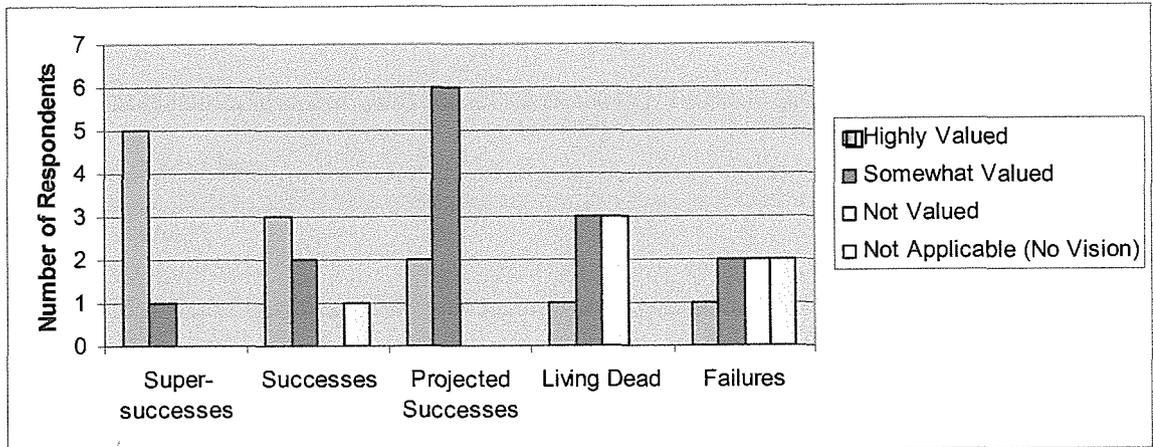


Figure 16. Degree to which vision was valued by non-respondents.

The distribution of degree to which non-respondents valued their firms' visions appears to be similar to the distribution of survey respondents with one notable exception. A small number of firms (3) were reported to have had 'no vision'; whereas, in the survey sample all firms were reported to have had a vision to some degree. In order to determine how the non-respondent data set compares with the survey data set, a two-sample Chi Square Test (Emory, 1980) was performed on the two distributions. The 'no vision' and 'not valued' cells in the contingency table were pooled to meet the Chi Square Test guideline for minimum number of counts in each expected contingency table cell. The null hypothesis that was tested is presented in Table 43.

Table 43

Null Hypothesis Model for Testing for a Difference between Survey & Non-respondent Sample Distributions of Vision Value Classification Counts

Null Hypothesis Acronym	Null Hypothesis
H34	There was no difference between the non-respondent sample distribution of vision value classification counts and the survey sample distribution of vision value classification counts.

The results of the Chi Square Test are presented in Table 44. The calculations for the test are provided in Appendix V15.

Table 44

Test Results for Determining if a Difference Exists between the Distributions of Survey and Non-respondent Sample Vision Value Classification Counts

Null Hypothesis	χ^2 Statistic	χ^2_c $\alpha = 0.05, df = 2$	Accept/ Reject - Ho
H34	2.237	5.991	Accept

The results of Table 44 indicate there was no statistically significant difference between the distributions of survey and non-respondent vision value classification counts at the 95% level of confidence.

Vision clarity as a function of firm outcome. Figure 17 graphically displays the degree of vision clarity as a function of firm outcome for the non-respondent sample.

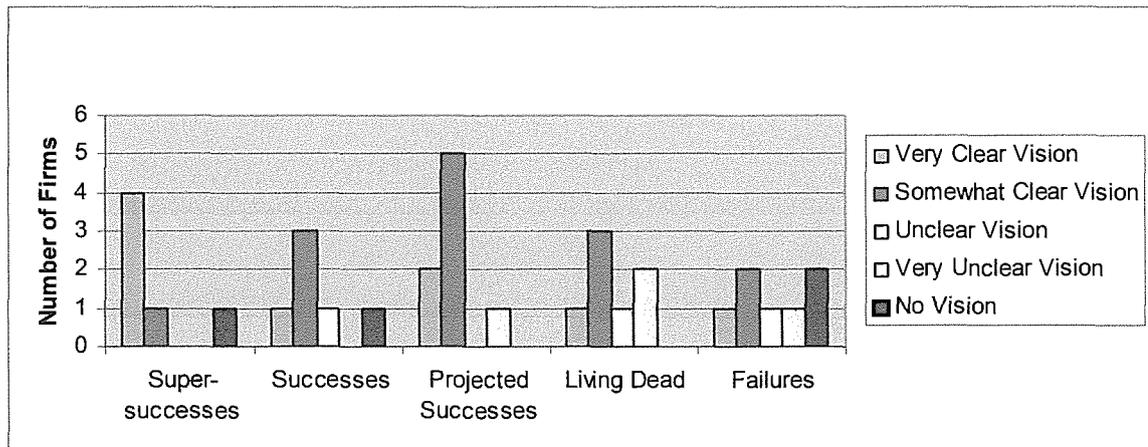


Figure 17. Non-respondent sample distribution of vision clarity versus firm outcome.

Figure 17 indicates a large percentage (80.0% or 16/20) of Super-successes, Successes, and Projected Successes had a ‘very clear’ or ‘somewhat clear’ vision. Living Dead and

Failure firms tended to have had a more uniform distribution of vision clarity. These results were comparable to the results observed for the survey sample. Refer to Figure 9, (page 125) for the survey sample results.

To establish whether or not a statistically significant difference existed between the two sample distribution counts, a two-sample Chi Square Test was performed. Compliance with Chi Square Test guidelines for minimum expected contingency table cell counts necessitated the pooling of the following classifications; ‘no vision’ counts, ‘very unclear vision’ counts, and ‘unclear vision’ counts. The survey sample size was 77, and the non-respondent sample size was 34. No data was reported on 2 of 36 non-respondent sample firms, and 32 of 109 survey sample firms. The null hypothesis that was tested is presented in Table 45.

Table 45

Null Hypothesis Model for Testing for a Difference between Survey & Non-respondent Sample Distributions of Vision Clarity Classification Counts

Null Hypothesis Acronym	Null Hypothesis
H33	There was no difference between the non-respondent sample distribution of vision clarity classification counts and the survey sample distribution of vision clarity classification counts.

The results of the Chi Square Test are presented in Table 46. Actual calculations are presented in Appendix V16. The results of Table 46 indicate there was no statistically significant difference between the distributions of survey and non-respondent vision clarity classification counts at the 95% level of confidence.

Table 46

Test Results for Determining if a Difference Exists between the Distributions of Survey and Non-respondent Sample Vision Clarity Classification Counts

Null Hypothesis	χ^2 Statistic	χ^2_c $\alpha = 0.05, df = 2$	Accept/ Reject - Ho
H33	3.151	5.991	Accept

Table 47 shows the percentage of non-respondent sample firms in each category of firm outcome as a function of vision clarity classification.

Table 47

Percentage of Non-respondent Firm Outcomes as a Function of Vision Clarity Classification

Firm Outcome	Degree of Vision Clarity				
	Very Clear	Somewhat Clear	Unclear	Very Unclear	No Vision
Super-success	66.7% (4/6)	16.7% (1/6)	0.0%	0.0%	16.7% (1/6)
Success	16.7% (1/6)	50.0% (3/6)	16.7% (1/6)	0.0%	16.7% (1/6)
Projected Success	25.0% (2/8)	62.5% (5/8)	0.0%	12.5% (1/8)	0.0%
Living Dead	14.3% (1/7)	42.9% (3/7)	14.3% (1/7)	28.6% (2/7)	0.0%
Failures	14.3% (1/7)	28.6% (2/7)	14.3% (1/7)	14.3% (1/7)	28.6% (2/7)

32.4% (11/34) of firms were reported to have had an 'unclear vision', 'very unclear vision', or 'no vision'. 23.5% (8/34) were reported to have had a 'very unclear' vision or 'no vision'.

Vision conformity as a function of firm outcome. Figure 18 shows the degree to which the non-respondent firms' visions conformed to the definition for a vision provided

in the survey email solicitation package (Appendix I). The non-respondent sample size was 33, and the survey sample size was 72. Data was not provided for 3 firms out of 36 non-respondent sample firms and 37 out of 109 survey sample firms. Figure 18 shows the non-respondent sample had a large percentage of firms with visions which conform ‘somewhat’ to the definition provided in the email solicitation package (Appendix I).

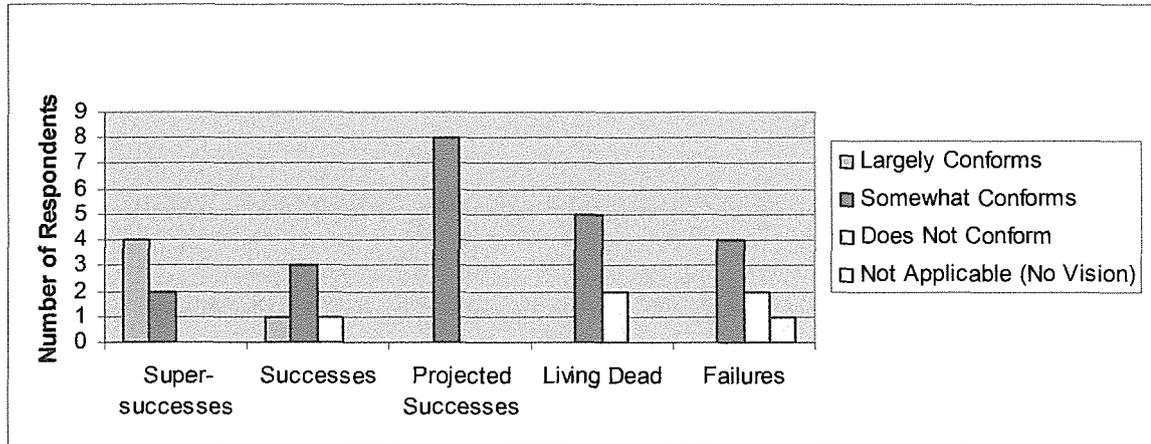


Figure 18. Non-respondent vision conformity with study definition for vision.

The large percentage of firms with visions classified as ‘somewhat conforms’ contrasts with the large percentage (54.2%) of firms with visions classified as ‘largely conforms’ in the survey population. Refer to Figure 10, (page 128). 22 out of 33 (66.7%) non-respondent sample firms were reported to have had a vision that ‘somewhat conforms’ to the definition used in this study. This compares with 27 out of 72 (37.5%) firms in the survey sample. 4 out of 6 (66.7%) of Super-success firms had a vision that ‘largely conforms’ to this study’s definition. This compares with 86.7% of super-successes in the survey sample. The same number of non-respondent sample firms as survey sample firms (6 versus 6 respectively) reported having ‘no vision’ or a vision that ‘does not conform’ to the study definition. To determine if the differences in the two samples (survey & non-

respondent) were statistically significant, a two-sample Chi Square Test was performed. ‘Somewhat conforms’, ‘does not conform’, and ‘no vision’ classifications were pooled to comply with Chi Square Test guidelines for the minimum expected number of contingency table cell counts to be five or greater. The null hypothesis that was tested is presented in Table 48.

Table 48

Null Hypothesis Model for Testing for a Difference between Survey & Non-respondent Sample Distributions of Vision Conformity Classification Counts

Null Hypothesis Acronym	Null Hypothesis
H36	There was no difference between the distribution of non-respondent vision conformity classification counts and the distribution of survey sample vision conformity classification counts.

The results of the Chi Square Test are presented in Table 49. The calculations are presented in Appendix V17.

Table 49

Test Results for Determining if a Difference Exists between the Survey and Non-respondent Sample Distributions of Vision Conformity Classification Counts

Null Hypothesis	χ^2 Statistic	χ^2_c $\alpha = 0.05, df = 2$	Accept/ Reject - Ho
H36	14.265	5.991	Reject

Results of the Chi Square Test indicate there was a highly significant difference between the survey sample and the non-respondent sample distributions of vision conformity classification counts (p -value < 0.005).

Vision change as a function of firm outcome. Figure 19 shows the degree to which non-respondent firms' visions were sustained, changed, or disregarded during the pre-IPO period. The total number of responses from the non-respondent sample was 32. Data for 4 non-respondent sample firms out of 36 was not reported. The survey sample size was 68 responses (out of 109).

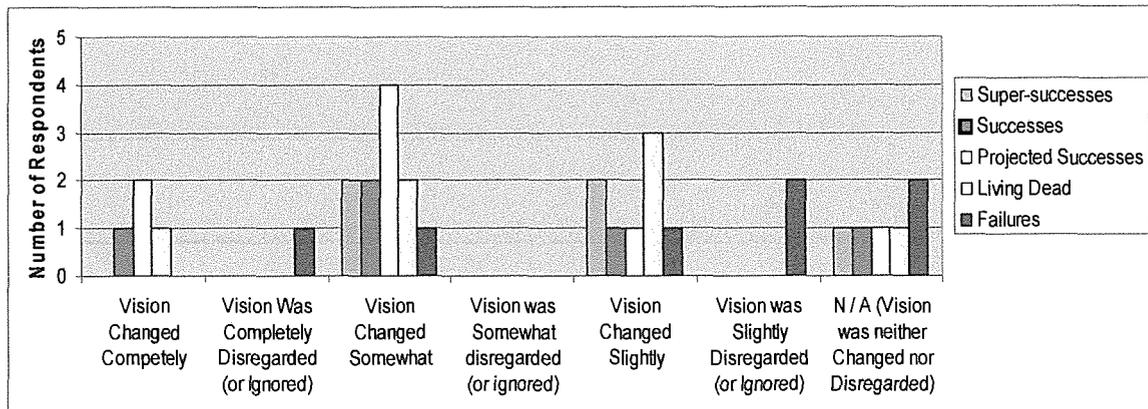


Figure 19. Non-respondents: Degree of vision change or disregard.

Figure 19 shows non-respondents reported 81.3% of firm visions were either changed or disregarded during their respective pre-IPO periods. This was very similar to the percentage of survey sample respondents who reported changed or disregarded firms' visions, 80.8%. Refer to Figure 7, (page 118). To determine if the non-respondent sample was statistically significantly different from the survey sample, a two-sample Chi Square Test was conducted. Contingency table cell counts for 'vision changed completely' and 'vision disregarded completely' were pooled, 'vision changed somewhat' and 'vision disregarded somewhat' were pooled, and 'vision changed slightly' and 'vision disregarded slightly' were pooled to comply with the Chi Square Test guideline that all expected contingency table cell counts be five or greater in number. 'Vision sustained'

was not pooled with any other vision change or disregard classification. The null hypothesis that was tested is presented in Table 50.

Table 50

Null Hypothesis Model for Testing for a Difference between Survey & Non-respondent Sample Distributions of Vision Change-related Classification Counts

Null Hypothesis Acronym	Null Hypothesis
H37	There was no difference between the non-respondent sample distribution of vision change-related classification counts and the survey sample distribution of vision change-related classification counts.

The results of the Chi Square Test are presented in Table 51. The calculations are presented in Appendix V18.

Table 51

Test Results for Determining if a Difference Existed between the Survey and Non-respondent Sample Distributions of Vision Change-related Classification Counts

Null Hypothesis	χ^2 Statistic	χ^2_c $\alpha = 0.05/0.10, df = 3$	Accept/ Reject - Ho
H37	7.143	7.815/6.251	Accept/Reject

Results of the Chi Square Test indicated there was a tendency toward a statistically significant difference in the two samples ($0.10 > p\text{-value} > 0.05$). Examination of the components of the Chi Square Statistic revealed the largest contribution by far to the Chi Square Statistic came from the differences in the counts for ‘slightly changed’ and ‘slightly disregarded’ visions. The non-respondent sample had many more counts of a

‘slightly changed’ or ‘slightly disregarded’ vision than would have been expected if one looked at the combined survey and non-respondent samples.

Industry Success/Failure Rates & Percentages of Pre-IPO Firm Outcomes

Survey instrument question 16 (Appendix O) was designed to study current Success/Failure rates of VFSCs whose fate has been decided. Question 16 addressed research question R24.

Super-successes, successes, & failures. Survey results for Success/Failure rates from the Non-response Bias Test were reviewed and culled for compliance with question 16 (Appendix O). 9 out of 14 responses were determined to be suitable for analysis. Guidelines for answering question 16 were provided in the text of the question. The survey sample size was 14. The non-respondent sample Success/Failure rate data for firms, whose fate had been decided, is presented in Table 52.

Table 52

Percentage of Super-successes, Successes, & Failures in the Non-respondent Sample

Firm	Super-successes	Successes	Failures
17	10	50	40
18	0	10	90
19	25	25	50
20	2	8	90
21	25	15	60
22	5	10	85

(table continues)

Firm	Super-successes	Successes	Failures
23	1	7	92
24	10	20	70
25	20	70	10
Sample size (<i>n</i>)	9	9	9
Mean	10.9%	23.9%	65.2%
<i>SD</i>	10.1%	21.9%	28.1%

A Student's *t*-Test was conducted to determine if a difference existed between the survey sample proportion mean and the non-respondent sample proportion mean for each firm outcome. The null hypotheses that were tested are presented in Table 53.

Table 53

Null Hypotheses Models for Testing for Differences between Survey & Non-respondent Sample Proportion Means for Super-successes, Successes, & Failures

Null Hypotheses Acronyms	Null Hypotheses
H38	There was no difference between the non-respondent sample proportion mean for Super-successes and the survey sample proportion mean for Super-successes.
H39	There was no difference between the non-respondent sample proportion mean for Successes and the survey sample proportion mean for Successes.
H40	There was no difference between the non-respondent sample proportion mean for Failures and the survey sample proportion mean for Failures.

The results of the Student's *t*-Test are presented in Table 54. Actual calculations are presented in Appendix V19.

Table 54

Student's t-Test Results for Survey Sample Proportion Means versus Non-respondent Sample Proportion Means (Super-successes, Successes, & Failures)

Null Hypothesis	Statistic	Calculated Values	Critical Values $\alpha/2 = 0.025/0.05, df = 21$	Accept/Reject - H_0
H38	<i>t</i>	- 0.149	± 2.080	Accept
H39	<i>t</i>	1.926	$\pm 2.080/1.721$	Accept/Reject
H40	<i>t</i>	- 1.553	± 2.080	Accept

The results from Table 54 indicate Super-successes from survey and non-respondent samples had proportion means that cannot be claimed to be statistically significantly different at the 95% level of confidence. Successes from survey and non-respondent samples had differences in proportion means that tended toward statistical significance ($0.10 > p\text{-value} > 0.05$). The proportion means could have been considered statistically significantly different at the 90% confidence level. Failures from survey and non-respondent samples had proportion means that could not be claimed to be statistically significantly different at the 95% confidence level.

A review of the response set in Table 52 revealed 4 of the 9 respondents in the non-respondent sample reported combined Super-success/Success rates of less than or equal to 20%. This appeared to be a pessimistic result compared with the remainder of the non-respondent sample and the original survey sample data set. The firms, which

provided the data that showed a low or pessimistic combined Super-success/Success rate, were researched (on their respective web-sites) to determine if they had an industry segment focus that might have explained their responses. In all four cases, the firms with pessimistic combined Super-success/Success rates indicated their investment strategy was broadly distributed throughout the High Tech industry. 3 out of the 4 firms were invested in Bio-Technology, which I theorized might have resulted in a lower combined Super-success/Success rate due to the very long harvest periods associated with that specific segment of the High Tech industry. In summary, the low Super-success/Success rate could not be attributed to a specific sector focus.

Projected successes & living dead. Survey instrument question 17 was designed to deal with the proportion means of Projected Successes and Living Dead firms; the firms whose fate had not been decided. Question 17 addressed research question R25.

Survey results from the Non-response Bias Test were reviewed and culled for compliance with question 17 (Appendix O). 8 out of 14 responses were determined to be suitable for analysis. Guidelines for answering question 17 were provided at the beginning of the text of the question (Appendix O). The survey sample size was 16. The Non-response Bias Test results are presented in Table 55.

Table 55

Percentage of Projected Successes & Living Dead Firms in the Non-Respondent Sample

Firm	Projected Successes	Living Dead
17	70	30
18	10	90

(table continues)

Firm	Projected Successes	Living Dead
19	75	25
21	75	25
22	35	65
23	10	90
24	10	90
25	90	10
Sample size (<i>n</i>)	8	8
Mean	46.9%	53.1%
<i>SD</i>	34.2%	34.2%

A Student's *t*-Test was conducted to determine if a statistically significant difference existed between the survey sample proportion means of Projected Success and Living Dead firms and the non-respondent sample proportion means of Projected Success and Living Dead firms. The null hypotheses that were tested are presented in Table 56.

Table 56

Null Hypotheses Models for Testing for Differences between Survey & Non-respondent Sample Proportion Means for Projected Successes & Living Dead

Null Hypotheses Acronyms	Null Hypotheses
H41	There was no difference between the non-respondent sample proportion mean of Projected Successes and the survey sample proportion mean of Projected Successes.
H42	There was no difference between the non-respondent sample proportion mean of Living Dead firms and the survey sample proportion mean of Living Dead firms.

The results of the Student's *t*-Test are presented in Table 57. Actual calculations are presented in Appendix V19.

Table 57

Student's t-Test Results for Survey Sample Proportion Mean versus Non-respondent Sample Proportion Mean (Projected Successes & Living Dead)

Null Hypothesis	Statistic	Calculated Values	Critical Values $\alpha/2 = 0.025, df = 22$	Accept/Reject - H_0
H41	<i>t</i>	0.994	± 2.074	Accept
H42	<i>t</i>	- 0.994	± 2.074	Accept

The results from Table 57 indicate Projected Successes and Living Dead firms from survey and non-respondent samples have proportion means that cannot be claimed to be statistically significantly different at the 95% level of confidence.

Summary of Comparisons between Survey and Non-respondent Samples

Table 58 provides a summary of the Non-response Bias Test results:

Table 58

Summary on Non-response Bias Test Results

Survey Item	Non-response Bias Test Result
Years of Experience	No difference in Survey & Non-respondent Distributions
Strength of Belief in Need for a Vision	No difference in Survey & Non-respondent Distributions
Distribution of Firm Outcomes	No difference in Survey & Non-respondent Distributions
Distribution of Firm Outcomes That Had a Succession Event	<i>Tendency to Statistically Significant Difference Exists</i>
Proportion of Respondents Who Had a Succession Event	No difference in Survey & Non-respondent Proportions
Vision Clarity	No difference in Survey & Non-respondent Distributions
BOD Valued Vision	No difference in Survey & Non-respondent Distributions
Vision Articulated In Writing	No difference in Survey & Non-respondent Distributions
Vision Conformity to Literature Definition	<i>Highly Significant Difference Exists</i>
Vision Changed, Disregarded, or Sustained	<i>Tendency to Statistically Significant Difference Exists</i>
Percentage of Super-successes	No difference in Survey & Non-respondent Proportions
Percentage of Successes	<i>Tendency to Statistically Significant Difference Exists</i>

(table continues)

Survey Item	Non-response Bias Test Result
Percentage of Failures	No difference in Survey & Non-respondent Proportions
Percentage of Projected Successes	No difference in Survey & Non-respondent Proportions
Percentage of Living Dead	No difference in Survey & Non-respondent Proportion

The results of Table 58 show:

- 11 out of 15 (73.3%) statistical tests indicated no statistically significant difference between survey and non-respondent samples at the 95% confidence level.
- 3 out of 15 (20.0%) statistical tests indicated there was a tendency toward a statistically significance difference between the survey sample and the non-respondent sample.
- No (zero) statistical test indicated a statistically significant difference existed between the survey sample and the non-respondent sample.
- One statistical test out of 15 (6.7%) indicated there was a highly significant difference between the survey and non-respondent samples.

To summarize 14 out of 15 (93.3%) of the statistical tests performed on the survey and non-respondent samples indicated there was no statistically significant difference between the two samples at the 95% confidence level. Based on this result, I concluded the two samples were from the same population (of NVCA member firms),

and I decided to pool the two samples in order to obtain a larger, more representative sample of the NVCA membership.

Combined Survey & Non-response Bias Test Results

The Non-response Bias Test results indicated the survey sample and the non-respondent sample were comparable. Given the relatively small sample size of each, it made sense to combine the results into a larger sample to see if any additional insights could be mined from the combined data set. The total number of respondents who attempted to take the combined survey was 51. 33 respondents (64.7%) completed the survey.

The combined survey and non-respondent sample results have been segmented into five sections as shown below:

1. Combined Qualification & Background Information
2. Combined Respondent & Respondent Firm Data
3. Combined Vision-related Data & Analysis
4. Industry Success/Failure Rates & Percentages of pre-IPO Firm Outcomes
5. Chapter 4 Summary

Combined Qualification & Background Information

The following information pertains to questions 1, 2, 4, 6, 7, and 8 of the survey instrument (Appendix O). All 51 respondents provided their names and job titles. 50 out of 51 respondents provided the names of the venture firms with which they were affiliated. One respondent was a retired executive, who may or may not have been peripherally involved with an NVCA member firm at the time of this study. The respondent did not disclose the name of the firm with which he may or may not have

been associated. All 51 respondents confirmed they were reporting on VFSCs, and they are or have been board members of the firms on which they were reporting.

Combined Respondent & Respondent Firm Data

The following information pertains to survey instrument questions 3, 5, 9, & 10 (Appendix O). Research question R1 is also addressed.

Years of experience. Figure 20 shows the years of experience for the combined samples by count and percentage of the total number of responses. The total count for the combined samples was 51.

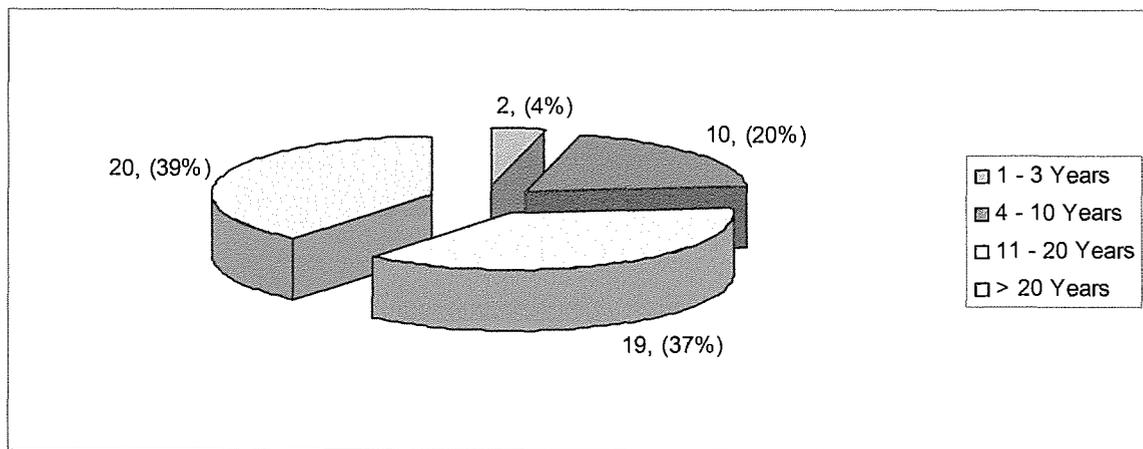


Figure 20. Years of experience of combined survey & non-respondent sample.

Figure 20 indicates 39 out of 51 total respondents (76.5%) had 11 years or greater experience in the VC industry and 49 out of 51 (96.1%) had 4 years or greater experience. These results compare very favorably with the results of the survey and the Non-response Bias Test results. Refer to Figures 2 and 11, (pages 109 and 140).

Strength of belief in the need for a vision. The combined distribution of degree to which respondents believed in the need for a vision is displayed in Figure 21.

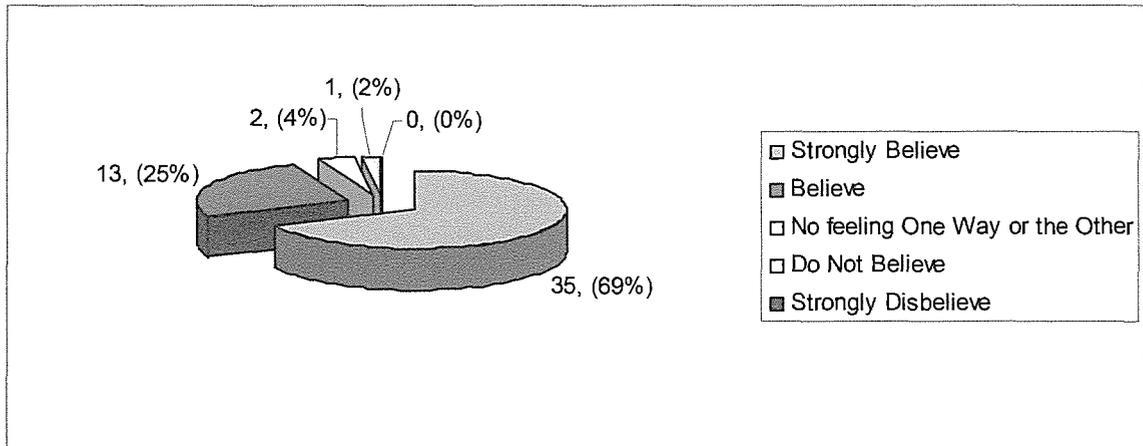


Figure 21. Strength of respondents' belief in the need for a vision.

Figure 21 shows 68.6% (35 of 51) 'strongly believe' in the need for a vision, and 94.1% (48 of 51) of respondents either 'believe' or 'strongly believe' in the need for a vision.

These results were consistent with the results from the survey and non-respondent samples. Refer to Figures 3 and 12, (pages 110 & 142) for a comparison with the survey and non-respondent samples respectively.

Distribution of firm outcomes. Figure 22 shows the distribution of firm outcomes for the combined survey and non-respondent samples. The response count is presented adjacent to its respective percentage of the total number of firms. The total number of firm responses was 145. For a comparison with survey and non-respondent samples, refer to Figures 4 and 13 respectively, (pages 111 & 145).

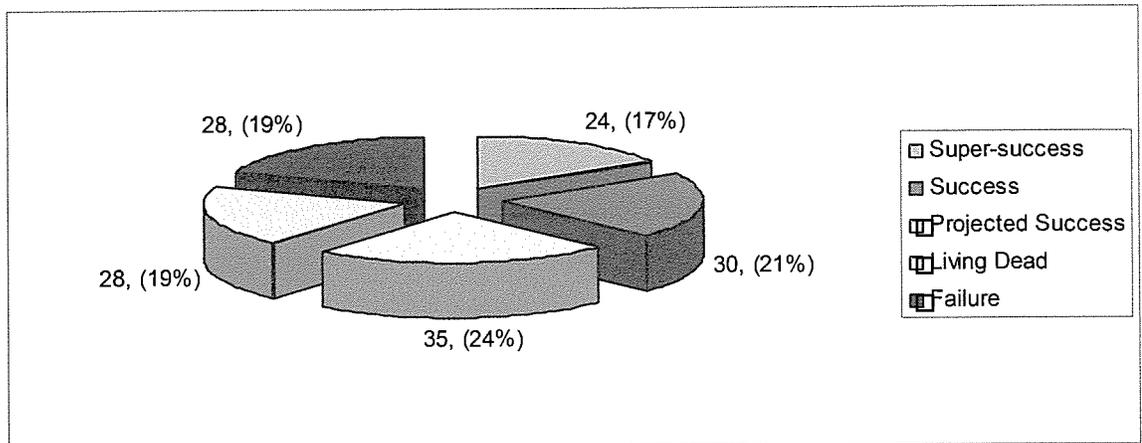


Figure 22. Combined sample distribution of firm outcomes.

Percentage of respondents reporting a succession event. Figure 23 shows the percentage of respondents who reported at least one of the firms on which they reported had a succession event. The total number of respondents was 47. 4 (out of 51) respondents did not provide a response. The total number of firms on which a report was received was 106. A *Yes* implies the respondent reported a succession event did occur, and a *No* implies the respondent reported a succession event did not occur.

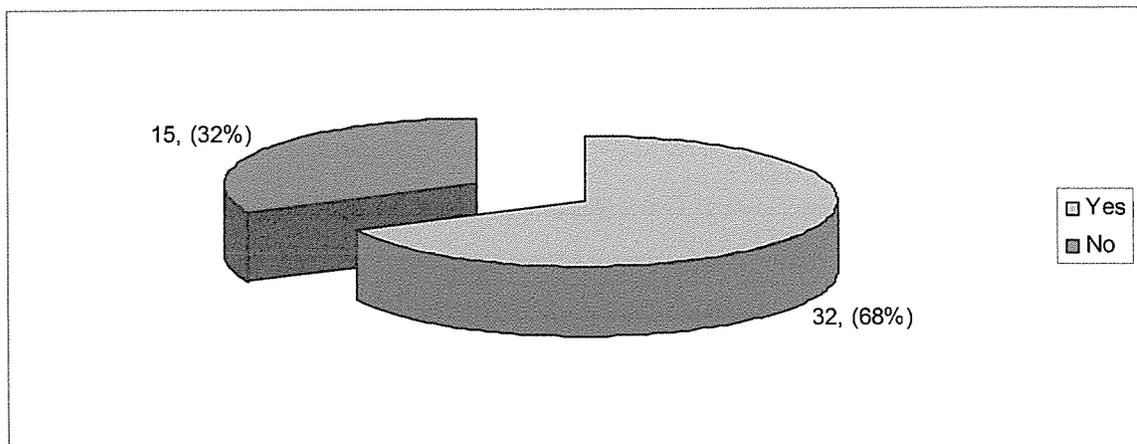


Figure 23. Percentage of all respondents reporting at least one succession event.

68% (32/47) of all respondents reported at least one of the firms on which they reported had experienced a succession event.

Distribution of firms which experienced a succession event. Table 59 shows the combined sample distribution of firms which had succession events as a function of firm outcome.

Table 59

Distribution of Firms Which Experienced a Succession Event as a Function of Firm Outcome for Combined Survey & Non-respondent Sample

Firm Outcome	Number of Firms Reporting a Succession Event	Total Number of Firms	Percentage	Number of Firms with No Data
Super-success	13	21	61.9%	3
Success	12	21	57.1%	9
Projected Success	13	24	54.2%	11
Living Dead	12	20	60.0%	8
Failures	<u>7</u>	<u>20</u>	35.0%	<u>8</u>
Totals	57	106	53.8%	39

The combined survey and non-respondent sample distribution of firm outcomes, which had a succession event, indicates between 54% and 62% of Super-successes, Successes, Projected Successes, and Living Dead firms experienced a succession event during their pre-IPO periods. Failures had a significantly lower percentage of succession events at 35%. Again a word of caution about this finding, the relatively low percentage of Failures reported to have experienced a succession event may reflect the view, widely reported in the literature, that VCs have a tendency to overstate the value of their influence and contributions to the success of VFSCs (Bruton et al., 1997; Rosenbloom, 2006; Schefczyk & Gerpott, 2000).

Firm outcome distributions as a function of experiencing or not experiencing succession events. A relationship this study sought to analyze was whether or not the distribution of firm outcome counts for firms, which experienced a succession event, was statistically significantly different from the expected distribution of firm outcome counts for the combined survey and non-respondent sample which did and did not experience a succession event. A one-sample Chi Square Test was used to test for differences between the two distributions of counts. 51 respondents attempted to take the survey instrument. Of the 51, 47 provided a response to question 9. Refer to Appendix O for the text of question 9. The null hypothesis that was tested is presented in Table 60.

Table 60

Null Hypothesis Model for Testing the Influence of a Succession Event on Firm Outcome

Null Hypothesis Acronym	Null Hypothesis
H43	There was no difference between the observed distribution of firm outcome counts, which experienced a succession event, and the expected distribution of firm outcome counts.

The test results for the Chi Square Test are presented in Table 61.

Table 61

Chi Square Statistic for Influence of a Succession Event on Firm Outcome

Null Hypothesis	χ^2 Statistic	χ^2_c $\alpha = 0.05; df = 4$	Accept/ Reject - Ho
H43	1.758	9.49	Accept

The sample size was 106 of which 57 had a succession event. Actual calculations are provided in Appendix V20. Table 61 indicates a statistically significant difference did not exist between the observed distribution of firm outcome counts, which experienced a succession event, and the expected distribution of firm outcome counts at the 95% confidence level.

Combined Vision-related Data & Analysis

The following information pertains to survey instrument questions 11, 12, 13, 14, and 15. Research questions R2–R23 have also been addressed.

Percentage of firms with a vision. The estimated percentage of all VFSC firms that had a vision was 96.4% (107/111). This figure was determined from the combined survey and non-respondent samples.

Vision articulated in writing. Figure 24 shows the number of firms reported to have had a vision that was articulated in writing as a function of firm outcome for the combined survey and non-respondent samples. The total number of responses for the combined survey and non-respondent samples was 107. Responses for 38 (out of the 145) firms were not received.

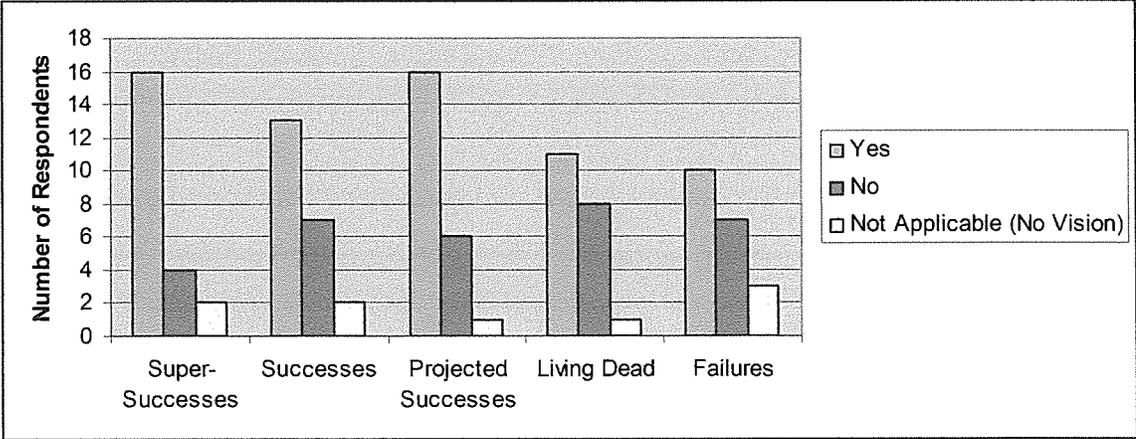


Figure 24. Combined sample: Number of firms with vision articulated in writing.

Figure 24 shows Super-successes (72.7%), Successes (59.1%), and Projected Successes (60.6%) were more likely to have had a vision that was articulated in writing than not. Living Dead (55.0%) and Failure (50%) firms were less likely than Super-successes, Successes, or Projected Successes to have had visions articulated in writing although in both cases a substantial number of firms (50 %+) had visions articulated in writing.

The primary research questions and the remaining contextual or secondary research questions of the study will now be addressed. The list of five relationships studied in the *Survey Results* section (page 117) is repeated here for convenience and readability.

1. Firm outcome as a function of the degree to which the founder's vision was sustained, changed, or disregarded (during the pre-IPO period).
2. Firm outcome as a function of the degree to which the founder's vision was valued by (Board of) Directors.
3. Firm outcome as a function of the degree of vision clarity.
4. Firm outcome as a function of degree of vision conformity (with the definition provided in the solicitation package).
5. Degree of vision change as a function of occurrence of a succession event.

The objective of the tests, used to analyze the combined survey and non-respondent sample data set, was to identify causal relationships for firm outcomes or vision change that could be characterized as statistically significant.

Degree of vision change as a function of firm outcome. The analysis of the first relationship sought to determine if any of the five categories of firm outcomes were influenced by any of the seven classifications of vision state. Figure 25 shows the degree

to which the founder's(s') vision(s) were sustained, changed, or disregarded during the pre-IPO period for the combined sample. The total number of responses for the combined sample was 100. No responses were received for 45 firms (out of 145).

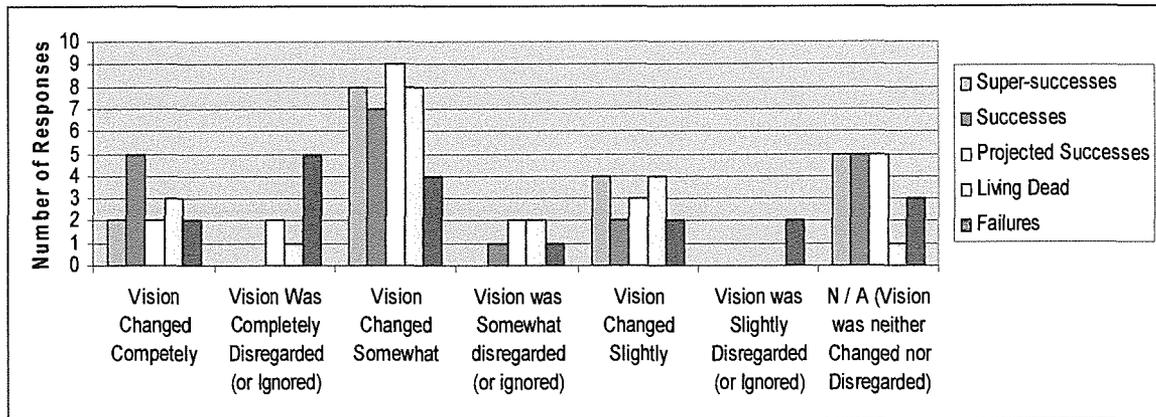


Figure 25: Combined sample: Change-related vision classifications versus firm outcome.

Data from Figure 25 has been rotated 90 degrees and re-displayed in Table 62. The convenience of having a sample size of 100 facilitates analysis of the data in percentage form. Figure 25 and Table 62 show survey respondents reported firm visions were either changed or disregarded during their respective pre-IPO periods 81.0% of the time. Of the 81 firms that were reported to have had their visions changed or disregarded, 65 (80.2%) were reported to have ‘completely changed’, ‘somewhat changed’, or ‘slightly changed’ their visions. Eight firms ‘completely disregarded or ignored’ their visions during the pre-IPO period, six firms ‘somewhat disregarded’ their visions, and two firms ‘slightly disregarded’ their visions. The largest number (36) of responses fell into the ‘vision changed somewhat’ classification.

Table 62

Combined Sample: Firm Outcome versus Change-related Vision Classification Count

Vision Change Classifications	Super-successes	Successes	Firm Outcomes			Totals
			Projected Successes	Living Dead	Failures	
Vision Change Completely	2	5	2	3	2	14
Vision Disregarded Completely	0	0	2	1	5	8
Vision Changed Somewhat	8	7	9	8	4	36
Vision Disregarded Somewhat	0	1	2	2	1	6
Vision Changed Slightly	4	2	3	4	2	15
Vision Disregarded Slightly	0	0	0	0	2	2
Vision Sustained	5	5	5	1	3	19
Totals	19	20	23	19	19	100

It is interesting to note no Super-successes ‘completely disregarded’, ‘somewhat disregarded’, or ‘slightly disregarded’ their visions. No Successes ‘completely disregarded’ their vision. The same number of Super-successes, Successes, and Projected Successes (5) ‘sustained’ their visions. A smaller number of Living Dead (1) and Failures (3) ‘sustained’ their visions.

A series of statistical tests were conducted to look for differences between the observed distributions of change-related vision classification counts as a function of firm

outcome and the expected distribution of change-related vision classification counts (derived from the combined survey sample). The tests employed one-sample Chi Square Tests. The small number of expected counts per vision classification necessitated pooling of classifications to meet the Chi Square minimum expected contingency table cell count of five. ‘Vision changed completely’, ‘vision disregarded completely’, ‘vision changed somewhat’, and vision disregarded somewhat’ were pooled together into one classification. ‘Vision changed slightly’, ‘vision disregarded slightly’, and ‘vision sustained’ were pooled together into a second classification for purposes of performing the test. The null hypotheses that were tested are presented in Table 63.

Table 63

Combined Sample: Null Hypotheses Models for Vision Change-Related Classifications

Null Hypotheses Acronyms	Null Hypotheses
H44 – H48	There was no difference between the observed distributions of vision change-related classification counts as a function of firm outcome and the expected distribution of vision change-related classification counts for the combined sample.

Table 64 provides a list of the null hypotheses, the firm outcomes, the relevant Chi Square Statistics, and a corresponding accept-reject decision for each hypothesis. Actual calculations are provided in Appendix V21. Table 64 shows that in all cases the observed distributions of pooled vision classification counts as a function of firm outcome could not be proven to be statistically significantly different from the expected distribution of pooled vision classification counts at the 95% level of confidence.

Table 64

Combined Sample: Chi Square Test Statistics for Vision Classifications

	Firm Outcome	χ^2 Statistic	χ^2_c $\alpha = 0.05; df = 1$	Accept/ Reject - Ho
H44	Super-Successes	1.066	3.84	Accept
H45	Successes	0.009	3.84	Accept
H46	Projected Successes	0.015	3.84	Accept
H47	Living Dead	2.396	3.84	Accept
H48	Failures	0.006	3.84	Accept

Vision value by BOD as a function of firm outcome. The second relationship (refer to page 176) this study sought to analyze was the degree to which the founder's vision was valued by the Board of Directors. Figure 26 shows the degree to which respondents valued the visions of the firms on which they reported as a function of firm outcome. The total number of responses from the combined survey and non-respondent sample was 108 (out of 145). Responses for 37 firms were not received. Figure 26 shows a very high percentage (81.8%) of Super-successes had visions that were highly valued by their BODs. The percentage dropped for Successes (60.0%) and dropped further again for Projected Successes (37.5%). Living Dead and Failure firms were reported to have had a more normal shaped distribution, and thus had a higher percentage of firms in which the vision was either not valued or did not exist.

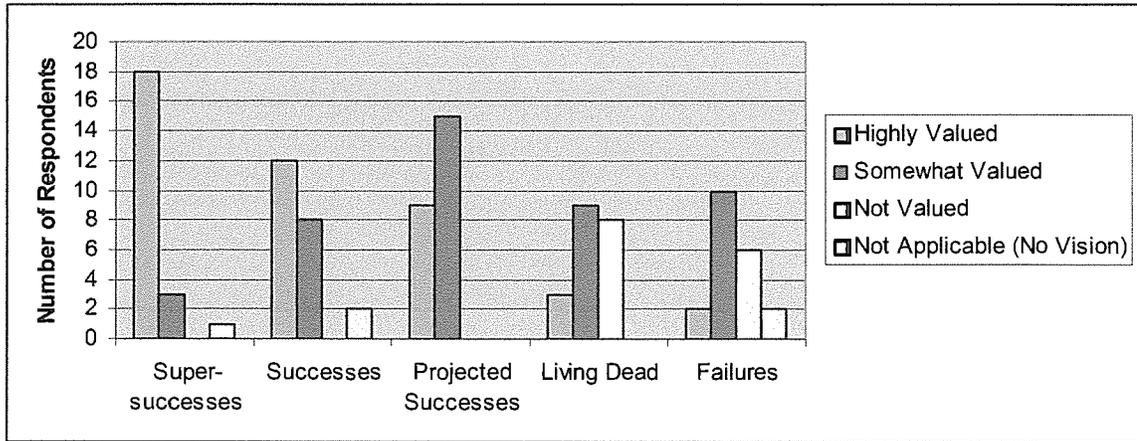


Figure 26. Combined sample: Degree of vision valuation as a function of firm outcome.

A series of statistical tests were conducted to look for statistically significant differences between the distributions of observed counts of vision valuation as a function of firm outcome and the distribution of expected counts of vision valuation (derived from the combined survey sample). The tests employed one-sample Chi Square Tests. The small number of expected counts per degree to which visions were valued by Boards of Directors necessitated the pooling of classifications to meet the Chi Square Test requirement for expected contingency table cells to have five counts or more. Classifications, ‘somewhat valued’, ‘not valued’, and ‘not applicable (no vision)’, were pooled. Table 65 provides a list of the null hypotheses that were evaluated:

Table 65

Combined Sample: Null Hypotheses Models for Vision Valuation by Boards of Directors

Null Hypothesis Acronyms	Null Hypotheses
H49 – H53	There was no difference between the observed distributions of vision valuation counts as a function of firm outcome and the expected distribution of vision valuation counts for the combined sample.

Table 66 provides a list of the null hypotheses, the firm outcomes, the relevant Chi Square Statistics, and a corresponding accept-reject decision for each null hypothesis. Actual calculations are provided in Appendix V22.

Table 66

Combined Sample: Chi Square Test Statistics for Vision Valuation by Firm Boards

	Firm Outcome	χ^2 Statistic	χ^2_c $\alpha = 0.05; df = 1$	Accept/ Reject - Ho
H49	Super-Successes	15.376	3.84	Reject
H50	Successes	1.737	3.84	Accept
H51	Projected Successes	0.014	3.84	Accept
H52	Living Dead	5.489	3.84	Reject
H53	Failures	7.828	3.84	Reject

Table 66 shows that in the cases of H50 (Successes) and H51 (Projected Successes), the observed distributions of vision valuation counts as a function of firm outcome were not statistically significantly different from the expected distribution of vision valuation counts at the 95% level of confidence. Null hypotheses, H49, H52, and H53 (Super-successes, Living Dead, and Failures respectively), were rejected. Differences in the observed distributions of vision valuation counts as a function of firm outcome were determined to be statistically significantly different from the expected distribution of vision valuation counts at the 95% confidence level.

Vision clarity as a function of firm outcome. The third relationship (refer to page 176) this study sought to analyze was the degree to which vision clarity influenced firm

outcome. Figure 27 shows the degree of vision clarity as a function of firm outcome for the combined samples. The combined total of responses was 111. No responses were received for 34 firms (out of 145).

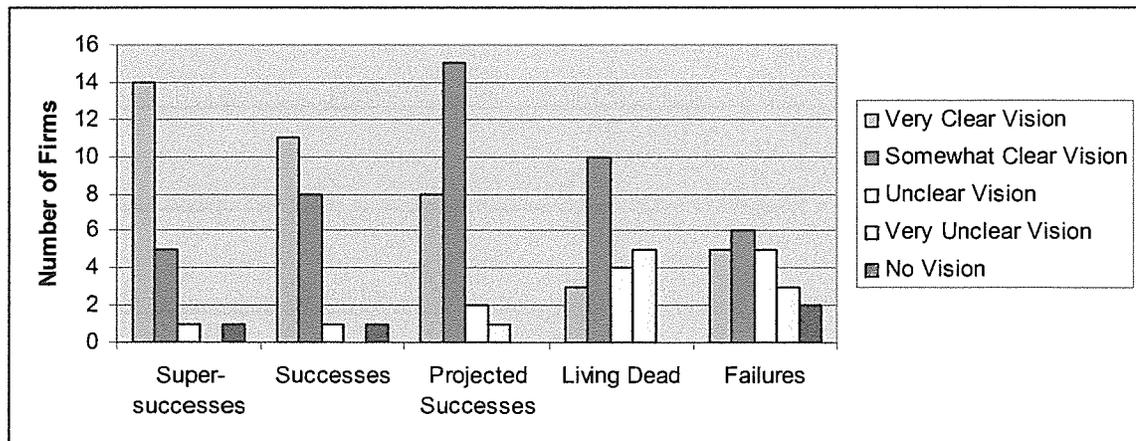


Figure 27. Combined sample: Vision clarity versus firm outcome.

Figure 27 indicates a large percentage (89.7%) of Super-successes, Successes, and Projected Successes had a ‘very clear’ or ‘somewhat clear’ vision. Living Dead and Failure firms tended to have had a more uniform or normal distribution of vision clarity counts although a significant number (45.4%) of Living Dead firms had a ‘somewhat clear’ vision.

A series of statistical tests were conducted to look for differences between the observed distributions of vision clarity counts as a function of firm outcome and the expected distribution of vision clarity counts (derived from the combined survey sample). The analyses employed the use of one-sample Chi Square Tests. Table 67 shows the null hypotheses that were tested.

Table 67

Combined Sample: Null Hypotheses Models for Vision Clarity

Null Hypotheses Acronyms	Null Hypotheses
H54 - H58	There was no difference between the distributions of vision clarity counts as a function of firm outcome and the expected distribution of vision clarity counts for the combined sample.

Table 68 shows the Chi Square Statistics resulting from the tests. For purposes of this analysis, classifications, ‘somewhat clear vision’, ‘unclear vision’, ‘no vision’, and ‘very unclear vision’, were pooled. Pooling was done to insure the minimum count in each of the expected Chi Square contingency table cells was five or greater. Appendix V23 shows the calculations of the Chi Square Statistic.

Table 68

Combined Sample: Chi Square Statistics for Influence of Vision Clarity on Firm Outcome

Firm Outcome	χ^2 Statistic	χ^2_c $\alpha = 0.05; df = 1$	Accept/ Reject - Ho
H54 Super-successes	7.968	3.84	Reject
H55 Successes	2.150	3.84	Accept
H56 Projected Successes	1.716	3.84	Accept
H57 Living Dead	5.420	3.84	Reject
H58 Failures	1.554	3.84	Accept

Table 68 indicates a statistically significant difference did not exist between the observed distributions of vision clarity counts as a function of firm outcome for Successes,

Projected Successes, and Failures and the expected distribution of vision clarity counts at the 95% confidence level. A statistically significant difference did exist between the observed distributions of vision clarity counts for Super-successes and Living Dead firms and the expected distribution of vision clarity counts at the 95% confidence level.

Vision conformity as a function of firm outcome. The fourth relationship (refer to page 176) this study sought to analyze was the degree to which vision conformity with the definition used in the survey solicitation package (Appendix I) influenced firm outcome. Figure 28 shows the degree to which the combined samples' visions conformed to the definition for a vision provided in the survey email solicitation package. The total number of responses for the combined sample was 107. No responses were received from 38 firms (out of 145).

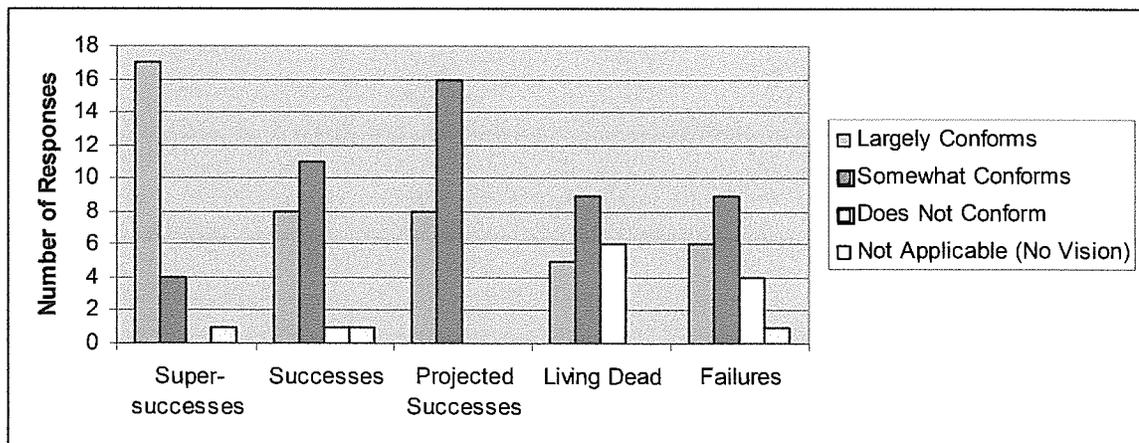


Figure 28. Combined sample: Degree of vision conformity with study's definition.

Figure 28 shows respondents reported a high percentage (77.3%) of Super-successes had visions that 'largely conformed' to the definition provided in the email solicitation package (Appendix I). In the cases of Successes (90.5%) and Projected Successes (100%), large percentages of respondents reported visions 'largely conformed' or 'somewhat conformed' to the definition for a vision provided in the email solicitation

package. Living Dead and Failure firms were reported to have had distributions with a more normal spread. This data set further substantiated the finding in the survey data set that vision definitions, accepted in the literature, were not as widely used as might have been expected in the VC industry. 63 out of 107 (58.9%) firms were reported to have had a vision that ‘somewhat conforms’ or ‘does not conform’ to the literature definition for a vision as judged by the respondents.

A series of statistical tests were conducted to look for differences between the observed distribution of vision conformity counts as a function of firm outcome and the expected distribution of vision conformity counts (derived from the combined survey sample). The tests employed the use of one-sample Chi Square Tests. Table 69 shows the null hypotheses that were tested.

Table 69

Null Hypotheses Models for Vision Conformity (with Study Definition)

Null Hypotheses Acronyms	Null Hypotheses
H59 – H63	There was no difference between the distributions of vision conformity counts as a function of firm outcome and the expected distribution of vision conformity counts for the combined sample.

Table 70 shows the Chi Square Statistics resulting from the tests. For purposes of this analysis, classifications, ‘somewhat conforms’, ‘does not conform’, and ‘no vision’, were pooled. Pooling was done to insure the minimum count in each Chi Square expected contingency table cell was five or greater. Appendix V24 shows the calculations of the Chi Square Statistic.

Table 70

Combined Sample: Chi Square Statistics for Influence of Vision Conformity on Firm Outcome

	Firm Outcome	χ^2 Statistic	χ^2_c $\alpha=0.05; df=1$	Accept/ Reject - Ho
H59	Super-successes	11.875	3.84	Reject
H60	Successes	0.079	3.84	Accept
H61	Projected Successes	1.116	3.84	Accept
H62	Living Dead	2.147	3.84	Accept
H63	Failures	1.022	3.84	Accept

Table 70 indicates a statistically significant difference did not exist between the observed distributions of vision conformity counts as a function of firm outcome for Successes, Projected Successes, Living Dead, and Failures and the expected distribution of vision conformity counts at the 95% confidence level. A statistically significant difference did exist between the observed distribution of vision conformity counts for Super-successes and the expected distribution of vision conformity counts for the combined survey and non-respondent samples at the 95% confidence level.

Degree of vision change as a function of succession events. The fifth relationship (refer to page 176) this study sought to analyze was the degree to which a succession event influenced the degree to which firms' visions were sustained, changed, or disregarded. A one-sample Chi Square Test was used to look for a difference between the observed distribution of change-related vision classification counts for firms which experienced a succession event and the expected distribution of change-related vision

classification counts for firms which did and did not experience a succession event. The sample size was 100 (out of 145) made up of 57 firms, which had a succession event, and 43 firms which did not have a succession event. No responses were reported for 45 firms.

Table 71 shows the null hypothesis that was tested.

Table 71

Null Hypothesis Model for Testing the Influence of a Succession Event on Vision Change-related Classifications for the Combined Sample

Null Hypothesis Acronym	Null Hypothesis
H64	There was no difference between the distribution of change-related vision classification counts for firms which experienced a succession event, and the expected distribution of change-related vision classification counts for firms which did and did not experience a succession event.

Table 72 shows the Chi Square Statistic resulting from the test. For purposes of analysis, classifications ‘vision changed somewhat’ and ‘vision disregarded somewhat’ were pooled to form one new classification and ‘vision changed slightly’ and ‘vision disregarded slightly’ were pooled to form a second new classification. It was not necessary to pool ‘vision changed completely’, ‘vision disregarded completely’, or ‘vision sustained’. Pooling was done to insure the minimum count in each of the expected contingency table cells was five or greater. Appendix V25 shows the calculations of the Chi Square Statistic. The results of Table 72 show there was no statistically significant difference between the distribution of vision change-related classification counts for firms which experienced a succession event, and the expected distribution of vision

change-related classification counts derived from the combination of firms which did and did not experience a succession event at the 95% level of confidence.

Table 72

Chi Square Test: Influence of a Succession Event on Distribution of Vision Classifications

	χ^2 Statistic	χ^2_c $\alpha = 0.05; df = 4$	Accept/ Reject - Ho
H64	0.703	9.49	Accept

Combined Industry Success/Failure Rates & Percentages of Pre-IPO Firm Outcomes

The following information pertains to questions 16 and 17 of the survey instrument (Appendix O). Research questions R24 and R25 have also been addressed.

Super-successes, successes, & failures. Table 73 shows a summary of the descriptive statistics for firm outcomes for the combined survey and non-respondent sample for Super-successes, Successes, and Failures. Table 73 is a compilation of the data from Tables 20, 23, 52, and 55. It must be noted the sample of 23 respondents was culled from an initial sample size of 36 respondents because the results provided by 13 respondents did not comply with the guidelines for answering question 16. Guidelines for answering the question were provided at the beginning of question 16 of the survey instrument (Appendix O).

Table 73

Percentage of VFSC Super-successes, Successes, Failures, Projected Successes, & Living Dead for Combined Sample

	Firm Category				
	Super-successes	Successes	Failures	Projected Successes	Living Dead
Sample Size (<i>n</i>)	23	23	23	24	24
Mean	10.57%	34.35%	55.01%	55.33%	44.67%
<i>SD</i>	8.17%	22.13%	25.88%	28.16%	28.16%

A Student's *t*-Test was conducted on the Failure data to determine if the failure rate had changed from the values reported by (Cooper & Bruno, 1977). The null hypothesis for the *t*-Test is presented in Table 74.

Table 74

Null Hypothesis Model for Testing whether or not VFSC Failure Rates Have Changed

Null Hypothesis Acronym	Null Hypothesis
H65	There was no difference between the combined sample proportion mean of Failures and the proportion of Failures reported by Cooper & Bruno, 1977).

The results of the Student's *t*-Test are presented in Table 75. Actual calculations are displayed in Appendix V26. The sample size for the combined survey and non-respondent samples was 23.

Table 75

Student's t-Test Results for Failure Proportion Mean of Combined Sample

Null Hypothesis	Statistic	Calculated Value	Critical Value $\alpha = 0.025, df = 22$	Accept/ Reject Ho
H65	<i>t</i>	4.648	± 2.074	Reject

The failure rate was determined to have increased, and the *t*-Test indicated the change was highly statistically significant (p -value < 0.005). The sampling mean of the proportion of Failures was determined to lie between 0.442 and 0.660 at the 95% confidence level. A Finite Population Correction Factor of 0.975, calculated to account for the finite population of 450 firms, was used in determining the confidence interval. Due to the binomial nature of Success/Failure rates, success rates were determined to have declined correspondingly.

Projected successes & living dead. A Student's *t*-Test was conducted on the Projected Success data to determine if the Projected Success rate had changed from the values reported by (Ruhnka et al., 1992). It must be noted the sample of 24 respondents was culled from an initial sample size of 36 respondents because the results provided by 12 respondents did not comply with the guidelines for answering question 17. Guidelines for answering the question were provided at the beginning of question 17 of the survey instrument (Appendix O). The null hypothesis for the *t*-Test is presented in Table 76.

Table 76

Null Hypothesis Model for Testing whether or not VFSC Projected Success Proportion Mean Has Changed

Null Hypothesis Acronym	Null Hypothesis
H66	There was no difference between the combined sample proportion mean of Projected Successes and the proportion of Projected Successes reported by (Ruhnka et al., 1992).

The results of the Student's *t*-Test are presented in Table 77. Actual calculations are displayed in Appendix V26. The sample size for the combined survey and non-respondent samples was 24.

Table 77

Student's t-Test Results for Projected Success Proportion Mean of Combined Sample

Null Hypothesis	Statistic	Calculated Value	Critical Value $\alpha = 0.025, df = 23$	Accept/ Reject - Ho
H66	<i>t</i>	0.017	± 2.069	Accept

The Projected Success proportion mean for the combined survey and non-respondent sample was determined not to have been statistically significantly different from the proportion value reported by Ruhnka et al. at a 95% confidence level. Correspondingly, the proportion of Living Dead firms was determined not to have been statistically significantly different at the 95% confidence level. The sampling mean of the Projected Success proportion was determined to lie between 0.43 and 0.67 at the 95% confidence

level. A Finite Population Correction Factor of 0.975, calculated to account for the finite population of 450 firms, was used in determining the confidence interval.

Chapter 4 Summary

The results section of this study, Chapter 4, is composed of four main sub-sections:

1. Pilot Study
2. Survey Results
3. Non-response Bias Test Results
4. Combined Survey and Non-respondent Sample Results

The Pilot Study, which was produced from the inputs of seven senior VC industry executives in conjunction with the survey plan (Appendix Q1), established an acceptable level of survey instrument content validity. The Pilot Study also established an acceptable level of survey instrument reliability via its test-retest repeatability correlation exercises.

Survey sample responses from 37 of the 450 (8.2%) NVCA member firms that were solicited yielded data that described the responding members' number of 'years of experience' and 'strength of believe in the need for a vision' (in VFSCs). Survey sample respondents also provided data on all five firm outcomes this study sought to study in relatively evenly distributed counts.

22 of 37 survey sample respondents (59.4%) provided variable data which facilitated an estimation of the percentage of firms that had a vision. The respondents provided data on whether or not firms articulated their (founder's) visions in writing (or not). They provided data on the degree to which VFSC visions were sustained, changed, or disregarded as a function firm outcome, and they provided data on the degree to which

Boards valued VFSC firms' visions. Data on the clarity of VFSC visions as a function of firm outcome, and the degree of conformity with the study's definition for a vision as a function of firm outcome were also reported. Conformity with the literature's accepted definitions for a vision was found to be sporadic. Finally, the survey respondent data was analyzed to determine how succession events influenced the degree to which visions were changed, disregarded, or sustained.

While most of the statistical tests performed did not show evidence of significant differences between the observed distributions and expected distributions, there were several tests which yielded statistically significant differences. These will be discussed in the section titled Chapter 5.

Industry Success/Failure rates were evaluated to determine whether or not changes had occurred in the time since earlier studies had been published. Failure and success rates were found to have changed statistically significantly, while Projected Success and Living Dead proportions were determined not to have statistically significantly changed.

A Non-response Bias Test was conducted to determine if a non-respondent sample from the non-respondent population (of 413 firms) would produce a statistically significantly different response set when compared to the survey response set. The Non-response Bias Test results indicated the survey and non-respondent samples came from the same population, and as such, suggested both the survey sample and non-respondent samples should be combined to provide a more robust picture of the VFSC population.

Sample counts from the survey and non-respondent samples were aggregated to form a combined sample, and statistical tests were conducted on the combined sample.

The calculated values for the test statistics were numerically different from the constituent sample statistics, but the accept-reject decisions remained unchanged for all cases except one. The only statistically significant difference was the following: The survey sample Chi Square Statistic for evaluating the influence of vision clarity on firm outcome for Successes indicated there was a statistically significant difference between the observed distribution of vision clarity counts for Successes and the expected distribution of vision clarity counts at the 95% confidence level. The equivalent Chi Square Statistic for the combined survey and non-respondent sample indicated there was no statistically significant difference between the two samples at the 95% confidence level.

Test results on industry Success/Failure rates and proportions of pre-IPO firm outcomes indicated the results from the survey sample were equivalent to the results from the combined survey and non-respondent sample. A statistically significant difference between the two samples was not discernable.

Chapter 5: Summary, Conclusions, & Recommendations

Chapter 5: *Summary, Conclusions, & Recommendations* has been organized as follows:

1. Review of Relevant Theory
2. Summary of Findings
3. Conclusions
4. Recommendations & Delimitations

The *Review of Relevant Theory* provides a brief review of the theories introduced in Chapter 1. A discussion of how the Success – Failure Continuum model (Refer to p. 10.) was received by survey participants ensues, and a summary of the variables studied and their influence on firm outcomes is presented.

The *Summary of Findings* discusses the key findings of this study. A more complete list of the study's findings is presented in Appendix W.

The *Conclusions* section provides a summary of the study's conclusions. It assesses the impact of each of the study's contextual variables on firm outcome as one migrates across the Success – Failure Continuum. Conclusions about the influence of succession events on firm outcomes and vision change are presented, and the status of the VC industry's Success/Failure rates is discussed.

Chapter 5 concludes with a *Recommendations* section segmented into two parts. The first section provides a list of suggestions for improving the success rate of VFSCs, and the second section provides suggestions for future research and investigation.

Review of Relevant Theory

One of the purposes of this study was to examine the theory that sustaining the founder's(s') vision throughout the pre-IPO period would lead to an increased success rate among Venture Funded High Tech Start-up Companies (VFSCs). A corollary purpose (of this study) was to determine if the failure to sustain the founder's(s') vision would lead to an increase in the number of Living Dead and/or Failure firms. The results of this study largely disproved the former argument, but they provide a modicum of support for the later argument.

The entrepreneurship literature's contention (See the section titled: *Founder's Vision*, page 8, for references.) that vision is a key ingredient in the success of VFSCs has been supported by this study's findings. Approximately 70% of survey respondents indicated they 'strongly believe' in the need for a vision and 94% of survey respondents indicated they 'believe' or 'strongly believe' in the need for a vision.

The model developed to provide a framework for this study; namely, the *Success - Failure Continuum* (page 10), proved to be useful for a majority of VC respondents in responding to the survey's questions; however, a minority of respondents found it to be self-limiting. Several survey respondents were not familiar with the model's conceptual constructs, (e.g. Projected Successes, Living Dead, etc.). The model did not comprehensively address the emergence of VC investment strategies designed to harvest pre-IPO firms prior to and well in advance of their IPOs. This trend and its impact on VC industry practices may prove to be a rich thread or topic for future investigations.

It was theorized (by me) that many variables, other than sustaining the founder's(s') vision, influenced firm outcomes. Of the variables examined in this study;

namely, articulation of a vision in writing, succession event occurrence, vision clarity, vision conformity with this study's definition, and vision valuation by (Board) Directors, vision conformity and vision clarity were identified as variables that influenced firm outcome, specifically Super-successes, in a statistically significant fashion. Vision articulation in writing was found to be linked to the development of the studied vision-related variables. Vision valuation by Board Directors was found to be linked to VFSC success, but it was not clear from this study's data whether this relationship was an a priori or a posteriori outcome.

Summary of Findings

This study examined 26 research questions and 66 hypotheses. The results of the study strongly support the entrepreneurship literature's contention that (the founder's) vision is an important element in realizing VFSC success. The study's findings suggest founder's (s') visions should be taken seriously by VC investors and management teams alike. The literature (Collins & Porras, 1991) suggests (founder's) visions provide VFSC firms with tangible images and direction. Additionally, the literature (Baum, 1995; Quigley, 1994; Shamir et al., 1993) suggests well-developed visions elicit the motivation VFSC firm employees need to generate to realize their firms' visions in the face of the enormous obstacles new companies encounter.

The variables this study has identified that warrant VFSC management consideration and monitoring are highlighted as follows:

- *Vision Articulation* in Writing.
- *Vision Change or Disregard*.
- *Vision Valuation* (by Board Directors)

- *Vision Clarity.*
- *Vision Conformity* (with the converging definitions for a [founder's] vision).

This study found articulating a vision in writing was a common practice for VFSC firms. The percentage of firms which articulated a vision in writing was 61.7% or 66 out of 107 firms. However, the percentage of Super-successes (72.7% or 16 out of 22), was significantly higher. 59.1% (13 out of 22) of Successes were reported to have had visions articulated in writing, and 69.6% (16 out of 23) of Projected Successes were reported to have had visions articulated in writing. Cross-tab analysis of 'vision clarity' with 'articulation of vision in writing' for the combined survey and non-respondent sample revealed 76.0% (38 out of 50) of firms with 'very clear' visions articulated them in writing. Only 41.2% (7 out of 17) of firms with 'unclear' or 'very unclear' visions articulated visions in writing. These results suggest articulating a vision in writing helps VFSCs clarify their visions and thus, makes them more tangible and relevant.

This study found that 'changing' or 'disregarding' firms' visions did not preclude success. On the contrary, a significant percentage of Super-successes (73.7% or 14 out of 19 firms) and Successes (45% or 9 out of 20 firms) were realized despite the firms' visions having been changed. It is interesting to note that only 1 firm, which disregarded its vision to any degree, became a Success, and no Super-successes disregarded their visions. These results suggest changing or tweaking a vision may be productive, but ignoring firm visions may be problematic. A very small percentage of Living Dead firms (5.3% or 1 out of 19) and Failure firms (15.8% or 3 out of 19) sustained their visions. This data suggests once a vision has been 'changed' or 'disregarded', firms' chances of achieving success have been materially reduced.

The results of this study on vision valuation (by Board Directors) show a high percentage of Super-successes (81.8% or 18 out of 22) and Successes (54.5% or 12 out of 22) had visions that were ‘highly valued.’ Conversely, a significant percentage of Living Dead (40% or 8 out of 20) and Failure (40% or 8 out of 20) firms had visions that were ‘not valued’ or they had *no* vision at all. It is not clear from the data whether or not VC Board members assessed firm vision value prior to or after the fates of their firms had been decided, but the evidence suggests firms, whose visions are valued, tend to be more successful than firms whose visions are not valued (by Directors).

The study identified vision clarity as a variable that is linked to VFSC success. A high percentage (66.7% or 14 out of 21) of Super-success firms was reported to have had a ‘very clear’ vision, and a significant percentage (52.4% or 11 out of 21) of Successes had a ‘very clear’ vision. This contrasts with Living Dead and Failure firms which had a significant percentage (40.9% or 9 out of 22 and 38.1% or 8 out of 21, respectively) of firms with visions characterized as ‘unclear’ or ‘very unclear.’

Only 41.1% (44 out of 107) of the VFSCs on which a report was received had visions which ‘largely conform’ to the definition used in this study (Appendix I). This by itself would not be a significant finding, except that 77.3% (17 out of 22) Super-successes had visions that ‘largely’ conform to this study’s definition (for a vision). Furthermore, a moderately high percentage of Living Dead (30.0% or 6 out of 20) and Failure (25.0% or 5 out of 20) firms were reported to have had visions that ‘did not conform’ to this study’s definition or they had *no* vision. Successes (90.5% or 19 out of 21 firms) and Projected Successes (100% or 24 out of 24 firms) had visions that either ‘largely conformed’ or ‘somewhat conformed’ to this study’s definition. There were no reports of Successes or

Projected Successes having visions that ‘did not conform’ to this study’s definition. This data suggests conformity with this study’s and the literature’s converging definitions for a vision may play an important role in VFSC success. The data suggests a well developed vision, like a well developed mission statement, may provide managerial constructs that enhance the probability of VFSC success.

Succession events have been shown not to statistically significantly cause visions to be ‘changed’ or ‘disregarded’. To the extent that (founders’) visions have value and should be preserved and/or refined, this study’s data suggests that succession events did not cause visions to be ‘changed’, ‘disregarded’, or ‘sustained’ any more than would occur in the cases where a succession event did not occur. This study’s data suggests succession events should be executed when deemed appropriate without fear of inadvertently ‘changing’ or ‘disregarding’ the (founder’s) vision. A complete listing of this study’s findings is presented in Appendix W.

Conclusions

The results and findings of this study have led to 13 conclusions. These conclusions are distributed among the three *conclusion* sub-sections which follow:

Vision-related Conclusions

One of the objectives of the study was to provide quantitative data to support the widely held view (in the entrepreneurship literature) that a (founder’s) vision is a key ingredient in VFSC success. The study’s results suggest a very clear well-developed (founder’s) vision does enhance the chances of VFSC success (Conclusion 1).

A theoretical question this study sought to answer was: Does sustaining founder’s(s’) visions throughout the pre-IPO period enhance the chances of a VFSC

becoming a Super-success or Success? This question has been largely answered in the negative; however, data from the study does suggest VFSC visions do get refined over time, and vision refinement can ultimately result in VFSC success (Conclusion 2).

Vision articulation in writing. The study's results suggest articulating a vision in writing can be beneficial; particularly for Super-successes, Successes, and Projected Successes. Figure 24, (page 175) shows the frequency count for articulating a vision in writing peaks for Super-successes and trends downward as one migrates across the Success - Failure Continuum from left to right. Most firms (61.7%) including Living Dead (55.0%) and Failures (50.0%) articulated visions in writing. Cross-tabulations of the Super-success data for vision clarity, conformity, and valuation versus articulation of visions in writing suggest the following: Articulating a vision in writing may be beneficial in enhancing the clarity of a firm's vision, framing the vision so it addresses the key tenets of the literature's definition for a vision, (See the section titled *Founder's Vision* on page 8 for a list of references.), and enhancing the value Directors accord to firms' visions (Conclusion 3). The Cross-tabulation results are displayed in Appendix X, Tables (79 – 83), for Super-successes, Successes, Projected Successes, Living Dead, and Failures respectively. The Cross-tabulation results capture the significance of these relationships.

Vision change or disregard. Data from Figure 25 and Table 62, (pages 177 – 178) show degree of vision 'change' or 'disregard' as a function of firm outcome. Table 62 indicates 'significant' vision change (eg. vision 'changed somewhat' and vision 'disregarded somewhat') resulted in significant percentages of Super-successes (42.2% or 8 out of 19) and Successes (35.0% or 7 out of 20). This finding supports the contention

that visions can be beneficially refined and enhanced over time. That said a significant percentage of Super-successes (47.4% or 9 out of 19) and Successes (35.0% or 7 out of 20) had visions that were ‘sustained’, ‘slightly changed’, or ‘slightly disregarded’ throughout pre-IPO periods. In the case of Super-successes, 5 of 19 (26.3%) firms sustained their founder’s(s’) visions. Successes sustained their founder’s(s’) visions throughout pre-IPO periods in 5 out of 20 (25%) firms.

Another important result from this study suggests that Living Dead (5.3% or 1 out of 19) and Failures (15.8% or 3 out of 19) generally do not sustain (founder’s) visions. This finding suggests that once a firm starts to change a (founder’s) vision, the chances of it becoming a Super-success or Success are materially reduced (Conclusion 4). Notwithstanding the above, there was a small percentage (15.8%) of VFSCs that sustained their visions until they failed. These firms had visions that could be characterized as *dead right*. The visions were so compelling neither management nor the (Board) Directors were willing to change the firms’ visions in the face of dire business realities.

To summarize, this study found Super-successes were equi-likely to experience ‘significant’ or ‘minor’ changes to their founder’s(s’) visions. Successes were more likely to have a ‘significant’ change to their founder’s(s’) vision than Super-successes. Living Dead and Failure firms were very unlikely to have sustained their founder’s(s’) visions, and a high percentage (73.7%) of Living Dead firms had visions that were ‘significantly changed’. Interestingly, Failures were equi-likely to have ‘significant’ or ‘minor’ changes to their visions. The Projected Success frequency count distribution for vision ‘change’ or ‘disregard’ tracked those of Super-successes and Successes.

Vision valuation. Vision valuation by (Board) Directors was identified as a statistically significant variable for Super-successes. 81.8% of Super-successes had visions that were ‘highly valued’ (by Board Directors). Figure 26, (page 181), indicates Directors’ appreciation for or the value they placed on a (founder’s) vision declines as one migrates across the Success - Failure Continuum from Super-successes to Failures. What is not clear (from the data) is whether or not Directors valued the visions for Super-successes and Successes prior to their IPOs. The data for Projected Successes suggests respondents take a *wait and see* approach before deciding whether or not they value VFSC visions. In this case vision valuation should not be considered a predictive indicator of firm success or failure (Conclusion 5). In the event respondents do not take a *wait and see* approach to vision valuation, the data suggests that not valuing a firm’s vision may be an indicator of Living Dead and Failure firm outcomes.

Vision clarity. Vision clarity has been identified as a statistically significant factor for Super-success firms. 66.7% of Super-successes had visions classified as ‘very clear’. The survey sample results indicated vision clarity had a tendency toward being a statistically significant variable for Successes; however, this was not born out in the combined survey and non-respondent sample. The data in Figure 27, (page 183), again suggests that as one migrates across the Success-Failure Continuum from left to right, vision clarity declines. (Conclusion 6) The data suggests the achievement of vision clarity has elements of an emergent process (Katz & Gartner, 1988; Lichtenstein et al., 2006). Projected Successes had the largest percentage (57.7%) of ‘somewhat clear’ visions. This percentage declined in both directions away from Projected Successes on the Success - Failure Continuum. An underlying assumption (by me) in this analysis is Living Dead

firms emerge from Projected Successes because VC investors would not invest in a Living Dead firm in the first place.

Vision conformity (with this study's definition). Conformity with the literature's converging definitions for a vision was identified as a statistically significant variable for the Super-success firms in this study. A high percentage (77.3%) of Super-successes had visions that 'largely conform' to the definition for vision used in the study (Appendix I). While an estimated 96% of all VFSCs have a vision, this study's results revealed more than half of all VFSCs had visions that 'did not conform' to the literature's converging definition, or the definition used in this study. The data in Figure 28, (page 185); indicate that as one migrates across the Success - Failure Continuum from left to right conformity with the literature's definition for vision declines. This trend suggests many VFSCs may have had visions that were not well developed, and as such; they did not provide the tangible image (Collins & Porras, 1991) and direction a vision construct is supposed to provide (Conclusion 7).

Succession Event Conclusions

Succession events in VFSC firms had a less significant impact on firm outcome and degree of vision change than I originally theorized. Table 59, (page 174), indicates there was not much variation in the percentage of firm outcomes, which experienced a succession event, for Super-successes (61.9%), Successes (57.1%), Projected Successes (54.2%), and Living Dead (60.0%) firms. Failures (35.0%) had a significantly lower percentage of succession events. The distribution of change-related vision classification frequency counts for firms, which experienced a succession event, was *not* found to be statistically significantly different from the distribution of change-related vision

classification frequency counts for firms which did and did not experience a succession event.

The entrepreneurship literature (Bruton et al., 1997; Rosenbloom, 2006; Schefczyk & Gerpott, 2000) is divided along the lines of whether Failures are caused by management failure to replace VFSC executives in a timely fashion or whether VCs value their contributions to VFSCs excessively. One thing is clear; succession events in VFSC firms occur frequently (Conclusion 8). In this study, 53.8% of the firms on which a report was received indicated they had experienced at least one succession event, and 68% of combined survey respondents indicated they reported at least one firm had experienced a succession event.

The entrepreneurship literature suggests even in the instances where founders are replaced for cause, founder's(s') visions have enduring influence long after the founder's departure for all categories of firm outcomes. (Conclusion 9) The results of this study are consistent with the entrepreneurship literature (Brown Jr., 1986; Bruton et al., 1997; Jain & Tabak, 2007; Nelson, 2003; Rosenbloom, 2006; Schefczyk & Gerpott, 2000; Wasserman, 2003).

Success/Failure Rate Conclusions

Determination of the success/failure rate of VFSCs was not a primary objective of this study; however, the survey methodology provided an opportunity to assess the current state-of-affairs. (Conclusion 10) Survey results support the contention VFSC success rates have declined significantly, since they were originally reported (Cooper & Bruno, 1977). The findings of this study suggest the proportion mean of Super-successes represents approximately 10% of VFSC firms, the proportion mean of Successes

represents approximately 35% of VFSC firms, and the proportion mean of Failures represents approximately 55% of VFSC firms. Large proportion standard deviations (on the order of 0.25 for Failures) suggest these figures vary widely among VC firms (Conclusion 11).

The popular press (Busenitz et al., 2005; Dimov & De Clerq, 2006; Dimov & Shepard, 2005; Garman & Phillips, 2006; Hayward et al., 2006; Laseter et al., 2007; Rosenbloom, 2006) has attributed declining success rates (for VFSCs) to a number of factors including:

- Growth in numbers of inexperienced VC investors and firms
- Growth in capital available for investment
- Velocity of capital flows to emerging markets & technologies
- Increased numbers of Start-ups seeking VC investment
- Challenges identifying excellent opportunities in maturing High Tech industries
- Society's growing acceptance of risk-taking & failure

Globalization (Enriquez, 2001; Friedman, 2005; Harman, 1998; Korten, 1999; McMichael, 2000; Wurman, 2001) of the world economy is unlikely to reverse these mega-trends, and if anything, they are likely to accelerate.

While the success rate of VFSC firms has declined over time, the percentages of Projected Successes and Living Dead have not changed in a statistically significant fashion (Conclusion 12). This study found the proportion mean of Projected Successes to be approximately 0.55 and the proportion mean of Living Dead firms to be approximately 0.45. The large standard deviation (0.28) suggests these figures vary widely among VC

firms (Conclusion 13). These results are rather surprising in light of an unpublished document circulated among NVCA member firms in the early years of this decade which suggested VCs should cut their losses when their firms' futures are in doubt; J. Taylor (personal communication, May 20, 2008).

Recommendations & Delimitations

The *Recommendations* arising out of this study have been divided into two sections. The first section deals with recommendations for improving the success rate of VFSCs, and the second section deals with ideas for future research and investigation.

Recommendations for Improving VFSC Success Rates

The recommendations for improving VFSC success rate arising out of this study are presented as follows:

1. Management teams and (Board) Directors are advised to invest resources in developing a clear well thought out vision.
2. Periodic review and refinement of (founder's) visions should be conducted.
3. Articulate (founder's) visions in writing.
4. Discern whether or not a change in a firm's vision is warranted. The results of this study suggest that once a firm's vision is changed, its chances or success are materially reduced.
5. Continuously endeavor to make a firm's vision a tangible image and as such as clear as possible.
6. Continuously assess the value of the (founder's) vision. If the vision is not valued highly, then it probably makes sense to reconsider making future investments in the firm.

7. Execute succession events where deemed appropriate. This study's results indicate a firm's vision is not adversely affected by succession events.

Delimitations

The study attempted to gain a broad understanding of how the founder's vision impacts VFSC firm success or lack thereof. However, there were certain limitations to which the reader should be made aware. The limitations may be considered opportunities for future research and investigation. The principal limitations of this study have been identified as follows:

1. VFSC firms with no visions were not studied.
2. Success-Failure Continuum model did not address pre-IPO harvesting.
3. The survey instrument question set was limited in scope.
4. Survey questions were limited to examining single contextual constraints.
5. The modest response rate (11.1%) begs the question; was the non-respondent population entirely represented in the Non-response Bias Test?

The design of this study focused on those firms which had a vision at some point during their pre-IPO period. The study estimated the percentage of firms with a vision at 96% of all VFSC firms. This implies VFSC firms without a vision represented 4% of VFSC firms. The study did not investigate the performance or behavior of this group of firms, some of which are known to have been Super-successes; R.M. Canady (personal communication, March 26, 2007).

Defining the results of *VC actions* as new or reconstituted entities on the Success-Failure Continuum at a different point in the time domain simplified the Start-up Universe for ease of analysis, but it masked the impact of founder's visions on firms

which encountered this experience and vice versa. A number of respondents commented to me their business strategies have become specifically oriented toward exploiting the opportunities presented by pre-IPO harvesting. This study's model did not address these meta-stable firm outcomes, and I found the literature to be very limited in the extent to which it addressed the reasons this strategy was gaining in popularity. The following list of questions represents a sampling of the types of research questions pre-IPO harvesting strategies might generate:

1. Is there a financial reason for pre-IPO harvesting?
2. Do pre-IPO harvesting strategies represent a restructuring or segmentation of the VC industry or something else?
3. Is VC or corporate risk management strategy or both driving the trend?
4. Does investment specialization influence pre-IPO harvesting?
5. What impact does pre-IPO harvesting have on VC industry profitability and return on investment (ROI) objectives?

The original survey instrument question set was truncated so as not to impose a burden on the respondents. Numerous additional questions related to the context surrounding this study's primary questions were identified, but they were not included in the survey instrument. The approximate 70% survey completion rate suggests future researchers in this subject area would be well advised to focus the scope of their investigations and limit the number and complexity of their survey questions.

Approximately 30% of survey respondents failed to complete the survey.

Analysis of the survey results focused on the research questions and null hypotheses. However, in several instances results from one statistical test, led to the

development of questions and corresponding null hypotheses that stimulated further interest and analysis. For illustrations of this form of progressive analysis please refer to pages 130 – 132 and pages 163 – 164. The analysis of the survey results could have been extended further to provide a more comprehensive analysis of VFSC performance; however, this was not done for expediency in completing this exploratory study. For example: Secondary research questions were limited to a single contextual constraint. Imposing additional contextual constraints or adding *granularity* to the research questions would have expanded the data set geometrically and could have yielded additional results of interest.

The modest response rate (8%) to the survey solicitation package, while in line with the historical response rates for the study's population (the NVCA membership), was somewhat disappointing (Wortman, 1986). The non-respondent survey sample size was also small (14 out of 300). The Non-response Bias Test results justified the combining of the two samples to achieve an overall 11.1% response rate, but the question of whether or not the remaining 88.9% of the total NVCA membership, which did not participate in the study, was represented by the non-respondent survey sample or the combined survey sample can not be unconditionally assumed. Additionally, because the NVCA membership's participation rate is typically in the 10% to 20% range (out of approximately 472 member firms), it is recommended that survey questions be constructed so that the need to pool response classifications is minimized. Questions designed to investigate differences in sample populations, which have a large number of possible answers (> 3 answers), are not recommended because the recorded frequencies

in contingency table cells have been shown to be inadequate to conduct statistical tests with much statistical power.

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APPENDIX A
Acronyms

Table 78

Acronyms Used in This Study

Acronym	Expanded Form	Contextual Meaning
α	Alpha	Critical Value for statistical tests.
APA	American Psychological Association	Organization that sets rules for publication of documents oriented towards the study and discussion of Psychology and Psychological matters.
BOD	Board of Directors	Group responsible for firm governance.
CEO	Chief Executive Officer	Firm executive with ultimate decision making authority.
<i>df</i>	Degrees of freedom	The number of elements not influenced by other elements in a statistical test.
GEM	Global Entrepreneurship Monitor	International organization whose charter is to monitor the status of entrepreneurship on a global scale.
Hx	Hypothesis x	Hypothesis number

(table continues)

Acronym	Expanded Form	Contextual Meaning
Ho	Null Hypothesis	The corollary (hypothesis) that suggests the opposite of alternative hypothesis in Statistics.
IPO	Initial Public Offering	Initial marketing and sale of a company's shares in a <i>public market</i> or on a <i>stock exchange</i> .
IRB	Internal Review Board	(Pepperdine) University Board established to ensure Human Subject Studies are conducted in a constructive and ethical fashion.
IRR	Internal Rate of Return	Financial term: Interest rate which equates the <i>present value of future returns</i> to the investment outlay. (Weston & Brigham, 1978).
<i>n</i>	Sample size	Size of the sample being studied.
nACH	Need Achievement Motive	Psychological term that defines the set of reasons for human achievement.

(table continues)

Acronym	Expanded Form	Contextual Meaning
NVCA	National Venture Capital Association	Industry trade organization representing and lobbying for the <i>Venture Capital</i> industry.
P	Probability Statistic	Statistic that measures the probability of an event.
p -value	p -value	Observed significance level of a statistical test.
$P(x)$	Probability of x	Chances of x occurring.
PI	Pioneer-Initiative Motive	Psychological term that defines the set of reasons for humans to take initiative and/or pioneer new areas of endeavor.
Rx	Research Question x	Research Question number
ROI	Return on Investment	Financial term: Present value of future returns divided by the amount invested (Weston & Brigham, 1978).
SD	Standard Deviation	Statistics concept and calculation.
t	t Statistic	Result of Student's t -Test.
VC	Venture Capital	Firms and/or money active in the creation of new business enterprises for the purposes of securing a return on the investment.

(table continues)

Acronym	Expanded Form	Contextual Meaning
VFSC	Venture Funded High Tech Start-up Companies	The subjects of this study. Companies started by NVCA member firms that are exclusively involved in High Tech enterprises.
x	Number Observed	Number of occurrences in a statistical test.
XYZ	Company name	Fictitious name used to conceal the identify of a company.
χ^2	Chi Square Statistic	Result of a Chi Square Statistical Test.
χ^2_c	χ^2 Test Critical Value	Chi Square Statistic which separates acceptance from rejection regions.
z	z Statistic	Result of Large Sample z -Test.

APPENDIX B
Definitions of Terms

1. Achievement Motive (nACH) In the study of Psychology, the reasons humans have to achieve.
2. Agglomeration Economics The coming into close proximity of the skilled or highly skilled professional workers required to support a type of industrial enterprise; e.g. the High-Tech Industry.
3. Angel Individual investor in one or more venture enterprises who is independently wealthy. This type of investor frequently provides initial or seed funding to a new enterprise.
4. Arbitrage The purchase of securities on one market for immediate resale on another in order to profit from a price discrepancy (Morris, 1975)
5. Change Agent Person or entity that leads, fosters or facilitates change.
6. Charismatic Leadership Leadership style characterized by a dominant persona, a strong desire to influence others, self-confidence and having a strong sense of one's own moral values. (Northouse, 2004)
7. Classification A distinguishable category or categorization that represents a clearly defined sub-set of a universal

set of all possible categories or categorizations of results.

8. Clearinghouse

Person whose responsibility it is to collect data from many independent sources and aggregate it for future analysis.

9. Coefficient of Stability

Statistical coefficient that measures the repeatability of test – retest measures. A high coefficient of stability approaches 1.00 (Huck, 2004).

10. Combined Survey & Non-respondent Sample

The aggregation of results from the survey and non-respondent samples.

11. Conceptual or Thought Pieces

Articles or publications that address theoretical or conceptual problems. These types of articles tend not to have empirical data.

12. Concurrent Transformative Strategy

Research Design Strategy in which the researcher uses a theoretical lens (In this study the lens represents the VC communities perspective.) as an overarching perspective within a design that contains both qualitative and quantitative data collected at the same time (Creswell, 2003).

13. Construct A systematic arrangement of ideas and/or concepts devised in the one's mind (Morris, 1975).
14. Construct Validity The degree to which a psychological or personality *construct* is valid in a statistical sense.
15. Content Validity The degree to which the various items in a survey or questionnaire collectively cover the material the instrument is supposed to cover (Huck, 2004).
16. Conversation Area A topic area in a field of study (usually new) that attracts academic and/or professional contributions in the form of published papers for the purpose of critiquing, debating, elaborating on, or contributing to the development of the field's theory and/or practice.
17. The Corridor Principle A networking behavior or construct whereby entrepreneurs create many avenues to new opportunities by discussing ideas with colleagues in informal environments.
18. Counts Frequencies of events.
19. Creative Destruction A term coined by Schumpeter to describe how new organizations with new technologies overcome established organizations, which in turn leads to a more robust and healthier economy.

33. Equilibrium Theory	Neo-classical micro-economic theory that contends that all markets for goods and services gravitate toward an equilibrium price at which only a nominal or no profit exists.
34. Expected Contingency Table Cell	Physical location of a test result (frequently a statistical test result) in a cross tabulation of two variables that represents the outcome of the intersection of the two variables.
35. Expected Counts	The average count or frequency.
36. Expected Distribution	The distribution that represents the average for the population under study.
37. Expected Value	The average value.
38. Exit	Withdrawal from an investment, usually in return for a monetary instrument.
39. Failure	A firm that for all intents and purposes has gone out of business, been abandoned and/or filed for Chapter 7 under the bankruptcy code.
40. Firesales	Sale of goods for a much smaller amount than was previously thought to be realizable.
41. Firm Outcome	Category of firm on the Success – Failure Continuum. One of the following: Super-successes, Successes, Projected Successes, Living Dead, or Failures.

42. Founder's Vision or Vision "a projection: an image projected into the future of the place the entrepreneur wants his products to occupy eventually on the market, and also an image of the type of enterprise needed to get there. In short, vision refers to where he wants to take his enterprise" (Filion, 1991, p. 28).
43. Future Returns Cash flows from an investment expected to be realized in future years.
44. Getting-A-Jump Starting on an activity before one would normally start in the normal course of business.
45. Gold Standard Standard against which all measures (of the same type of metric) can be compared.
46. Granularity Finer resolution of an object or concept achieved by elucidating elemental substructures that combine to comprise the object or concept under consideration.
47. Harvest The venture capitalist's act of recouping profits from their investments, usually in the form of taking a company public via an Initial Public Offering (IPO) of the firm's shares in one of the public (stock) markets.

48. High Growth A rate of growth, usually in terms of revenue, but can be in terms of profits and/or assets, that significantly exceeds the growth rate achieved by the majority of firms participating in a sector of an economy.
49. Hi PI In Psychology, a motive that leads to a desire to pioneer or initiate activities.
50. Human Action The notion that some people are alert to economic opportunities, and they will move quickly to take advantage of those opportunities when they are presented to them.
51. Hyper-growth Growth of an entrepreneurial enterprise that is so fast the management team can not acquire the skill set necessary to manage the growth in a controlled fashion.
52. Incubator An organization set up to encourage the formation on new enterprises to address emerging business opportunities.

53. Industrial Districts Geographic regions where whole industries consisting of customers, manufacturers and suppliers co-exist in a mutually beneficial way from the standpoints of technological awareness, transfer of know-how, communication of ideas and plans, ease of supply of material, and trust in the benefits of doing business together.
54. Informational Loci Points or nodes in an organization information network where information is accumulated and integrated, providing the opportunistic basis for establishing a new enterprise.
55. Initial or Seed Funding The first installment of capital used to support the establishment of a new enterprise.
56. Intentions Models Constructs of Entrepreneurs' plans and ideas used to study entrepreneurial behavior.
57. Internal rate of Return (IRR) Financial measure defined as the present value of future cash flows divided by the cost of the investment (Weston & Brigham, 1978).
58. Interval Scale A measurement scale that has a defined order and distance, but no origin.
59. Intrapreneur A member of an established firm who exhibits entrepreneurial behaviors, but who has no intention of leaving the established firm.

67. Living Dead Failures Living Dead firms which eventually fail plus firms projected to fail or *Losers* in Ruhnka et al.'s schema.
68. Living Dead Successes Living Dead firms that are eventually managed to Success; i.e. they manage to go public.
69. Locus of Control Personality *construct* referring to an individual's perception of the locus of events as determined by his/her behavior vs. fate, luck, or external circumstances (Associates, 2004).
70. Long Term Time horizon that businesses use for setting future objectives and goals. Its length varies depending on the amount of change or turbulence occurring in a business sector at a given point in time. Three to five years have recently been considered the norm in High Tech firms.
71. Low PI In Psychology, a motive description of individuals who are relatively less inclined to be pioneers or initiators.
72. Losers Firms that have either gone out of business, or firms, whose fate has not been decided, that are projected to go out of business by the VC in whose portfolio the pre-IPO firm resides.

73. Management The Board of Directors and the executive officers of a firm.
74. Marginal Survivor Firms that differ from *Failures* only from the “sheer determination and endurance of the managers of such firms” (Litvak & Maule, 1980, p. 72).
75. Market turbulence Economic environmental condition that occurs with “the changing composition of customers and their preferences towards various products (Parente, 1996).
76. Minor Change In this study, the combination of change-related classifications vision ‘sustained’ + vision ‘changed slightly’ + vision ‘disregarded slightly’.
77. Mission “Purposive system in a business entity that provides cohesiveness and the ability to plan in an integrated way” (Ackoff, 1981, p. 107).
78. Mixed method Research design type that employs both a quantitative element and a qualitative element.
79. Need to achieve (nACH) motive The emotion, desire or physiological need in some humans to achieve.

80. Near venture failure syndrome	A characterization of a phenomenon that tends to occur in start-up enterprises at one or more times, whereby most if not all new enterprises encounter one or more problems or issues that could potentially cause business failure.
81. Nominal scale	A measurement scale that has no order, distance, or origin; e.g. questions with only <i>yes</i> or <i>no</i> or digital (1 or 0) answers (Emory, 1980).
82. Non-respondent	In this study, an NVCA member who did not participate in the initial survey.
83. Non-respondent Population	In this study, the 413 NVCA members who chose not to participate in the initial survey.
84. Non-respondent Sample	In this study, the portion of the non-respondent population who chose to participate in the Non-response Bias Test.
85. Non-response Bias	The responses of a population of respondents is statistically significantly different than the responses of a non-respondent population.
86. Non-response Bias Test	Test conducted to determine whether or not a Non-response Bias exists.
87. Observed Distribution	In this study, the frequency of counts for a specific set of variable classifications tabulated

from the survey, the Non-response Bias Test, or the combination of the two.

88. Opportunity Structure

Contract, wherein an entrepreneur “operates as a decision maker, has identified an economic opportunity, and has marshaled the resources to address the opportunity” (Glade, 1967; as cited in Low & MacMillan, 1988, p. 150).

89. Ordinal Scale

A measurement scale that has order, but the distance between the scale measurements varies and there is no unique origin (Emory, 1980).

90. Organic solidarity

Deviant group behavior which enables deviants to garner access to resources they would not ordinarily have access to in society at large.

91. Participants

NVCA members who chose to participate in either the survey or the Non-response Bias Test. Equivalent to Respondents.

92. Pioneer Innovative (Pi) Motive

Emotion, desire or physiological need to explore and/or innovate.

93. Population

In Statistics the entire group being studied. In this study, the NVCA membership or where specifically designated, the non-respondent members of the NVCA membership.

94. Powerful Derived from the term, *statistical power*; a measure of how likely a *measure of association* is to be accurate in the *statistical* sense.
95. Present Value Financial term: The value of a future cash flow discounted by the cost of capital. The cost of capital is typically linked to an interest rate like the prime rate offered by a central bank, but it can be linked to an investor's minimum return required for an investment to be given consideration.
96. Private Equity (firms) Private sector or group of investors not associated with the public or government sectors of the economy; usually a loosely associated group of wealthy individual investors.
97. Protestant Work Ethic Weber's theory that the superior economic development of Northern countries was a direct result of Protestantism and its associated values of hard work, thrift, and desire for material advancement.
98. Projected Loser A pre-IPO firm, whose fate has not been decided, that is projected to be a business failure by the VC in whose portfolio the firm resides.

99. Projected Success	A pre-IPO firm, whose fate has not been decided, that is projected to be a <i>Success</i> or <i>Super-success</i> by the VC in whose portfolio the firm resides.
100. Pseudo-random	Almost completely random.
101. Pseudo-random Number Generator	A computer algorithm that produces a table of Pseudo-random numbers.
102. Public Markets	Legally constituted forum or market for buying and selling shares in firms and financial instruments that have met or exceeded the fiduciary standards required to participate in such markets.
103. Rate of Return	Financial measure defined as the present value of future cash flows divided by the cost of the investment (Weston & Brigham, 1978).
104. Ratio Scale	A measurement scale that has a defined order, distance, and a unique origin.
105. Reliable	Consistent in the statistical sense.
106. Reliability	A measure of an instrument's consistency from test to test.
107. Rents	See Economic rents.

108. Reorganization
Financial and legal term: Process whereby a firm's legal and financial standing is reconstituted in a fair and feasible fashion such that the firm can continue to conduct business usually in a scaled down or revised fashion.
109. Repositioning
The act of redefining, reconfiguring, or redesigning a product and/or the act of reassessing the product's target market, competition, market niche, or segment of the market the product is intended to address.
110. Respondents
Participants in this study's survey or Non-response Bias Test. Equivalent to participants.
111. Return on equity
Financial term. The *present value* of future cash flows divided by the *net worth* of a firm.
112. Risk
Uncertainty where the probability of potential outcomes can be calculated or insured against.
113. Significant Change
As it pertains to vision in this study, vision change classifications, vision 'changed completely' + vision 'disregarded completely' + vision 'changed somewhat' + vision 'disregarded somewhat'.
114. Silver Bullet
One precise answer to a question.

115. Spaghetti-like	A randomly distributed ad hoc or organic patchwork of ideas, constructs and theories that has no central core.
116. Statistical Power	Statistics Term. A measure of the likelihood of making the right decision from statistical test results.
117. Stock	Inventory
118. Strategic Vision	Vision that captures the strategic steps or actions required to realize a vision.
119. Stock exchange	Legally constituted forum or market for buying and selling shares in firms or other financial instruments.
120. Subjectivist	A subscriber to Subjectivism or an adherent to the view that individual feeling or apprehension is the ultimate criterion for the good and the right.
121. Success	Firm, whose fate has been decided, that has held a successful IPO.
122. Succession Event	A management change that results from the CEO resigning or being removed from office.
123. Supply	Micro-economic term used to describe how much of a product will be potentially manufactured by a supplier as a function of the product's market price.

124. Super-success A *Success*, as defined in definition 121 above, which venture capitalists (or investors) tout on their web-sites as examples of Success.
125. Survey Sample The members of the NVCA who chose to participate in this study's survey.
126. Swarms Clusters of companies that aggressively pursue related market opportunities that arise from time to time when economic and technological conditions are favorably aligned.
127. Threshold The amount of pain an entrepreneur is willing to suffer before he/she will quit working for his firm and take a job with an established firm.
128. Topics of interest Subject or conversation areas, usually current, that have acquired widespread interest from specific academic or professional communities.
129. True uncertainty Uncertainty in which the outcomes are unknown and unknowable.
130. Uncertainty See *Risk*.
131. U-shaped pattern A continuous graphic pattern in which the highest points are located at the beginning and the end of a graph of data, and a prolonged set of points approaching a minimum is located towards the middle of the graph.

132. Valid Statistical term meaning accuracy.
133. Validity (internal validity) The ability of a research instrument to measure what it is purported to measure (Emory, 1980).
134. Vision State In this study, one of the following vision-related classifications: Vision ‘changed completely’, vision ‘disregarded completely’, vision ‘changed somewhat’, vision ‘disregarded somewhat’, vision ‘changed slightly’, vision ‘disregarded slightly’, or vision ‘sustained’.
135. VC actions Managerial steps take by a VC to recover or salvage some portion of his/her investment in a VFSC. These managerial steps may take the form of a merger of firms, a sale of the firm to other investors, swaps or trades of shares for shares in other firms, or reorganizations to name a few of the options available to a VC.
136. Venture capital Investment funds invested in the formation of new enterprises in the expectation of realizing a significant *return* when the enterprise goes public.

137. Winners

Firms that are characterized as *Super-successes* or *Successes* if they have held an initial public offering of their shares, or firms characterized as *Projected Successes* by the VCs in whose portfolios they reside, if they have not yet held an initial public offering.

Title	Author(s)	Year	Contribution to Literature
Strategy			
Seminal Works			
1 Social structure and organizations	Stinchcombe	1965	Introduced "liability of newness" concept.
2 Competitive Strategy	Porter	1980	Success contingent on Sound Business Strategy
<i>New Venture Performance</i>			
1 Success among High Technology firms	Cooper & Bruno	1977	Characteristics of Silicon Valley start-ups in terms of success/failure rates. Study suggests large organization people are less likely to try to start firms, but more likely to succeed if they do start one.
2 Entrepreneurial success of failure: 10 years later	Litvak & Maule	1980	Longitudinal study of Canadian companies. Paper breaks performance down by marginal survivors, survivors & failures. Threshold firms are discussed. Failures are due to poor management.
3 Evolution of the characteristics of (High Tech) entrepreneurial firms	Doutraux	1984	Study of the characteristics of Ottawa based High Tech firms. Study reports survival rate data for Boston in the 60s, San Francisco in the 70s and Ottawa in the early 80s.
4 Crossing the chasm: Marketing and selling technology products to mainstream customers	Moore	1991	A guide to overcoming the obstacles presented to new products and technologies.

Legend:
 Light Shade - Vision related article; Dark Shade - Living Dead related article; Mixture of Dark and Light - Both

5	The "Living Dead" phenomenon in venture capital	Ruhnka, Feldman & Dean	1992	Statistics on how many firms get into this condition. Rates of return for VC companies. Process steps for getting out of this condition. Characteristics of "Living Dead" companies are described.
6	What makes a new business start-up successful?	Reid & Smith	2000	Pursuit of the highest rate of return is the only factor that impacts performance
7	Three strategies for managing fast growth	von Krogh & Cusumano	2001	The key to a long healthy corporate life is steady growth. A good growth plan captures the vision for expanding the company.
8	Inside the tornado: Strategies for developing, leveraging & surviving hyper-growth markets	Moore	2004	A marketing guide for dealing with products and technologies that have hyper-growth curves.

Factors Affecting New Venture Performance

1	Learning from Failure	Hil & Hlavacek	1977	Definition of business failure and reasons for it. Need for milestones is introduced & a four stage development process is developed along with 10 operating guidelines.
2	Operationalizing stage of growth: An empirical assessment of dominant problems	Kazanjan	1984	Study identifies a list of dominant problems at each stage of growth.
3	Patterns of failure among Silicon Valley firms	Bruno, Leidecker & Harder	1986	Longitudinal study of the factors causing failure in Silicon Valley firms. Concepts of "timing" and "market window" are introduced. Statistics on survival rates over time.
4	Opportunities & obstacles: A study of start-ups and their development	Olofsson, Petersson & Wahbin	1986	Study of the obstacles encountered by a craftsman driven start-up in the Swedish context.

Legend:

Light Shade - Vision related article; Dark Shade - Living Dead related article; Mixture of Dark and Light - Both

5	Sustaining the entrepreneurial vision in cooperative firms	Brown Jr.	1986	Discussion of how a trade school managed to sustain its vision of not having a bureaucracy.
6	Origins of successful start-up ventures	Neiswander & Drollinger	1986	A case study of the Cleveland area that highlights the importance of education, industries, backgrounds, critical success factors, needs, hurdles and performance metrics. Study states entrepreneurs don't need a Biz. Plan because their vision is so clear in their minds.
7	The effects of strategy and industrial structure on new venture performance	Sandberg & Hofer	1986	Study starts with a model $NVP = f(E, IS, S)$. Study recommends a of broad strategy early and a narrower strategy as the firm matures.
8	Field study of start-up ventures - Part II: Predicting initial success	Stuart & Abetti	1986	Study provides a definition for initial success, and a statistical study the factors that lead to success.
9	Improving new venture performance	Sandberg & Hofer	1987	Broader model for new venture performance: $NVP = f(E, IS, S)$
10	Strategic decision processes in Silicon Valley: The anatomy of a "Living Dead"	Bourgeois III & Eisenhardt	1987	Case study on how a simulated firm ended up being a "Living Dead" firm
11	Strategic Change: The effects of founding & history	Boeker	1989	Founding decisions leave an imprint on the organization. The study identifies four strategies: first mover, low cost producer, second mover & niche strategy. 3 factors may cause an organization to deviate from an entrenched or dominant strategy: organizational performance, environmental variation & organizational age.
12	Environments and Strategies of Organization Start-up: Effects on early start-up	Romanelli	1989	Two factors influence likelihood of survival: The extent of available resources in an environment affect the amount of resources available to a start-up. Organizational strategies influence the kinds and amounts of resources that will be acquired.

Legend:

Light Shade - Vision related article; Dark Shade - Living Dead related article; Mixture of Dark and Light - Both

13	Organizational Growth: Linking founding team, strategy, environment, and growth among U.S. Semiconductor ventures, 1978 - 1988	Eisenhardt & Schoonhoven	1990	Founding environment, strategy, and top management team have a significant impact on the resource levels and ultimately on growth of young firms. The founding strategy locks the young firm into a pattern of resource opportunities and consumption.
14	Initial human and financial capital as predictors of new venture performance	Cooper, Gimeno & Woo	1994	Study breaks down new ventures into failures, marginally successful and high growth firms. Study states factors like education, experience in a similar field, parents owned a firm, and proper financing increase a firm's chances of success.
15	A comparison of methods and sources of obtaining estimates of new venture performance	Brush & Vanderwerf	1992	Correlated NVP with archival data, revenue and competitors' views
16	Entrepreneurial Teams	Cooper & Daily	1997	Importance of management teams and their impact on new firm performance. Comparison with performance of single founder firms.
17	High growth transitions: Theoretical perspectives and suggested directions	Corvin & Slevin	1997	Determinants of growth, relationship between growth & complexity and its impact on management. Ideas to reduce complexity & competitiveness factors.
18	Survival of the fittest?: Entrepreneurial human capital and the persistence of underperforming firms	Gimeno, Folta, Cooper & Woo	1997	Study introduces the concept of a threshold above which a firm will not go out of business. Model takes into account costs of switching, psychic income and profits.
19	The determinants of new venture performance: An extended model	Chrisman, Bauerschmidt & Hofer	1998	Extension of Sandberg & Hofer to $NVP=f(E,IS, BS, R,OS)$
20	To agree or not to agree? Consensus and performance in new ventures	West III & Meyer	1998	Study shows a strong correlation between perceptions of superior performance and the presence of idea diversity within the top management team. This contrasts with the traditional view of new ventures being highly dependent on the founder's vision.

Legend:

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|----|--|----------------------------|------|---|
| 21 | An examination of the impact of initial founding conditions and decisions upon the performance of new bank start-ups | Bamford, Dean & McDougall | 1999 | Initial conditions & decisions significantly impact growth potential, but impact diminishes over time. |
| 22 | A quantitative content analysis of the characteristics of rapid-growth firms and their founders | Barringer, Jones & Neubaum | 2005 | The entrepreneurial story is important. Creating unique value leads to rapid growth. High growth firms do more training & they rely of different incentive systems. (options) Stresses the importance of having a growth-oriented vision and mission. |
| 23 | Lessons of the last bubble | Laseter, Kirsh & Goldfarb | 2007 | Presents several reasons for the Dotcom bust |

Resources & Capabilities in Competitive Advantage

- | | | | | |
|---|--|---------------------------|------|--|
| 1 | The theory of the growth of the firm | Penrose | 1959 | Diversification and Amalgamation contribute to Growth |
| 2 | A resource-based view of the firm | Wernerfelt | 1984 | Economic Tools for analyzing resource position & strategic options |
| 3 | Firm Resources and Sustained Competitive Advantage | Barney | 1991 | Links between sustainable competitive advantage and resources |
| 4 | Explaining the formation of international new ventures: The limits of theories from international business | McDougall, Shane & Oviatt | 1994 | New business ventures that seek to gain a significant competitive advantage by selling in many countries from the inception of the firm. Founders had a global vision. |

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|---|------------------------|--------------|------|---|
| 5 | The facts about growth | Zook & Allen | 1999 | Sustained and profitable growth are invariably a result of focusing on and growing the profitable core & then driving its greatest competitive advantage into adjacent areas around the core. |
|---|------------------------|--------------|------|---|

The Process of Venture Formation

Seminal Work

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|---|---|---------|------|--------------------------------------|
| 1 | A Conceptual Framework for Describing the Phenomenon of New Venture Formation | Gartner | 1985 | Behaviors not Traits should be Focus |
|---|---|---------|------|--------------------------------------|

Venture Finance

- | | | | | |
|---|--|--|------|--|
| 1 | Venture Capital at the crossroad | Bygrave & Timmons | 1992 | Structure & Growth of the VC industry and Trends for the Future |
| 2 | Aspects of financial contracting in venture capital | Sahlman | 1992 | How VCs structure their Financial Investments |
| 3 | Harvesting firm value: Processes and results | Petty | 1997 | Strategies, models and methodologies for harvesting VC funded firms. |
| 4 | Is it worth it? The rates of return from informal venture capital investments | Mason & Harrison | 2002 | IRR of angel and VC investments in new firms. Methods of harvesting. |
| 5 | Determinants of required return in venture capital investments: A five-country study | Manigart, De Waele, Wright, Robbie, Desbrieres, Sapienza & Beekman | 2002 | This paper discusses the rates of return required for early round and later round investments as a function of independent VC firm, Public firm or captive organization. |

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- 6 Bootstrapping in small firms: An empirical analysis of change over time Ebben & Johnson 2006 Bootstrapping is one way start-ups can finance their operations. The behavior changes over time as the firm acquires more assets and a reputation.

Venture Capital Roles & Practices

- 1 A model for venture capitalist investment activity Tyebjee & Bruno 1984 This paper models the deal flow for a VC investment. VC investment process, syndication & 5 dimensions for consideration.
- 2 Criteria used by venture capitalists venture proposals MacMillan, Siegel, & Subba Narishma 1985 Survey showed quality of entrepreneur dictates VC funding decision
- 3 The new ventures: Inside the high-stakes world of venture capital Wilson 1985 Book describes the inner workings of the venture capital community. It discusses deals, deal making, individual personalities, and the firms. First mention of "Living Dead" in the literature.
- 4 What do venture capitalists do? Gorman & Sahlman 1989 On avg. VCs monitor 9 firms & sit on 5 Boards. Contact time 110 hrs.
- 5 Factors affecting success and failure of seed capital/start-up negotiations Rea 1989 VCs pay attention to business factors before investing. Entrepreneurs tend to look at the viability of the new product. VCs believe critical success factors must be carefully planned if the promise of the entrepreneur's vision is to be realized.
- 6 Does venture capital foster the most promising entrepreneurial firms? Amit, Glosten & Muller 1990 Paper suggests VCs have to settle for weakest entrepreneurial firms
- 7 When do venture capitalists add value? Sapienza 1992 VCs with high levels of involvement reduce conflict; typical of High Tech

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8	Kleiner's Web	Moukheibler	1996	A study of how Kleiner Perkins invests in total industries to enhance the chances of all of their investments being successful.
9	Venture capitalist and CEO dismissal	Bruton, Fried & Hisrich	1997	CEO dismissal is usually a result of failing to deal with strategic concerns. The importance of vision is discussed in passing, and "Living Dead" is discussed as a condition not to end up in.
10	The informal venture capital market: The milestones passed & the road ahead	Freeear, Sohl & Wetzel	1997	Data on angel financing. Numbers of investments, revenues & number of investors.
11	Venture Capital: Reflections & Projections	Timmons	1997	Venture Capital Investment and trends. A model of the determinants of profitability is presented. An analysis of IRR and harvest periods is presented.
12	Venture Capitalists' assessment of new venture survival	Shepherd	1999	VC assessment policies are consistent with those proposed by strategy scholars
13	Qualifications and turnover of managers & venture capital-financed firm performance: An empirical study of German venture-capital investments	Schefczyk & Gerpott	2000	CEO Qualifications, firm performance and CEO removal. "Living Dead" are discussed in this context.
14	Signaling in venture capitalist-new venture team funding decisions: Does it indicate long term venture outcomes?	Busenitz, Fiet & Moesel	2005	Suggests entrepreneurs seeking VC money have poorer chances of success. "Living Dead" are discussed..
15	Human capital theory and venture strategy capital firms: Exploring "home runs" and strike outs"	Dimov & Shepherd	2005	Human capital is important in VC funding decisions, but this study showed conflicting results when it examined specific human capital in terms of ability to go public.

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|----|---|------------------|------|--|
| 16 | Venture capital investment and portfolio failure rate: A longitudinal study | Dimov & De Clerq | 2006 | Studies syndication and specialization within the VC community to reduce chances of failure. "Living Dead" are discussed in this context. |
| 17 | Survey says qualified management top concern | Rosenbloom | 2006 | Effect of Sarabanes-Oxley on VC access to directors. 75% of VCs surveyed say changing management teams has positive results. When management recognizes its limitations, things move much more smoothly. |

Networks

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|---|--|---------------------------|------|---|
| 1 | The role of networks in the entrepreneurial process | Birley | 1985 | Stresses the importance to entrepreneurs of family, friends & business contacts |
| 2 | Entrepreneurship through social networks | Aldrich & Zimmer | 1986 | Successful entrepreneurs have ties who provide timely accurate information |
| 3 | Entrepreneurship & Social Change | Greenfield & Strickon | 1986 | Book documents the effects of social networks on entrepreneurs and vice-versa. Trust is a significant factor in certain societies and leads to family members dominating business organizations. Institutional ties are important in these societies as well. |
| 4 | Network Dyads in Entrepreneurial Settings: A study of the Governance of Exchange Relationships | Larson | 1992 | Discussion of the influence & importance of social contracts vis-à-vis written contracts in small business networks. |
| 5 | Entrepreneurial orientation and networking: Some Indian evidence | Ramachandran & Ramnarayan | 1993 | High Pi (pioneer/innovative) entrepreneurs show greater interest in industry development and networking. Goals and visions of Hi Pi entrepreneurs are not limited by considerations of survival or money-making. |

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Innovation

1	Economic welfare and the allocation of resources for invention	Arrow	1962	Article discusses how uncertainty and risk combine to produce innovation. The effects of perfect competition and monopoly on pricing are discussed. The degree of difficulty in competing against intellectual property rights is discussed.
2	Issues in the creation of organizations: Initiation, innovation and institutionalization	Kimberly	1979	Short term innovative practices lead to success, but are incompatible with long term requirements for survival. Case study on a medical school dean's vision for an innovative branch of a large medical school. Initial success leads to bureaucratic and logistical issues common to large organizations.
3	Innovation in Small Firms	Acs & Audretsch	1990	Measures of innovation in small firms. Industry characteristics where small firms enter. Influence of technological change on small & large industry. Growth rates of small & large firms in turbulent markets are comparable. Market turbulence encourages small firms to innovate.
4	New-firm survival and the technological regime	Audretsch	1991	Study of how new ventures compete in mature industries. Innovation is the advantage.
5	Entrepreneurial heuristics: A comparison between high PI (Pioneering-innovative) and low PI ventures	Manimala	1992	Hi Pi orientation explains 50% of variance in innovativeness in 3 clusters of firm orientation. Identified 5 heuristics used by Hi PI oriented firms including vision orientation as opposed to opportunity orientation. Vision is one of five orientations or heuristics HI Pi organizations have.
6	Value innovation: The strategic logic of high growth	Kim & Mauborgne	1997	Innovation leads to high growth in new and mature markets. A growth-oriented vision ensures decisions are made with growth in mind.

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Entrepreneur as a Person

Seminal Work

1 The Achieving Society McClelland 1961 Achievement Motive drives Entrepreneurs

Psychological Dimensions

1 The enterprising man Collins, Moore & Unwalla 1964 Entrepreneurs & Managers are different in terms of views on authority & insight into the need for social skills.

2 Characteristics of successful entrepreneurs Hornaday & Aboud 1971 Comparisons of entrepreneurs with standardized groups of people

3 Discovery and the capitalist process Kirzner 1973 Entrepreneur is alert to opportunities in the marketplace. Shortages are best dealt with in a free market. Market manipulation is likely to have unintended consequences. Vision is important.

4 The effective entrepreneur Swayne & Tucker 1973 A study and analysis of entrepreneurs' traits. Step by step approach to a start-up.

5 Risk taking propensity of entrepreneurs Brockhaus 1980 Entrepreneurs are moderate risk takers. They like 50-50 chance situations.

6 The escalation of commitment to a course of action Staw 1981 Pathological setbacks often lead to renewed & more determined efforts to recoup losses.

7 The psychology of the entrepreneur Brockhaus 1982 High internal locus of control is common to managers & entrepreneurs.

8 The social dimensions of entrepreneurship Shapero & Sokol 1982 Dynamic framework of factors influencing entrepreneurs in new ventures.

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9 Problems in business start-up: The relationships among entrepreneurial skills and problem identification for different types of new ventures	Gartner	1984	8 archetypes of entrepreneurs are presented and what they bring to a start-up in terms of skills is presented. The article identifies what is learned on the job and what is supplied by partners and other employees. The article concludes with a discussion of the types of problems an entrepreneur is likely to encounter, and how he marshalls resources to address the problems.
10 Optimists and pessimists: 2994 entrepreneurs and their perceived chances of success	Cooper, Dunkelberg & Woo	1986	Entrepreneurs are overly optimistic. Article speculates on why entrepreneurs are overly optimistic.
11 Psychological characteristics associated with entrepreneurial performance	Begley & Boyd	1986	Comparison of the psychological characteristics of founders and non-founders. Founders score higher on need for achievement, risk-taking propensity, & tolerance for ambiguity. A relationship exists between internal locus of control and liquidity. Psychological factors linked to venture success are not supported by research.
12 The influence of risk-taking as a cognitive judgemental behavior of small business success	Peacock	1986	Study looks at success & failures in New Jersey. Study concludes there are no differences in cognitive ability between entrepreneurs and average individuals and little or no differences when it comes to risk-taking.
13 The relation of traits, competencies, motivation, strategy, and structure to venture growth.	Baum	1995	Study tries to correlate traits, skills, competencies, motivation, strategy and structure with venture growth trends. Study found direct relationships between venture growth and motivation variables. (vision-setting, goal setting & self-efficacy.)
14 Competing models of entrepreneurial intentions	Krueger, Reilly & Carsrud	2000	Comparison of Theory of Planned Behavior (TPB) and Shapero Entrepreneurship Event (SEE) models. SEE is reported slightly better for predicting entrepreneurial behavior. Intentions models may be good ways to study entrepreneurial behavior.

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- 15 Assessing founders to predict venture success: Lessons from psychologists and venture capital firms
Garman & Phillips 2006 Study suggests ways to assess whether an entrepreneur will be successful or not. Typologies of assessment include: Human capital, personality & character, Miner's typology, personal achiever, real manager, expert idea generator, emphatic super-salesperson. Entrepreneurial Quotient.

Factors Affecting Decision to Form a Firm

- 1 Who are the entrepreneurs ?
Liles 1974 Certain kinds of experience, influence, ambition and ability determine if an individual becomes an entrepreneur. Gazelles provide achievement and a large amount of satisfaction to owners. Competitive firms via innovation, flexibility and efficiency.
- 2 The urban quality of life and entrepreneurship
Pennings 1982 A good quality of life with economic and educational activity attracts new firm formation. Environmental and political activity does not.
- 3 Properties of emerging organizations
Katz & Gartner 1988 Emerging organizations can be identified by intentionality, resources, boundary and exchange.
- 4 Does money matter?: Wealth attainment as the motive for initiating growth-oriented technology ventures
Amit, MacCrimmon, Zietsma & Oesch 2001 Factors other than money are more important in the decision to initiate a firm. Vision, innovation, independence & challenge were more important factors.
- 5 Measuring emergence in the dynamics of new venture creation
Lichtenstein, Dooley & Lumpkin 2005 Longitudinal study of a nascent organization focusing on 3 modes of organizing: vision, strategic organizing & tactical organizing. An emergence event occurs when all 3 modes become active at the same time.

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6	A hubris theory of entrepreneurship	Hayward, Shepherd & Griffin	2006	Overconfidence drives economic prosperity via new venture formation and also slows economic development when new ventures fail. Overconfidence becomes more problematic under uncertain conditions. On the other hand, being overconfident can provide the impetus to succeed under duress.
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Leadership

1	Envisioning new business: How entrepreneurs perceive the benefits of visualization	Rockey	1986	Vision and visualization and how it applies to new venture formation. Visualization allows entrepreneurs to visualize negotiations and presentations, which enables them to prepare in advance. Vision enables strategic thinking, it can be motivational and it can enthuse employees with the energy to succeed.
2	Implementing entrepreneurial idea: The case for intention	Bird	1988	Entrepreneurial intentions, entrepreneurs' states of mind direct attention, experience, and action toward a business concept, set the form and direction of organizations at their inception.
3	Vision and relations: Elements for an entrepreneurial metamodel	Filion	1991	Vision is a guiding framework for some entrepreneurs
4	In order to grow, must the founder go: A comparison of performance between founder and non-founder managed high-growth manufacturing firms	Willard, Krueger & Feeser	1992	No significant differences in performance were found between founder-managed and professionally managed firms in this study.
5	Replacing the founder: Exploding the myth of the entrepreneur's disease	Rubenson & Gupta	1992	Business education and family ownership allow founders to stay in power longer. High early growth rates cause founder CEOs to be replaced.

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6	A longitudinal study of the relation of vision and vision communication to venture growth in entrepreneurial firms	Baum, Locke & Kirkpatrick	1998	Structural modeling confirmed vision attributes and vision content affect subsequent venture growth directly and through verbal and written communication
7	Built to scale	Salter	2000	High Tech firm Netigy: Every big decision supports vision for hypergrowth
8	CEO founder status and firm financial performance	Jayaraman, Khorana, Nellig & Covin	2000	Founder management has no main effect on stock returns over a 3-year holding period but firm size & age moderate CEO founder status-firm performance relationship.
9	A multi-dimensional model of venture growth	Baum, Locke & Smith	2001	Venture growth is function of CEO competency, motivation & firm's competitive strategy. The importance of vision as it relates to growth is discussed.
10	The entrepreneurial control imperative: A case study of Steria (1969 - 2000)	Abetti	2003	Case is an example of a firm sticking with its founder's vision and achieving long term success
11	The persistence of founder influence: Management, ownership, and performance effects at initial public offering	Nelson	2003	Particular firm-level arrangements of management and ownership correlate with the continued presence of the founder in a leading organizational role post start-up. Firms with founder CEOs exhibit tighter control over ownership & management to and through IPO. The founder's influence may persist long after he has left.
12	Factors influencing the choice between founder versus non-founder CEOs for IPO firms	Jain & Tabak	2007	Founder characteristics, governance structure, ownership structure and extent of VC influence determine if founder CEOs will remain at IPO. Founders with output-based experience & particularly R&D experience are more likely to be CEO at IPO. IPOs are a testament to the founder's vision.

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Predictors of Performance

Seminal Work

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|---|--|-------------------|------|--|
| 1 | The First Two Years: Problems of Small Firms Growth and Survival | Mayer & Goldstein | 1961 | Motivation, Background, Characteristics, & Resources influence the degree of success |
|---|--|-------------------|------|--|

Predictors

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|---|--|------------------------------------|------|---|
| 1 | Key success factors in high technology ventures | Maidique | 1984 | Study identifies a list of key factors to success. The study identifies a number of business issues that must be managed and it identifies desirable characteristics of founding team members and CEOs. Centralized decision making was a key factor. |
| 2 | Growing up big: Entrepreneurship and the creation of high potential | Timmons | 1984 | Presents a model for identifying good start-up opportunities. Characteristics of successful start-ups are discussed, and statistics on success rates of high potential firms. |
| 3 | Stumblers and stars in the management of rapid growth | Hambrick & Crozier | 1985 | Issues of rapid growth & overarching themes in successful firms including CEO's ability to envision the future, hiring for future, reinforce core vision, introduce systems as supplements to current processes, minimal hierarchy & employee stakeholders. |
| 4 | Organizations: Predicting contributions and survival | Reynolds | 1986 | Factors that can be used for predicting success in 4 upper mid-west states |
| 5 | Criteria distinguishing successful from unsuccessful ventures in the venture screening process | MacMillan, Zemann & Subbanarasimha | 1987 | Study identifies a number of predictors of success. Risk factors to be managed include management risk, investment risk, inexperience risk, cash out risk & viability risk. |
| 6 | Survival Chances of newly founded business organizations | Bruderl, Preisendorfer & Ziegler | 1992 | Human capital theory & organizational ecology: How they influence chances of organizational survival. Mortality processes. |

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| 7 | The entrepreneur and venture performance | Herron & Robinson | 1993 | Study presents a model for predicting venture performance based on 7 skills. The model attempts to elucidate how skills combined with strategy and industry structure lead to performance. |
| 8 | Growth of new technology-based firms: Which factors matter? | Almus & Nerlinger | 1999 | High Tech innovative firms grow faster and produce more and better jobs than non-innovative firms |

Structural & Economic Dependence Relationships

Seminal Works

- | | | | | |
|---|---------------------------------------|--------------------|------|--|
| 1 | Social structure of organizations | Stinchcombe | 1965 | Effect of social structure on rate of organization formation, correlation between time in history & the type of organization invented, relations of organizations to the use of violence in society, particularly violence and unrestricted competition in the political area, impact of organizational structures on social classes & the effect of presence or absence of organizations on the solidarity of command groups. |
| 2 | Markets and Hierarchies | Williamson | 1975 | Limits to Internal Organization as Firms grow |
| 3 | The External Control of Organizations | Pfeffer & Salancik | 1978 | Environmental constraints affect how organizations operate |

Structural & Economic Dependence Relationships

- | | | | | |
|---|--------------------------------------|--------|------|--|
| 1 | Entrepreneurship and economic theory | Baumol | 1968 | A brief treatise on the benefits of entrepreneurship identifying Knight and Schumpeter as the key contributors to entrepreneurship theory. |
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2	The Social Psychology of Organizing	Weick	1969	A theoretical study of why people organize. Organizing from the standpoint of dyads and systems communication. Organizing results from environmental change, enacting, selecting, and retaining with feedback and interlocking loops.
3	The entrepreneur	Casson	1982	Economist's view of how and where entrepreneurship fits into classical economics
4	Entrepreneurship and its impact: A report to the President	Regan & Mauer	1984	A presidential report on entrepreneurship and its contribution to job growth in the U.S.
5	The effect of firm formation on job creation in the U.S.	Kirchoff & Phillips	1988	Study showed how significant job creation by small firms was to the U.S. economy.
6	Entrepreneurship, management and the structure of payoffs	Baumol	1993	Book discusses how policy decisions can lead entrepreneurs to socially undesirable activities. Models for imitation and innovation are presented. Models show how competitors respond to innovation.
7	The entrepreneurship process	Reynolds & Whyte	1997	Brakes entrepreneurship into nascent, fledgling & growth stages. Finds that fast growth firms (8% of firms) produce 45% of jobs in a three state study.
8	Births and deaths of new firms	Kirchhoff & Acs	1997	International study on the births & deaths of new firms. A decision model for closing a business is presented.

Corporate Intrapreneurship

Seminal Work

1	The Rise and Fall of Corporate New Venture Decisions	Fast	1978	Entrepreneurial Spirit exists in Large Companies
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Intrapreneurship

1 Start-up business: A comparison of performances	Weiss	1981	A comparative study of venture funded start-ups with corporate start-ups. The venture funded firms performed better. Reasons for the difference in performance are presented
2 The Change Masters: Innovation & Entrepreneurship in the Corporation	Kanter	1983	Embrace change. Corporate innovation should be a total team endeavor.
3 A Process Model of Internal Corporate Venturing in the Diversified Major Firm	Burgelman	1983	Transformation in a corporate environment of R&D into new businesses. Model of how new organizational units developed around new businesses. Management & cultural issues arise in the type of environment intrapreneurship creates.

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APPENDIX D
New Conversation Areas
in Entrepreneurship Research

Title	Author(s)	Year	Contribution to Literature
Charismatic Leadership			
1 Toward a behavioral theory of charismatic leadership & vision	Conger & Kanungo	1987	Theoretical study of charismatic leadership. Future vision is key to leader acquiring visionary attribution. There are 4 variables upon which charismatic attribution is realized. Leaders are charismatic when vision is discrepant from the status quo, but within the latitude of acceptance of followers.
2 Organizational vision and visionary organizations	Collins & Porras	1991	Organizational vision is derived from mission, tangible images, beliefs, values guiding philosophies and purpose. Visionary companies have symbols and mottos in place. Authors recommend it is even better to have them in writing.
3 The motivational effects of charismatic leadership: A self-concept based theory	Shamir, House & Arthur	1993	Study discusses how charismatic leaders motivate followers through an ideological vision, and they recruit a passionate number of followers who share the values of the vision. High Tech firms are ideal candidates for this type of leadership.
4 Vision: How leaders develop it, share it, and sustain it.	Quigley	1994	Vision combined with operational excellence is required for success. Vision enables development of strong corporate culture which leads to competitive advantage. CEO's most important trait is to convey a strong sense of vision.
5 Structure and meaning of organization vision	Larwood, Falbe, Kriger & Miesing	1995	Complex study of vision and organizational leaders. Study found CEOs in fast moving companies have the clearest vision, communicate it most successfully, and have the best defined long term strategy. Coincidentally the vision has been in place for the shortest period of time.

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Entrepreneurship Frameworks, History & Data

1	A strategic management perspective on determinants of new venture success	Sandberg & Hofer	1982	History of Entrepreneurship from 1700 to 1982. Success & Failure rates. Discusses the importance of strategic thinking.
2	A unified framework, research typologies, & research prospectuses for the interface between entrepreneurs and small businesses	Wortman jr.	1986	Provides a theoretical typology for research in entrepreneurship and small business. Provides a listing of the authors, organization types, sample size, statistical method, issues studied and a summary of the findings.
3	Entrepreneurship: Past research and future challenges	Low & MacMillan	1988	Study looks at history of entrepreneurship and provides direction for future research.
4	Challenges to Theory Development in Entrepreneurship Research	Amit, Glostn & Muller	1993	Study looks at major challenges of entrepreneurship and provides direction for future research. Vision is a characteristic that may be essential to creating a successful new venture.
5	Entrepreneur's requisite areas of development: A survey of top executives in successful entrepreneurial firms	Hood & Young	1993	Entrepreneurial executives' input for a curriculum in Entrepreneurship.
6	Entrepreneurship research needs and issues	Sexton	1997	Seeks to provide direction for future research.
7	Databases for small business analysis	Phillips & Dennis Jr.	1997	Study documents useful databases for studying entrepreneurship and small business practices.
8	Relevance of entrepreneurship research	Hoy	1997	Article advocating for more practical research.

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|----|--|----------------------|------|---|
| 9 | Blinded by the Cites? Has there been progress in Entrepreneurship Research | Aldrich & Baker | 1997 | A study of the published literature on entrepreneurship, what types of studies have been done, the relevant journals, and future directions for research. |
| 10 | The promise of entrepreneurship as a field of research | Shane & Venkataraman | 2000 | Provides a conceptual framework for the field of entrepreneurship |
| 11 | Pioneers in Entrepreneurship and Small Business Research | Landstrom | 2005 | History of Entrepreneurship from 2005 back. |
| 12 | Entrepreneurship | Montanye | 2006 | Historical synopsis of entrepreneurship and entrepreneurs. |

Integrated Conversation Areas

New Venture Performance & VC Roles and Practices

- | | | | | |
|---|--|-------------------------------|------|--|
| 1 | Differing perceptions of new venture failure: A matched exploratory study of venture capitalists and entrepreneurs | Zacharakis, Meyer, & DeCastro | 1999 | Failure attribution and how it applies to VCs and entrepreneurs. Failures are due to management according to VCs. Most entrepreneurs attributed failure to internal problems. Failures of other firms were due to management problems according to entrepreneurs. Vision & Living Dead" are discussed. |
| 2 | Venture capitalists' expertise: A call for research into decision aids and cognitive feedback | Shepherd & Zacharakis | 2002 | This article develops a theoretical argument for the potential benefits of statistical decision aids and it proposes a research agenda. |

Founders, New Venture Performance & VC Roles & Practices

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|---|--|---------------------|------|---|
| 1 | Entrepreneurial Transitions: Factors influencing founder departure | Boeker & Karichalil | 2002 | Study focuses on reasons for founders' departures. Founder departure tends to follow a U-shaped pattern. Fast growth tends to cause earlier founder departure. Inside founder control leads to longer terms. R&D background also leads to longer terms. |
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Organization Theory & New Venture Performance

- 1 Structuring small firms for rapid growth Fombrun & Wally 1989 Study of how small firms design management control systems to facilitate rapid growth. The systems are not a burden, but provide the minimum controls to allow for controlled rapid growth.

Charismatic leadership & Strategic Management

- 1 Visionary leadership and strategic management Westley & Mintzberg 1989 Visionary leadership is defined. Strategic vision is dependent on followers and drama. Vision provokes an emotional response in its adherents. 5 leadership styles are presented.

Corporate Venturing & Vision

- 1 The birth and growth of Toshiba's laptop and notebook computers: A case study in Japanese corporate venturing Abetti 1997 Case study of how Ome factory general manager's vision drove entry into the laptop and notebook business despite lack of corporate support.

Founder Influences & Organization Theory

- 1 Building the iron cage: Determinants of managerial intensity during the early years of organizations Baron, Hamman & Burton 1999 Paper studies 6 typologies of organization: Star, engineering, bureaucracy, autocracy, commitment & aberrant. Study concludes changing structure leads to departures by senior management. Founders embed distinctive visions and values in enterprises and / or are conduits for economic, social or cultural forces.

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Founders versus Professional Managers

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|---|---|----------------|------|--|
| 1 | Financial performance of founder-managed versus professionally managed small corporations | Daily & Dalton | 1992 | Study focused on small firms (<500 employees & <\$20M). Study found there was no difference in the financial performance of these firms. Founders can acquire necessary skills to run a firm. |
| 2 | Founder-CEO succession and the paradox of entrepreneurial success | Wasserman | 2003 | Paper studies the effects of keeping or removing the CEO at or before IPO. Study concludes a very successful entrepreneur may have to give up his position in order for the IPO to go ahead. Some founders believe they are uniquely qualified to lead their companies. They are the ones with the vision. |

Networking & New Venture Performance

- | | | | | |
|---|---|----------|------|--|
| 1 | The corridor principle and the near failure syndrome: Why they have practical value for entrepreneurs | Ronstadt | 2006 | Corridor principle shows how entrepreneurs have many avenues to new opportunities. The near failure syndrome discusses how most start-ups go through periods where failure appears inevitable. |
|---|---|----------|------|--|

How to do Start-ups

- | | | | | |
|---|--|--------------------------|------|--|
| 1 | New Venture Strategies | Vesper | 1980 | A survey of ways to start a company. All types of firms are considered. Data on success and failure rates is presented. Author concludes innovations based on market need fare better than those driven by technological push. Gross margins and tax considerations are looked at. |
| 2 | Choice of organizational mode in new business development: Theory & propositions | Venkataraman & MacMillan | 1997 | Paper studies 3 modes of start-up and develops theories for why each one is used. |

Legend:

Light Shade - Vision related article; Dark Shade - Living Dead related article; Mixture of Dark and Light - Both

- | | | | | |
|---|--|---------------------------------------|------|--|
| 3 | New business ventures and the entrepreneur | Stevenson, Roberts, Grousbeck & Bhide | 1999 | Case studies on how to do a start-up. |
| 4 | High Tech Start-up | Nesheim | 2000 | Guide to starting a venture funded start-up. Covers formation process, legal issues, business plan preparation, team, ownership dilution, personal rewards, VCs, leasing capital, bankers, other sources of money, the IPO process and sources of venture capital. |

Academic involvement in Entrepreneurship

- | | | | | |
|---|--|---------------|------|---|
| 1 | Facilitating New Venture Development through market and design feasibility study | Long & Ohtani | 1986 | An MBA program was established to support entrepreneurship at the University of Calgary. The study evaluates the progress of the entrepreneurs. |
| 2 | Entrepreneurs in high technology: Lessons from MIT and beyond | Roberts | 1991 | A book that deals with starting, financing and growing high tech firms. It is focused on the Boston area and MIT's contribution to the number of new firms. |

Legend:

Light Shade - Vision related article; Dark Shade - Living Dead related article; Mixture of Dark and Light - Both

APPENDIX E
Distribution of "Vision" and "Living Dead" Articles by Conversation Area

Conversation Areas (Landstrom)	Vision	Living Dead
<i>Strategy</i>		
1 - New Venture Performance	1	2
2 - Factors Affecting New Venture Performance	4	2
3 - Resources & Capabilities in Competitive Advantage	1	
Sub-Total Strategy	6	4
<i>The Process of Venture Formation</i>		
4 - Venture Finance		
5 - Venture Capital Roles & Practices	2	5
6 - Networks	1	
7 - Innovation	3	
Sub-Total Process of Venture Formation	6	5
<i>Entrepreneur as a Person</i>		
8 - Psychological Dimensions	2	
9 - Factors Affecting Decision to Form a Firm	2	
10 - Leadership	9	
Sub-Total for Entrepreneur as a Person	13	0
11 <i>Predictors of Performance</i>	1	
12 <i>Structural & Economic Dependence Relationships</i>		
13 <i>Corporate Intrapreneurship</i>		
Total for all Conversation Areas (Landstrom)	26	9

	Living	
	Vision	Dead
New Conversation Areas		
1 <i>Charismatic Leadership</i>	5	
2 <i>Entrepreneurship Frameworks, History & Data</i>	1	
<i>Integrated Conversation Areas</i>		
3 - New Venture Performance & VC Roles and Practices	1	1
4 - Founders, New Venture Performance & VC Roles & Practices		
5 - Organization Theory & New Venture Performance		
6 - Charismatic Leadership & Strategic Management	1	
7 - Corporate Venturing & Vision	1	
8 - Founder Influences & Organization Theory	1	
9 - Founders versus Professional Managers	1	
10 - Networking and New Venture Performance		
Sub-Total for Integrated Conversation Areas	5	1
11 <i>How to do a Start-up</i>		
12 <i>Academic Involvement in Entrepreneurship</i>	1	
Total for all New Conversation Areas	12	1
<u>Grand Total for all Conversation Areas</u>	<u>38</u>	<u>10</u>

APPENDIX F
Survey Instrument Cover Letter

Mr. Thomas XYZ
Partner,
JKW Venture Capital Ltd.
4040 W. Easy Street
Baltimore, MD 20895

January 24, 2008

Dear Sir,

I am a doctoral candidate in Organization Change at Pepperdine University in Los Angeles, California. I am currently writing my dissertation on “The Founder’s Vision & Its Influence on the Outcomes of High Tech Start-up Companies;” a survey based study on the impact of sustaining, changing or disregarding the founder’s vision in Venture Funded High Tech Start-up Companies (VFSCs). My resume is attached for your review.

I am requesting your firm’s participation in a web-based survey. Your firm’s participation is key to insuring the survey findings are statistically valid. The survey is short, and it has been sent to all NCVA member firms. It can be accessed by going to the following web-site:
http://pepperdine.qualtrics.com/SE?SID=SV_eCFob6tpfILa5e&SVID=Prod. Just click the boxes that best represent your answers to the various questions, and type in any additional insights, comments, or thoughts you may have. Click the submit button (>>) in the bottom right corner of the survey and you are done.

Pepperdine University uses a formally constituted internal review board (IRB) to monitor all studies involving human participants. The IRB insures privacy and confidentiality are maintained and that the actions of any authorized researchers are consistent with national standards for human participant study. Individual data and information are compiled by the researcher in one cumulative file, and the results will be reported without any possibility of identifying people individually. The researcher will have access to all individual responses to the survey questionnaire and the cumulative data file. Consistent with IRB policy, please be advised that all survey information will be held in a secure location for a period of five years commencing on January 1, 2008.

The motivation for pursuing my dissertation topic comes as a direct result of the benefits I have realized and the struggles I have endured to achieve success in the high technology industry. I am a strong advocate for the Venture Capital industry and the social and economic benefits it has brought to my community. In a time of increasing competitiveness driven by the Global Economy, I see the U.S. Venture Capital industry as the foremost bulwark against economic decline, and it is my hope that my doctoral work will provide a managerial insight that will improve the financial performance and efficiency of the industry.

In short, the purpose of this study is to ascertain if a relationship exists between sustaining the founder’s vision and IPO success. Conversely, the study attempts to determine if changing or disregarding the founder’s vision increases the probability that a potentially successful firm will end up as a “Living Dead” company or worse.

I would like to close by extending my sincere thanks to you and your organization for participating in this survey. Should you choose to request a statistical summary of the survey data, it will be emailed to you after January, 2009. Also, if you have further concerns, or do not feel I have adequately addressed your questions, please contact my Dissertation Chair, Dr. Robert Canady at (310) 568-5600.

Sincerely,

Reggie Murray
Doctoral Candidate
Pepperdine University

APPENDIX G
Instructions for Responding to Survey Instrument

Survey Instructions

- 1) Please read the Backgrounder provided with your solicitation email-letter for a brief explanation of the rationale, purpose, and theory behind this survey instrument.
- 2) Review the list of definitions for terms used in the survey instrument. The terms are highlighted in **bold text**.
- 3) Go to the following website:
http://pepperdine.qualtrics.com/SE?SID=SV_eCFob6tpfIILa5e&SVID=Prod .
- 4) Click the selection that best represents your understanding of the answer to each of the survey questions.
- 5) Type in any requested answers, comments, or suggestions in the spaces provided.
- 6) Press the submit button (>>), located in the bottom right corner of the survey and you are done.
- 7) Please note: This survey engine contains three branches located at questions 6, 7 and 9. Should you click the *no* answer to questions 6 and 7; the survey engine will skip down to the last three questions. Should you click the *no* answer to question 9, you will skip to question 11. This has been done to make answering the survey as quick as possible and to facilitate analysis of the survey results.

APPENDIX H
Survey Instrument Backgrounder

The Doctoral Dissertation for which this survey instrument is being used to gather data theorizes that at any given point in time the universe of all Venture Funded High Tech Start-up Companies (VFSCs) lies along a Success – Failure continuum. Figure 2 graphically displays this continuum:

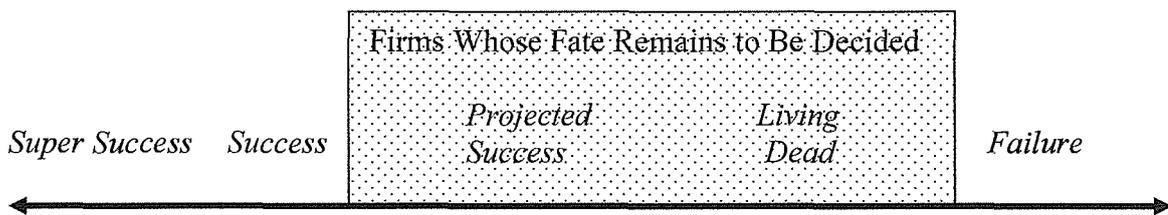


Figure 2: VFSC Success – Failure Continuum (R. Murray 2007).

For ease of analysis, five categories of firm have been defined. These five categories can be further segmented into a grouping that consists of all firms which have had their fate decided, (Super-successes, Successes and Failures) and a grouping in which the firm's(s') fate has yet to be decided (Projected Successes and Living Dead). Please refer to the Definitions List provided with your solicitation letter for a specific definition for each of the five categories of VFSC. The five categories of firms (used in this study) have been selected because there is precedent for their use in the entrepreneurship literature, and their constructs have been determined to be useful in describing the status of start-up companies with the VC community (Ruhnka et al., 1992).

APPENDIX I
Pilot Study & Survey List of Definitions

The following list of definitions should be used in conjunction with your response to the Pilot Study and / or the Survey:

- 1) **VFSCs** are defined as Venture Funded High Technology Start-up Companies. This classification pertains only to those firms which have been founded by Venture Capital Firms, and whose mission is to participate in industries collectively identified as High Technology. For example: Computer, Networking, Bio-Technology, Communications, Software, Technology Related Energy Sources and Devices, etc.
- 2) **Vision** is defined as “a projection: an image projected into the future of the place the entrepreneur wants his products to occupy eventually on the market, and also an image of the type of enterprise needed to get there (Filion 1991).”
- 3) **Super-successes** are defined as VFSCs, which have had such a successful IPO as to merit annotation on the Venture Capital firm’s web-site.
- 4) **Successes** are defined as VFSCs, which have held a successful IPO, but they are not **Super-successes** as defined above.
- 5) **Failures** are defined as those firms which have for all intents and purposes have gone out of business, been abandoned and/or filed for Chapter 7 under the bankruptcy code.
- 6) **Projected Successes** are those pre-IPO firms currently in a VC firm’s portfolio, which are projected to have a successful IPO at a minimum.
- 7) **“Living Dead”** firm is defined as “they have very poor prospects for producing a successful exit or harvest (Petty, 1997) for their investors, usually because of more limited growth than originally anticipated or inadequate profitability (Ruhnka et al., 1992),” or the firm is currently projected to fail. For purposes of this survey, these firms must still reside in the VC’s portfolio of active firms.
- 8) **Succession event** is defined as the departure (for any reason) and replacement of the founding CEO during the pre-IPO period.
- 9) **Valued by the Board of Directors & Executive Officers** means each member of the Board and the firm’s Executive Officers fully understood the firm’s vision and a consensus existed among them about the value the vision provided for the firm.
- 10) **Pre-IPO period** is defined as the period from the date the VFSC firm acquired a business license to the date the firm held a successful initial public offering.
- 11) **Disregarded or ignored** means no longer referred to, forgotten, ignored and / or not used in the conduct of the business.

APPENDIX J
Resume

Reginald J. Murray

Address: 3403 Wheeling Drive, Santa Clara, CA 95051
Telephone: Home (408) 243-4656 Cell (408) 206-6409
Email: Reggiemurray@Comcast.net
Education: Doctoral Candidate in Organization Change, Pepperdine University, 2003 - present, Graduation date: June 2008
M.B.A., Pepperdine University, 1982
B.S.E.E. (Solid State & Quantum Electronics), U.C.L.A., 1977

Experience:

2007 - Present Kona Kai Swim and Racquet Club

Treasurer & Member of Board of Directors

- Responsible for short and long term financial planning of social club.

2005 - 2006 Christina Noble Children's Foundation, Ireland

Interim CEO

- Managed NGO through period of turmoil caused by serious public relations & internal staff issues.
- Stabilized & restructured organization to provide necessary cash flow for the foundation's fully dependent recipient organizations in Vietnam & Mongolia.
- Directed & successfully ran 3 profitable major fund raising events during tenure.
- Established internal control systems to accommodate external auditors and new government regulation requirements.
- Interviewed, hired, and successfully transitioned replacement into the organization.

1998 - 2003 Marvell Semiconductor, Sunnyvale, CA

Director of Marketing, Pre-amp Products

- Successfully redefined & launched industry's first CMOS pre-amplifier product line.
- Grew revenue stream from \$0 to \$60M per year
- Expanded customer base from 0 to 4 large OEMs including Seagate, Maxtor, Samsung, & Hitachi
- Captured 15% Market Share (#2 player)
- Contributed 10% of company revenues & 35% of company profits
- Redefined product architecture to increase SAM from 30% to 70% of TAM

1995 - 1998 Philips Semiconductors, Sunnyvale, CA

Worldwide Marketing Manager, Mass Storage Product Group

- Responsible for worldwide Mass Storage Marketing
- More than doubled revenue from \$50M to \$120M
 - Revenue increase resulted in first profitable year for Product Group.
- Established Philips as a supplier at all major independent HDD companies
 - Penetrated all top tier Japanese accounts.

1991 - 1995 MiniStor Peripherals Corporation, San Jose, CA

Program Director

- Founder of venture funded 1.8-inch Hard Disc Drive company
 - Company held successful IPO
- Responsible for Business Plan, Program Management, Heads & Media Engineering, Printed Circuit Board Design, Document Control, Materials Organization
- Represented company on IEEE Small Form Factor Standards Committee
 - Guided committee acceptance of MiniStor Form Factor as the industry standard for PCMCIA Type III memory cards
- Managed 10 engineers and technicians including 3 first level managers
- Managed Materials staff of 9 including purchasing, material planning, production control & shipping and receiving.
- Member of Executive Staff

1987 - 1991 Maxtor Corporation, San Jose, CA

1990 - 1991 Program Director, LXT-200 Products

- Responsible for P&L of LXT-200 Product Line
 - Product generated \$400M in revenue per year

1987 - 1990 Program Manager, LXT-200 Products

- Managed development and transfer to manufacturing in Singapore of LXT-200 product line
 - Company's first 3.5 - inch Disc Drive
- Managed organization of 32 technical staff, 20 operations personnel, & 6 managers

1979 - 1987 Memorex Corporation, Santa Clara, CA

1985 - 1987 Expatriate Assignment, London, England
Program Manager, Mid-range Printer Products

- Managed successful introduction of 3 black & white and color printers into IBM 3270 market place
- Managed engineering teams in Sweden, Denmark, Belgium & England

1982 - 1985 Program Manger 3680 Programs

- Responsible for planning and managing supply of 3680 recording heads, discs & test equipment

1979 - 1982 Thin Film Head Development Engineer

- Responsible for recording head design & process development, clean room facility design, construction & start-up

1978 - 1979 Teledyne MEC, Palo Alto, CA

Thin Film Process Engineer

- R & D engineer responsible for design, development & transfer to manufacturing of GaAs transistors & microwave integrated circuits

Patents: (2) Patents Pending

Trademarks: (1) awarded

Languages: Read, write & speak German, French & Dutch

Professional I.E.E.E., Magnetics Society

Affiliations: American Vacuum Society

APPENDIX K
Reference Letter



Park Office
and Hill Road
Palo Alto, CA 94303
650-231-2750
650-231-6260
kpbc.com

rs
1 River
Demotion
Down
but
not
Kleiner
Perkins
Caufield
& Byers
100
California
Avenue
Menlo Park
CA 94025
650-231-2750
650-231-6260
kpbc.com

ed Partners
L. Compton
R. Heard III
D. Hoyle
S. J. Mackenzie

Principal Officer
W. Hight

rs Emeritus
C. Caufield
E. Krumm
J. J. Larrabee
V. J. Pritzker

San Francisco Office
100 California Center
600
San Francisco, CA 94111
415-421-5110
415-421-5120

February 12, 2008

Dear Fellow Member of the NVCA,

With this letter, I would like to introduce Reggie Murray, a Silicon Valley entrepreneur who I had the pleasure of working with in one of my Kleiner Perkins Caufield & Byers companies. Reggie is now working on a Doctoral thesis and studying the subject of how our entrepreneurial companies succeed or fail with an emphasis on the role the Founder's Vision plays in that outcome. He has attached a survey to this letter which he would appreciate your taking some of your precious time to complete. I know what I do with most surveys I receive but urge you to take some time to inform Reggie. He is a real entrepreneur, has worked in a number of start-ups, and, I believe, will contribute to the literature about our Venture Capital industry with this study/thesis.

I appreciate your consideration and hope you find the exercise and the result rewarding.

Very truly yours,

E. Floyd Kvamme

APPENDIX L
Memorandum of Informed Consent

Consent for Research Study

March 19, 2008

Ref: The Founder's Vision and Its Influence on the Outcomes of High Tech Start-up Companies

Participating NVCA Members:

The purpose of this memorandum is to appraise you of some of the details of the referenced study and your rights as a participant in it. You will not be asked to sign this memorandum or a Letter of Informed Consent as the Pepperdine University Internal Review Board (IRB) has approved a waiver for the Documentation of Informed Consent for this study.

The study is being conducted by Reggie Murray, a doctoral candidate, in the Graduate School of Education and Psychology at Pepperdine University. Pepperdine is located in Los Angeles, California. The study is a Doctoral Dissertation, and it is being conducted under the supervision of Dr. Robert M. Canady, D.B.A. and a committee of Pepperdine faculty members.

The purpose of this study is to ascertain to what degree sustaining, changing or disregarding the Founder's(s') vision during the pre-IPO (Initial Public Offering) period has on the outcomes of firms in two distinct periods of time. The two periods are when the firm's fate has been decided, and when the firm's fate has yet to be decided. The three potential outcomes for the period when the firm's fate has been decided are a Success, a Super-Success or a Failure. The two potential outcomes for the period when the firm's fate remains to be decided are a Projected Success or a Living Dead. Additionally, the study seeks to assess the impact on VFSC outcomes of several potentially influential events or situations not the least of which is a Succession Event. The study surveys experienced Venture Capital investment professionals, selected by the principal researcher, who are members of the National Venture Capital Association (NVCA). Please refer to the definitions list for a precise definition of the key terms used in this memorandum.

The duration of this study is expected to be from one to two months starting in April 2008. The survey period will be two weeks. A follow-up survey of non-respondents will be conducted one week following the initial two week survey period. The duration of the follow-up survey of non-respondents is expected to be two to four weeks in duration.

The procedures for conducting the survey are as follows:

- A list of suitable candidates from most of the NVCA member firms has been selected from the NVCA membership online directory by the principal researcher.
- A survey instrument has been developed by the researcher in conjunction with his dissertation committee.
- A solicitation package which contains an introductory letter, a cover letter, a list of definitions, a backgrounder, instructions for taking the survey and this informed consent memorandum has been prepared for electronic distribution. A link to the survey instrument is provided in the solicitation cover letter.
- The survey instrument will be distributed to the candidate participants once the Pepperdine IRB has approved the research study.
- Candidate participants are being asked to respond to the survey in the two week period after the distribution of the solicitation package.
- At the end of the two week period, the survey will be effectively closed.

- One week later, the principal researcher will begin contacting non-respondents to determine their interest in participating in a non-response bias test. A complete solicitation package will be retransmitted to those non-respondents, who agree to participate in the non-response bias test on request.
- A pseudo random number generator will be used to sequence the order of contact to the non-respondents.
- The principal researcher will continue to contact non-respondents until such time as the number of non-respondents, who agree to participate in the non-response bias test, equals the number on respondents (to the initial survey solicitation), the population of non-respondents, who agree to participate in the non-response bias test, is large enough to allow statistically significant comparisons with the respondent population, or until the population of non-respondents have all been contacted. It is expected this effort will take from two to four weeks.
- Once all the requested data has been acquired (recorded on survey engine), analysis of the data will performed to determine if statistically significant differences between the outcomes (that are reported on) and their respective vision states (sustained, changed, or disregarded) can be discerned.
- The results will be presented to the Dissertation Committee as part of the principal researcher's final defense of his dissertation.
- Assuming the results are determined to be suitable for publication, a statistical summary of the findings will be distributed to those respondents and non-respondents, who participate in the non-response bias test, who request a copy of the results on the survey instrument.

The risks, identified by the principal researcher, a respondent may be exposed to by participating in this study are as follows:

- Accidental disclosure of sensitive or proprietary information may occur, which could have adverse financial, reputational or competitive consequences. The level of risk has been assessed as very low by the principal researcher, because of the data handling procedures that are being employed. The Pepperdine IRB has been provided with a plan for maintaining privacy and confidentiality by the principal researcher.

The realizable benefits from this study are expected to be as follows:

- This study seeks to provide insight into how the Founder's(s') vision influences the outcomes of Venture Funded start-up companies. It is hoped the study will provide senior management teams of Venture Funded firms with a managerial tool or tools that will enable them to improve the success rate of Venture Funded Start-up Companies (VFSCs).
- Improving the success rate of VFSCs should lead to an improved economic climate at both the state and federal levels, it should enhance the creation of high paying jobs, and it should make the venture industry more efficient in terms of its utilization of capital.

It should be noted that participants may not directly benefit from this study.

The following procedures have been put in place to insure the privacy and confidentiality of the participants have been adequately addressed:

- All survey submittals will be stored on a secured server using password protected files. The passwords will be known only to the principle investigator and his committee chair. There will be traceability to the participant in this file if and only if the participant agrees to provide his/her and his/her firm's name. (That information is requested, but it is not mandatory to participate in the survey.)
- Individual files will be aggregated into a format suitable for statistical analysis by a computer application program whose source code is not available to the public. The raw data will be saved

in a password protected file on a secure server. The firm that provides the aggregation service (Pepperdine-Qualtrics) is contractually obligated to insure the privacy and confidentiality of all data that has been placed on its server.

- Statistical tests will be performed on the raw data using licensed software packages. The output of the statistical packages will be stored in a password protected file on a secure server.
- Statistical results or findings will be distributed to those participants who request the results or findings via email and/or mail depending on their wishes.
- Statistical results or findings will be available for review by the public in the dissertation that is published. No traceability to the participants or their firms will be possible.
- All password protected files will be stored on a secure server for a period of five years. At that point, all the files will be erased.
- The password protected files, other than the statistical results, will not be made available to third parties.

No compensation is offered for participating in this study. All respondents may request a summary of the findings of the study when they are available and authorized for publication by the principal researcher's dissertation committee. The findings are expected to be available in 2008.

No compensation is offered for injury, be it financial, reputational or competitive, as a result of accidental disclosure of information (to third parties) provided in survey responses and /or all other forms of communication between the participant and the principal researcher, his dissertation chair, his dissertation committee and/or the IRB chairperson.

Should you have any concerns about the study or your rights as a participant, or if you do not feel your questions have been adequately addressed, please feel free to contact the principal researcher, Reggie Murray, at Reggiemurray@comcast.net, or contact his Dissertation Chair, Dr. Robert Canady at (310) 568-5600. Questions regarding your rights as a participant may also be directly submitted to the IRB Chairperson, Dr. Stephanie Woo at the following address:

Dr. Stephanie Woo
Chairperson,
Graduate and Professional Schools Internal Review Board
Graduate School of Education and Psychology
6100 Center Drive, 5th Floor
Los Angeles, CA 90045
Swoo@pepperdine.edu

Participation in this study is completely voluntary. You have the right to withdraw or refuse participation at any time. Refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled.

Sincerely,

Reggie Murray
Doctoral Candidate
Pepperdine University

APPENDIX M
Survey Worksheet

Survey
Quest.

3	Years of Experience (in the VC industry)	1-3 Yr.s	4-10 Yr.s	11-20 Yr.s	> 20 Yr.s
---	--	----------	-----------	------------	-----------

5	Do you believe Venture Funded High Tech Start-up Companies (VFSCs) need a vision?	Strongly Believe	Believe	No Feeling One Way or the Other	Do not Believe	Strongly Disbelieve
---	---	------------------	---------	---------------------------------	----------------	---------------------

8	If the answer to the previous question is yes, please identify the categories of firms (for which you have been a Board member or executive officer) on which you are reporting.	Super - success	Success	Projected Success	Living Dead	Failure
---	--	-----------------	---------	-------------------	-------------	---------

9	During the Pre-IPO period, did a succession event occur in any of the firms on which you have in mind to report?	Yes	No
---	--	-----	----

10	If the answer to the previous question is yes, in which categories of firms did a succession event occur?	Super - success	Success	Projected Success	Living Dead	Failure
----	---	-----------------	---------	-------------------	-------------	---------

11	In the firms you have in mind to use to respond to this survey, did the founder have a vision for his firm?	Super - success	Success	Projected Success	Living Dead	Failure
		Very Clear Vision	Success	Very Clear Vision	Very Clear Vision	Very Clear Vision
		Somewhat Clear Vision	Success	Somewhat Clear Vision	Somewhat Clear Vision	Somewhat Clear Vision
		Unclear Vision	Success	Unclear Vision	Unclear Vision	Unclear Vision
		Very Unclear Vision	Success	Very Unclear Vision	Very Unclear Vision	Very Unclear Vision
		No Vision	Success	No Vision	No Vision	No Vision
		Very Clear Vision	Success	Very Clear Vision	Very Clear Vision	Very Clear Vision
		Somewhat Clear Vision	Success	Somewhat Clear Vision	Somewhat Clear Vision	Somewhat Clear Vision
		Unclear Vision	Success	Unclear Vision	Unclear Vision	Unclear Vision
		Very Unclear Vision	Success	Very Unclear Vision	Very Unclear Vision	Very Unclear Vision
		No Vision	Success	No Vision	No Vision	No Vision

This survey instrument is the property of Reggie Murray. Unauthorized copying or use of it without the expressed written authorization of the owner is prohibited.

12	Was the founder's vision valued by the Board and the Executive Officers?	Super - success	Success	Projected Success	Living Dead	Failure
		Highly Valued	Highly Valued	Highly Valued	Highly Valued	Highly Valued
		Somewhat Valued	Somewhat Valued	Somewhat Valued	Somewhat Valued	Somewhat Valued
		Not Valued	Not Valued	Not Valued	Not Valued	Not Valued
		Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
		(No Vision)	(No Vision)	(No Vision)	(No Vision)	(No Vision)

13	Was the vision articulated in writing? If any of the firms you have in mind to report on have no vision, please select Not Applicable.	Super - success	Success	Projected Success	Living Dead	Failure
		Yes	Yes	Yes	Yes	Yes
		No	No	No	No	No
		Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
		(No Vision)	(No Vision)	(No Vision)	(No Vision)	(No Vision)

14	If the firms you have in mind to use to respond to this question have a vision, does the founder's vision conform to the definition for a vision provided in the definitions list. If any of the firms you have in mind report on have no vision, please select Not Applicable	Super - success	Success	Projected Success	Living Dead	Failure
		Largely Conforms	Largely Conforms	Largely Conforms	Largely Conforms	Largely Conforms
		Somewhat Conforms	Somewhat Conforms	Somewhat Conforms	Somewhat Conforms	Somewhat Conforms
		Does not Conform	Does not Conform	Does not Conform	Does not Conform	Does not Conform
		Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
		(No Vision)	(No Vision)	(No Vision)	(No Vision)	(No Vision)

This survey instrument is the property of Reggie Murray. Unauthorized copying or use of it without the expressed written authorization of the owner is prohibited.

For the firms you have in mind to use to respond to this survey, which did not sustain the original founder's vision throughout the Pre-IPO period, to what degree was the founder's vision changed or disregarded?

15	Super - success	Success	Projected Success	Living Dead	Failure
	Vision Changed Completely	Vision Changed Completely	Vision Changed Completely	Vision Changed Completely	Vision Changed Completely
	Vision Disregarded Completely	Vision Disregarded Completely	Vision Disregarded Completely	Vision Disregarded Completely	Vision Disregarded Completely
	Vision Changed Somewhat	Vision Changed Somewhat	Vision Changed Somewhat	Vision Changed Somewhat	Vision Changed Somewhat
	Vision Disregarded Somewhat	Vision Disregarded Somewhat	Vision Disregarded Somewhat	Vision Disregarded Somewhat	Vision Disregarded Somewhat
	Vision Changed Slightly	Vision Changed Slightly	Vision Changed Slightly	Vision Changed Slightly	Vision Changed Slightly
	Vision Disregarded Slightly	Vision Disregarded Slightly	Vision Disregarded Slightly	Vision Disregarded Slightly	Vision Disregarded Slightly

16 whose fate has been determined, are characterized as Super-
 Super - successes Successes Failures

_____ % _____ % _____ % Sum should = 100%

17 firms in actively managed VC portfolios, whose fate has not been decided, are characterized as
 Projected Successes Living Dead

_____ % _____ % Sum should = 100%

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APPENDIX N
Survey Follow-up Solicitation Email

Dear NVCA Member,

I have not received your response to my request for participation in my dissertation research survey. The responses I have received to date have been of a very high quality, but I still need a larger sampling to be able to make statistical inferences. Please take a few minutes to participate in the survey. Test results to date indicate the survey takes between three and ten minutes to complete. The survey may be taken at the following web-site:

http://pepperdine.qualtrics.com/SE?SID=SV_5akjdYWq3WOIggk&SVID=Prod

Either click on the above URL or copy it to your browser. You will be taken straight to the survey instrument.

Thank you in advance for your participation.

Sincerely,

Reggie Murray
Doctoral Candidate
Pepperdine University

APPENDIX O

Survey Instrument

Survey | Qualtrics Survey Software

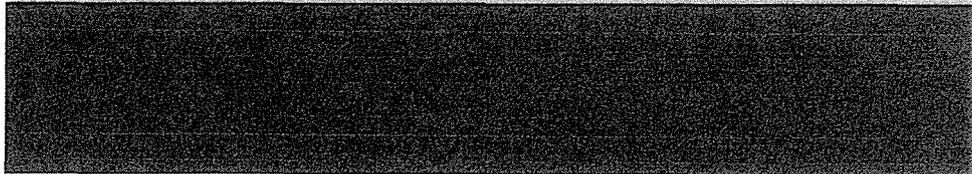


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[Click Here to Start Over](#)

Previewing Survey

For questions regarding the definitions of terms used in this survey instrument, please refer to the definitions list you received with the solicitation email-letter. Should you have questions regarding the purpose, objectives or design of this survey, please refer to the backgrounder provided with the solicitation email-letter. Both documents are available via email by sending an email request to eggiemurray@comcast.net. Please feel free to send any other questions or comments you may have as well. Thank you.

Respondents please note: Completion of this survey indicates you have read the cover letter that accompanied instructions for completing the survey and understand and agree to the terms of participation in the study.



Survey respondents,

Thank you for accessing this survey instrument developed to explore the relationship between the Founder's vision and its influence on the outcomes of Venture Funded High Tech Start-up Companies (VFSCs).

Before you begin the survey, please note the following:

You are being asked to report on only one firm in each of the categories of firms on which you choose to report. For example: Suppose you choose to report on the following categories of firms, a Super-success, a Success and a Living Dead firm. Select only one firm from each of those three categories and report on the three. This study defines five categories of firm, so the maximum number of companies on which you should report is five. If you feel comfortable with reporting on only one firm in one category of firms, that is perfectly acceptable for purposes of this study.

There are 21 questions in this survey. The time required to take this survey is estimated to be between five and ten minutes. A Pilot Study conducted using this survey instrument revealed that it may be helpful to print out the 'Definitions List', 'Backgrounder', and 'Survey Worksheet' prior to taking the survey.

Most of the questions in this survey are multiple choice. To answer these questions, just click on the appropriate circle or box presented to you below the question. Some questions

http://new.qualtrics.com/SF/?SID=SV_5akidYWa3W0Iok&SVID=Prod&Preview=Survey&RandID=pepperdine (1 of 4) 11/17/2008 6:29:21 AM

require written text responses. These can be recognized by a rectangular shape immediately below the question. Click inside the rectangular shape to position your cursor and then type in your response.

You may choose to review or change your responses by scrolling back and forth using the scroll bar to the right of the survey. A survey worksheet has been provided in your email solicitation package to assist you with keeping track of your answers and to help you maintain consistency within the categories of firms on which you are reporting.

The amount of progress through the survey can be determined at any time by looking at the rectangular progress icon at the bottom of each block of questions.

There are three blocks of questions in this survey. Press the << button at the bottom of a block to move back to the prior block of questions, and the >> button at the bottom of a block to proceed to the next block of questions.

The survey is designed with several questions that have forced responses. This was done to ease analysis of the survey response data. You will not be able to submit your survey if one of the forced response questions has not been answered. To assist you with locating any required responses, a bright red message will be presented to you above the question that requires an answer after you have attempted to move to a new block of questions or attempted to submit the survey.

I hope you find the survey thought provoking, and I thank you for your participation in my dissertation research.

Sincerely,

Reggie Murray
Doctoral Candidate
Pepperdine University

Respondent's Name

Respondent's Position

Years of Experience (in the VC Industry)

- 1 - 3 Years
- 4 - 10 Years
- 11 - 20 Years
- > 20 Years

Venture Capital Firm Name

Do you believe Venture Funded High Tech Start-up Companies (VFSCs) need a vision?

- | | | | | |
|-----------------------|-----------------------|------------------------------------|-----------------------|-----------------------|
| Strongly Believe | Believe | No feeling One
Way or the Other | Do Not Believe | Strongly Disbelieve |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Are the firms you have in mind to respond to this survey, VFSCs?

- Yes No

Have you (ever) been a Board member or an executive officer for any of the five categories of firms (Super-successes, Successes, Projected Successes, Living Dead, or Failures) you have in mind to use to respond to this survey?

The 'definitions list' provided with your solicitation email-letter provides a definition for each of the five categories of firm.

Please refer to the 'Backgrounder' provided with your solicitation email-letter for a brief explanation of how the universe of VFSCs is defined in this study.

Please note: If you are reporting on a Super-success, it must have IPOed in the last ten years. Prior to that time the internet was not used by VCs to advertize their successes.

- Yes No

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Survey Powered By [Qualtrics](#)

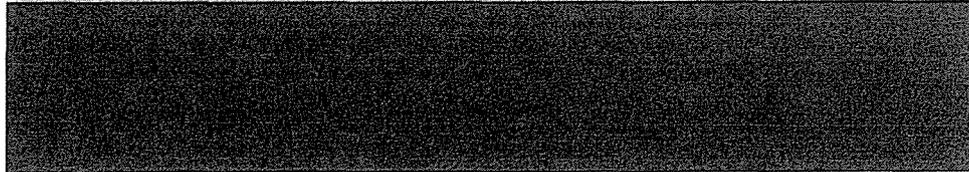


Ignore Validation -more options- [Click Here to Start Over](#)

Previewing Survey

For questions regarding the definitions of terms used in this survey instrument, please refer to the definitions list you received with the solicitation email-letter. Should you have questions regarding the purpose, objectives or design of this survey, please refer to the background provided with the solicitation email-letter. Both documents are available via email by sending an email request to jggimmurray@comcast.net. Please feel free to send any other questions or comments you may have as well. Thank you.

Respondents please note: Completion of this survey indicates you have read the cover letter that accompanied instructions for completing a survey and understand and agree to the terms of participation in the study.



If the answer to the previous question is yes, please identify the categories of firms (for which you have been a Board member or executive officer) on which you are reporting.

If the answer is no, the survey engine should have forced you to skip down to the last four questions.

- Super-success
- Success
- Projected Success
- Living Dead
- Failure

During the Pre-IPO period, did a succession event occur in any of the firms on which you have in mind to report?

Please refer to the 'definitions list' for a definition for the term "succession event."

Yes No

<<

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Previewing Survey

For questions regarding the definitions of terms used in this survey instrument, please refer to the definitions list you received with the citation email-letter. Should you have questions regarding the purpose, objectives or design of this survey, please refer to the background provided with the solicitation email-letter. Both documents are available via email by sending an email request to gglemurray@comcast.net. Please feel free to send any other questions or comments you may have as well. Thank you.

Respondents please note: Completion of this survey indicates you have read the cover letter that accompanied instructions for completing the survey and understand and agree to the terms of participation in the study.



If the answer to the previous question is yes, in which category(s) of firm(s) did a succession event occur?

If the answer is no, the survey engine should have forced you to skip to the next question.

- Super-success
- Success
- Projected success
- Living Dead
- Failure

In the firm(s) you have in mind to use to respond to this survey, did the founder(s) have a vision for (his / their) firm(s)?

Please limit your answers to the categories of firms for which you have been a Board member or an executive officer.

	Super-successes	Successes	Projected Successes	Living Dead	Failures
Very Clear Vision	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Somewhat Clear Vision	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unclear Vision	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Very Unclear Vision	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
No Vision	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Was the founder's(s') vision valued by the Board and the Executive Officers?
 Please limit your answers to the categories of firms for which you have been a Board member or an executive officer.

	Super-successes	Successes	Projected Successes	Living Dead	Failures
Highly Valued	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Somewhat Valued	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not Valued	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not Applicable (No Vision)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

(Was / Were) the vision(s) articulated in writing?
 If any of the firm(s) you have in mind to report on (have / has / had) no vision, please select Not Applicable.
 Please limit your answers to the categories of firms for which you have been a Board member or an executive officer.

	Super-Successes	Successes	Projected Successes	Living Dead	Failures
Yes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
No	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not Applicable (No Vision)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If the firm(s) you have in mind to use to respond to this question (have / has / had) a vision, (does / did) the founder's(s') vision conform to the definition for a vision provided in the 'definitions list' (you received with the survey solicitation email-letter)?
 If any of the firm(s) you have in mind to report on (have / has / had) no vision, please select Not Applicable.
 Please limit your answers to the categories of firms for which you have been a Board member or an executive officer.

	Super-successes	Successes	Projected Successes	Living Dead	Failures
Largely Conforms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Somewhat Conforms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does Not Conform	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not Applicable (No Vision)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

For the firm(s) you have in mind to use to respond to this survey which did not sustain the original founder's(s') vision(s) throughout the Pre-IPO period(s), to what degree was (were) the founder's(s') vision(s) changed or disregarded (or ignored).

Please note: For purposes of this study changed and disregarded (or ignored) are mutually exclusive terms.

Please limit your answers to the categories of firms for which you have been a Board member or an executive officer.

	Super-successes	Successes	Projected Successes	Living Dead	Failures
Vision Changed Completely	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vision Was Completely Disregarded (or Ignored)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vision Changed Somewhat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vision was Somewhat disregarded (or ignored)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vision Changed Slightly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vision was Slightly Disregarded (or Ignored)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
N / A (Vision was neither Changed nor Disregarded)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The next two questions are intended to assist with the determination of current **industry-wide averages** for the five categories of firms this survey seeks to study; namely, Super-successes, Successes, Projected Successes, Living Dead and

Failures.

The VFSC firms on which you have been reporting are *not* the subject of these two questions.

What percentage of all VFSC firms, whose fate has been determined, would you characterize as Super-Successes, Successes and Failures?

By this study's definition, Super-successes and Successes must have held a successful IPO.

Please use the definitions for Super-successes, Successes and Failures provided in the 'definitions list' and estimate the percentages as a function of the total number of business starts receiving first or seed round financing. The percentages should sum to 100%.

- Super-successes
- Successes
- Failures

- **Total**

What percentage of Pre-IPO VFSC firms in actively managed VC portfolios, whose fate has **not** been decided, would you characterize as Projected Successes, and what percentage of VFSC firms, whose fate has **not** been decided, would you characterize as Living Dead?

Please use the definitions for Projected Success and Living Dead provided in the definitions list. The percentages should sum to 100%.

- Projected Successes
- Living Dead

- **Total**

Do you consider the information provided in response to this survey instrument proprietary and / or confidential?

Yes No

Would you like to receive a copy of the final results of this survey?

Yes No

Would you be willing to discuss your responses to this survey instrument over the phone or via e-mail?

Yes No

If the answer to the previous question is yes, please provide your contact information on the lines below, and then press the >> button in the lower right hand corner to submit your responses.

If no, you have reached the end of the survey. Please submit your responses by pressing the >> button in the lower right hand corner.

You may choose to review or change your responses by scrolling back using the scroll bar at the right.

Please note the survey is designed with several questions that have forced responses. This was done to ease analysis of the survey response data. You will not be able to submit your survey if one of the forced response questions has not been answered.

<<

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APPENDIX P
Pilot Study Participant Suitability Index

Pilot Study Suitability Variables					
	1	2	3	4	
	Years of Exposure to Boards of Directors	Number of VFSC Firm Board Exposures	Board Level Involvement	Familiarity with Study's Variables	Suitability Index
Respondent					
1	2	1	4	4	11
2	2	1	4	4	11
3	3	2	4	4	13
4	4	5	3	4	16
5	5	5	5	5	20
6	4	3	3	4	14
7	5	2	4	3	14

Legend:

1) Years of Exposure to Boards of Directors

Value	Years of Experience
1	0-1
2	2 - 5
3	6 -10
4	10 - 20
5	> 20

2) Number of VFSC Board Exposures (Different Firms)

Value	Number of VFSC Board Exposures
1	1
2	2
3	3
4	4
5	5

3) Board Level Involvement

Value	Involvement
1	Officer
2	Consultant
3	Non-voting Observer
4	BOD Member
5	BOD Chairman

4) Familiarity with the Study's Variables

Value	Familiarity
1	Limited
2	Some
3	Familiar
4	Very Familiar
5	Extremely Familiar

APPENDIX Q Survey Plan Preface

The survey plan (Appendix Q1) is arranged in array format. It displays the dissertation proposal research questions along the horizontal or 'x' axis and the survey instrument questions along the vertical or 'y' axis. In each instance where a survey question addresses or supports a research question finding, an 'x' is marked on the array to signify the survey question is relevant to answering the corresponding research question. This methodology has been utilized as a means for making sure the survey instrument has content validity. Each survey question is specifically associated with at least one research question to insure the survey instrument tests or what it is supposed to test for.

APPENDIX Q1
Survey Plan

VC Respondent Information

- 1 Respondant's Name - _____
- 2 Respondant's Position - _____
- 3 Years of Experience in Venture Capital Investing - _____
- 4 Venture Capital Firm Name - _____

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Survey Instrument Questions

Background Information

- 1 Do you believe Venture Funded High Tech Start-up Companies (VFSCs) need a vision?
- 2 Are the firms that you have in mind to respond to this survey, VFSCs?
- 3 Have you (ever) been a Board member for any of the five categories of firms you have in mind to use to respond to this survey?
- 4 If yes, please identify the categories of firms (for which you have been a Board member) on which you are reporting.
- 5 Did a succession event (Founding CEO departed the firm) occur in any of the firms during their Pre-IPO periods?
- 6 If yes, in which category(s) of firm(s) did a succession event occur?

5	Are the no. of 'S's, 'SS's, 'PS's, 'LD's, or 'F's, which had a vision that was valued by the BOD & Exec. Officers, different to the estimated no.s from appropriately sized random samples of the population?					
4	Are the no. of 'S's, 'SS's, 'PS's, 'LD's, or 'F's, which had a succession event, different to the estimated no.s from appropriately sized random samples of the population?				x	x
3	Maintain the integrity of the study from a validity and reliability	x	x	x	x	x
2	What % of VCs believe having a founder's vision contributes to a successful IPO?	x				
1	What % of VFSC firms had a founder's vision?					

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Survey Instrument Questions

Successes

- 7 Did the founder(s) have a vision for his/their firm?
- 8 Was the founder's vision valued by the Board & the Executive Officers?
- 9 Was the founder's vision articulated in writing?
- 10 Does / did the founder's vision conform to the definition for a vision provided in the definitions list?
- 11 Did the founder's vision change during the Pre-IPO period?
- 12 Was the founder's vision disregarded or ignored during the Pre-IPO period?

1	What % of VFSC firms had a founder's vision?								
2	What % of VCs believe having a founder's vision contributes to a successful IPO?								
3	Maintain the integrity of the study from a validity and reliability		x	x	x	x	x	x	
4	Are the no. of 'S's, 'SS's, 'PS's, 'LD's, or 'F's, which had a succession event, different to the estimated no.s from appropriately sized random samples of the population?								
5	Are the no. of 'S's, 'SS's, 'PS's, 'LD's, or 'F's, which had a vision that was valued by the BOD & Exec. Officers, different to the estimated no.s from appropriately sized random samples of the population?								x

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Survey Instrument Questions

Super-Successes

- 7 Did the founder(s) have a vision for his/their firm?
- 8 Was the founder's vision valued by the Board & the Executive Officers?
- 9 Was the founder's vision articulated in writing?
- 10 Does / did the founder's vision conform to the definition for a vision provided in the definitions list?
- 11 Did the founder's vision change during the Pre-IPO period?
- 12 Was the founder's vision disregarded or ignored during the Pre-IPO period?

Research Questions	1	2	3	4	5
1 What % of VFSC firms had a founder's vision?	x				
2 What % of VCs believe having a founder's vision contributes to a successful IPO?					
3 Maintain the integrity of the study from a validity and reliability			x	x	x
4 Are the no. of 'S's, 'SS's, 'PS's, 'LD's, or 'F's, which had a succession event, different to the estimated no.s from appropriately sized random samples of the population?					
5 Are the no. of 'S's, 'SS's, 'PS's, 'LD's, or 'F's, which had a vision that was valued by the BOD & Exec. Officers, different to the estimated no.s from appropriately sized random samples of the population?					x

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Survey Instrument Questions

Research Questions						
5	Are the no. of 'S's, 'SS's, 'PS's, 'LD's, or 'F's, which had a vision that was valued by the BOD & Exec. Officers, different to the estimated no.s from appropriately sized random samples of the population?				x	
4	Are the no. of 'S's, 'SS's, 'PS's, 'LD's, or 'F's, which had a succession event, different to the estimated no.s from appropriately sized random samples of the population?					
3	Maintain the integrity of the study from a validity and reliability		x	x	x	x
2	What % of VCs believe having a founder's vision contributes to a successful IPO?					
1	What % of VFSC firms had a founder's vision?	x			x	x

Projected Successes

- 7 Did the founder(s) have a vision for his/their firm?
- 8 Was the founder's vision valued by the Board & the Executive Officers?
- 9 Was the founder's vision articulated in writing?
- 10 Does / did the founder's vision conform to the definition for a vision provided in the definitions list?
- 11 Did the founder's vision change during the Pre-IPO period?
- 12 Was the founder's vision disregarded or ignored during the Pre-IPO period?

Survey Instrument Questions

Failures

- 7 Did the founder(s) have a vision for his/their firm?
- 8 Was the founder's vision valued by the Board & the Executive Officers?
- 9 Was the founder's vision articulated in writing?
- 10 Does / did the founder's vision conform to the definition for a vision provided in the definitions list?
- 11 Did the founder's vision change during the Pre-IPO period?
- 12 Was the founder's vision disregarded or ignored during the Pre-IPO period?

Research Questions	
5	Are the no. of 'S's, 'SS's, 'PS's, 'LD's, or 'F's, which had a vision that was valued by the BOD & Exec. Officers, different to the estimated no.s from appropriately sized random samples of the population?
4	Are the no. of 'S's, 'SS's, 'PS's, 'LD's, or 'F's, which had a succession event, different to the estimated no.s from appropriately sized random samples of the population?
3	Maintain the integrity of the study from a validity and reliability
2	What % of VCs believe having a founder's vision contributes to a successful IPO?
1	What % of VFSC firms had a founder's vision?

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Survey Instrument Questions

Confidentiality Questions

- 13 Do you consider the information provided in response to this survey instrument proprietary and/or confidential?
- 14 Would you like to receive a copy of the final results of this survey?
- 15 Would you be willing to discuss your responses to this survey instrument over the phone or via e-mail?
- 16 If yes, please provide your contact information on the lines below.

5	Are the no. of 'S's, 'SS's, 'PS's, 'LD's, or 'F's, which had a vision that was valued by the BOD & Exec. Officers, different to the estimated no.s from appropriately sized random samples of the population?			
4	Are the no. of 'S's, 'SS's, 'PS's, 'LD's, or 'F's, which had a succession event, different to the estimated no.s from appropriately sized random samples of the population?			
3	Maintain the integrity of the study from a validity and reliability	x	x	x
2	What % of VCs believe having a founder's vision contributes to a successful IPO?			
1	What % of VFSC firms had a founder's vision?			

Research Questions

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Survey Instrument Questions

Sustained Vision	
S & SS	PS
7	8
9	10
6	

Successes

- 7 Did the founder(s) have a vision for his/their firm?
- 8 Was the founder's vision valued by the BOD & Exec. Officers?
- 9 Was the founder's vision articulated in writing?
- 10 Does / did the founder's vision conform to the definition for a vision provided in the definitions list?
- 11 Did the founder's vision change during the Pre-IPO period?
- 12 Was the founder's vision disregarded or ignored during the Pre-IPO period?

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Survey Instrument Questions

Sustained Vision					
S & SS 7	PS 8				
Does changing or disregarding the founder's vision impact the success rate of VFSCs?	6				
Are the numbers of VFSCs, which sustained the founder's vision, different to the estimated numbers from appropriately sized random selections of the population?					
Is the no. of "projected successes", which sustained the founder's vision, different to the estimated no. from an appropriately sized random sample of the population?					
Is the no. of "Living Dead", which sustained the founder's vision, different to the estimated no. from an appropriately sized random sample of the population?					
Is the no. of "failures", which sustained the founder's vision, different to the estimated no. from an appropriately sized random sample of the population?					

Super-Successes

- 7 Did the founder(s) have a vision for his/their firm?
- 8 Was the founder's vision valued by the BOD & Exec. Officers?
- 9 Was the founder's vision articulated in writing?
- 10 Does / did the founder's vision conform to the definition for a vision provided in the definitions list?
- 11 Did the founder's vision change during the Pre-IPO period?
- 12 Was the founder's vision disregarded or ignored during the Pre-IPO period?

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Survey Instrument Questions

Projected Successes

- 7 Did the founder(s) have a vision for his/their firm?
- 8 Was the founder's vision valued by the BOD & Exec. Officers?
- 9 Was the founder's vision articulated in writing?
- 10 Does / did the founder's vision conform to the definition for a vision provided in the definitions list?
- 11 Did the founder's vision change during the Pre-IPO period?
- 12 Was the founder's vision disregarded or ignored during the Pre-IPO period?

	Sustained Vision			
	S & SS	PS	LD	F
Does changing or disregarding the founder's vision impact the success rate of VFSCs?				
Are the numbers of VFSCs, which sustained the founder's vision, different to the estimated numbers from appropriately sized random selections of the population?				
Is the no. of "projected successes", which sustained the founder's vision, different to the estimated no. from an appropriately sized random sample of the population?				
Is the no. of "Living Dead", which sustained the founder's vision, different to the estimated no. from an appropriately sized random sample of the population?				
Is the no. of "failures", which sustained the founder's vision, different to the estimated no. from an appropriately sized random sample of the population?				
7 Did the founder(s) have a vision for his/their firm?		x		
8 Was the founder's vision valued by the BOD & Exec. Officers?				
9 Was the founder's vision articulated in writing?				
10 Does / did the founder's vision conform to the definition for a vision provided in the definitions list?	x	x		
11 Did the founder's vision change during the Pre-IPO period?	x			
12 Was the founder's vision disregarded or ignored during the Pre-IPO period?	x			

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Survey Instrument Questions

Sustained Vision		F 10	LD 9	PS 8	S & SS 7	6
Is the no. of "failures", which sustained the founder's vision, different to the estimated no. from an appropriately sized random sample of the population?						
Is the no. of "Living Dead", which sustained the founder's vision, different to the estimated no. from an appropriately sized random sample of the population?			x			
Is the no. of "projected successes", which sustained the founder's vision, different to the estimated no. from an appropriately sized random sample of the population?						
Are the numbers of VFSCs, which sustained the founder's vision, different to the estimated numbers from appropriately sized random selections of the population?						
Does changing or disregarding the founder's vision impact the success rate of VFSCs?						x

Living Dead

- 7 Did the founder(s) have a vision for his/their firm?
- 8 Was the founder's vision valued by the BOD & Exec. Officers?
- 9 Was the founder's vision articulated in writing?
- 10 Does / did the founder's vision conform to the definition for a vision provided in the definitions list?
- 11 Did the founder's vision change during the Pre-IPO period?
- 12 Was the founder's vision disregarded or ignored during the Pre-IPO period?

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Survey Instrument Questions

Sustained Vision					
S & SS	7	Are the numbers of VFSCs, which sustained the founder's vision, different to the estimated numbers from appropriately sized random selections of the population?			
PS	8	Is the no. of "projected successes", which sustained the founder's vision, different to the estimated no. from an appropriately sized random sample of the population?			
LD	9	Is the no. of "Living Dead", which sustained the founder's vision, different to the estimated no. from an appropriately sized random sample of the population?			
F	10	Is the no. of "failures", which sustained the founder's vision, different to the estimated no. from an appropriately sized random sample of the population?	x		x
0		Does changing or disregarding the founder's vision impact the success rate of VFSCs?	x		x

Failures

- 7 Did the founder(s) have a vision for his/their firm?
- 8 Was the founder's vision valued by the BOD & Exec. Officers?
- 9 Was the founder's vision articulated in writing?
- 10 Does / did the founder's vision conform to the definition for a vision provided in the definitions list?
- 11 Did the founder's vision change during the Pre-IPO period?
- 12 Was the founder's vision disregarded or ignored during the Pre-IPO period?

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Survey Instrument Questions

Successes

- 7 Did the founder(s) have a vision for his/their firm?
- 8 Was the founder's vision valued by the BOD & Exec. Officers?
- 9 Was the founder's vision articulated in writing?
- 10 Does / did the founder's vision conform to the definition for a vision provided in the definitions list?
- 11 Did the founder's vision change during the Pre-IPO period?
- 12 Was the founder's vision disregarded or ignored during the Pre-IPO period?

Changed Vision			
S & SS	PS	ED	F
11 Are the numbers of 'S's or 'SS's, which changed the founder's vision, different to the estimated numbers of 'S's or 'SS's from an appropriately sized random sample of the population?	12 Is the number of "projected successes", which changed the founder's vision, different to the estimated number of 'PS's from an appropriately sized random sample of the population?	13 Is the number of "Living Dead" which changed the founder's vision different to the estimated number of 'LD's from an appropriately sized random sample of the population?	14 Is the number of "failures", which changed the founder's vision, different to the estimated number of 'F's from an appropriately sized random sample of the population?

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Survey Instrument Questions

Changed Vision	
S & SS 11	PS 12
Are the numbers of 'S's or 'SS's, which changed the founder's vision, different to the estimated numbers of 'S's or 'SS's from an appropriately sized random sample of the population?	Is the number of "projected successes", which changed the founder's vision, different to the estimated number of 'PS's from an appropriately sized random sample of the population?
	Is the number of "Living Dead", which changed the founder's vision, different to the estimated number of 'LD's from an appropriately sized random sample of the population?
	Is the number of "failures", which changed the founder's vision, different to the estimated number of 'F's from an appropriately sized random sample of the population?

Projected Successes

- 7 Did the founder(s) have a vision for his/their firm?
- 8 Was the founder's vision valued by the BOD & Exec. Officers?
- 9 Was the founder's vision articulated in writing?
- 10 Does / did the founder's vision conform to the definition for a vision provided in the definitions list?
- 11 Did the founder's vision change during the Pre-IPO period?
- 12 Was the founder's vision disregarded or ignored during the Pre-IPO period?

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Survey Instrument Questions

Living Dead

- 7 Did the founder(s) have a vision for his/their firm?
- 8 Was the founder's vision valued by the BOD & Exec. Officers?
- 9 Was the founder's vision articulated in writing?
- 10 Does / did the founder's vision conform to the definition for a vision provided in the definitions list?
- 11 Did the founder's vision change during the Pre-IPO period?
- 12 Was the founder's vision disregarded or ignored during the Pre-IPO period?

Changed Vision					
S & SS	PS	LD	F		
11	12	13	14		
Are the numbers of 'S's or 'SS's, which changed the founder's vision, different to the estimated numbers of 'S's or 'SS's from an appropriately sized random sample of the population?	Is the number of "projected successes", which changed the founder's vision, different to the estimated number of 'PS's from an appropriately sized random sample of the population?	Is the number of "Living Dead", which changed the founder's vision, different to the estimated number of 'LD's from an appropriately sized random sample of the population?	Is the number of "failures", which changed the founder's vision, different to the estimated number of 'F's from an appropriately sized random sample of the population?		
		X			
			X		
				X	
					X

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Survey Instrument Questions

Successes

- 7 Did the founder(s) have a vision for his/their firm?
- 8 Was the founder's vision valued by the BOD & Exec. Officers?
- 9 Was the founder's vision articulated in writing?
- 10 Does / did the founder's vision conform to the definition for a vision provided in the definitions list?
- 11 Did the founder's vision change during the Pre-IPO period?
- 12 Was the founder's vision disregarded or ignored during the Pre-IPO period?

Disregarded Vision				
S & SS	PS	LD	F	
15	16	17	18	
Are the numbers of 'S's or 'SS's, which disregarded the founder's vision, different to the estimated numbers of 'S's or 'SS's from an appropriately sized random sample of the population?	Is the number of "PSs", which disregarded the founder's vision, different to the estimated number of 'PS's from an appropriately sized random sample of the population?	Is the number of "Living Dead", which changed the founder's vision, different to the estimated number of 'LD's from an appropriately sized random sample of the population?	Is the number of "failures", which changed the founder's vision, different to the estimated number of 'F's from an appropriately sized random sample of the population?	
x				
				x
				x

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Survey Instrument Questions

Super-Successes

- 7 Did the founder(s) have a vision for his/their firm?
- 8 Was the founder's vision valued by the BOD & Exec.Officers?
- 9 Was the founder's vision articulated in writing?
- 10 Does / did the founder's vision conform to the definition for a vision provided in the definitions list?
- 11 Did the founder's vision change during the Pre-IPO period?
- 12 Was the founder's vision disregarded or ignored during the Pre-IPO period?

Disregarded Vision			
S & SS	PS	LD	F
15 Are the numbers of 'S's or 'SS's, which disregarded the founder's vision, different to the estimated numbers from an appropriately sized random sample of the population?	16 Is the number of 'PSS', which disregarded the founder's vision, different to the estimated numbers from an appropriately sized random sample of the population?	17 Is the number of 'Living Dead', which changed the founder's vision, different to the estimated numbers from an appropriately sized random sample of the population?	18 Is the number of 'Failures', which changed the founder's vision, different to the estimated numbers from an appropriately sized random sample of the population?
x			
x			
x			

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Survey Instrument Questions

- Projected Successes*
- 7 Did the founder(s) have a vision for his/their firm?
 - 8 Was the founder's vision valued by the BOD & Exec.Officers?
 - 9 Was the founder's vision articulated in writing?
 - 10 Does / did the founder's vision conform to the definition for a vision provided in the definitions list?
 - 11 Did the founder's vision change during the Pre-IPO period?
 - 12 Was the founder's vision disregarded or ignored during the Pre-IPO period?

Disregarded Vision			
S & SS	PS	LD	F
15 Are the numbers of 'S's or 'SS's, which disregarded the founder's vision, different to the estimated numbers from an appropriately sized random sample of the population?	16 Is the number of "PSS", which disregarded the founder's vision, different to the estimated numbers from an appropriately sized random sample of the population?	17 Is the number of "Living Dead" which changed the founder's vision, different to the estimated numbers from an appropriately sized random sample of the population?	18 Is the number of "failures", which changed the founder's vision, different to the estimated numbers from an appropriately sized random sample of the population?
	x		
	x		
	x		

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Survey Instrument Questions

Living Dead

- 7 Did the founder(s) have a vision for his/their firm?
- 8 Was the founder's vision valued by the BOD & Exec. Officers?
- 9 Was the founder's vision articulated in writing?
- 10 Does / did the founder's vision conform to the definition for a vision provided in the definitions list?
- 11 Did the founder's vision change during the Pre-IPO period?
- 12 Was the founder's vision disregarded or ignored during the Pre-IPO period?

Disregarded Vision				
S&SS 15	Are the numbers of 'S's or 'SS's, which disregarded the founder's vision, different to the estimated numbers from an appropriately sized random sample of the population?			
PS 16	Is the number of "PSS", which disregarded the founder's vision, different to the estimated numbers from an appropriately sized random sample of the population?			
LD 17	Is the number of "Living Dead", which changed the founder's vision, different to the estimated numbers from an appropriately sized random sample of the population?	X	X	X
F 18	Is the number of "failures", which changed the founder's vision, different to the estimated numbers from an appropriately sized random sample of the population?			

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Survey Instrument Questions

Failures

- 7 Did the founder(s) have a vision for his/their firm?
- 8 Was the founder's vision valued by the BOD & Exec. Officers?
- 9 Was the founder's vision articulated in writing?
- 10 Does / did the founder's vision conform to the definition for a vision provided in the definitions list?
- 11 Did the founder's vision change during the Pre-IPO period?
- 12 Was the founder's vision disregarded or ignored during the Pre-IPO period?

Disregarded Vision	
S & SS 15	PS 16
Are the numbers of 'S's or 'SS's, which disregarded the founder's vision, different to the estimated numbers from an appropriately sized random sample of the population?	
Is the number of "PSSs", which disregarded the founder's vision, different to the estimated numbers from an appropriately sized random sample of the population?	
Is the number of "Living Dead", which changed the founder's vision, different to the estimated numbers from an appropriately sized random sample of the population?	
Is the number of "failures", which changed the founder's vision, different to the estimated numbers from an appropriately sized random sample of the population?	

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Questions about industry-wide success and failure rates.

- 1 I believe the industry-wide success rate for VFSCs is? _____ %
- 2 I believe the industry-wide super-success rate for VFSCs is? _____ %
- 3 I believe the industry-wide failure rate for VFSCs is? _____ %
- 4 I believe the industry-wide projected success rate in current portfolios is? _____ %
- 5 I believe the industry-wide percentage of firms classified as living dead is? _____ %

APPENDIX R
Non-response Bias Test Solicitation Email

Dear NVCA Member,

Since my last communication with you, I have received enough responses from your peer firms to start to investigate statistically significant relationships between the categories of firms defined in my study (Super-successes, Successes, Projected Successes, Living Dead and Failures), and the degree to which the founder's vision is sustained, changed or disregarded. Approximately 10% of the 400+ NVCA member firms have contributed to my study at this point in time. While the 10% response rate is in line with my projections for a survey of this type, it does beg the question... Does the respondent population represent the views of the non-respondent population?

In order to verify the two populations are indeed similar or different, I have employed a pseudo-random number generator to select a small number of non-respondent firms which I am asking to participate in my test for Non-response Bias. Your firm has been selected for this phase of my study.

The survey engine can be accessed at the following web-site:

http://pepperdine.qualtrics.com/SE?SID=SV_5akjdYWq3WOIggk&SVID=Prod

Just click or double click on the link and you will be taken directly to the survey engine. Survey statistics indicate the typical time to complete the survey is between three and ten minutes.

Two documents have been attached to this email. These documents include a list of definitions, a very brief background on the study, and a survey worksheet which some respondents have found useful in organizing their thoughts and answers. Please refer to the Definitions List for a specific definition for each of the five categories of VFSC firm. The five categories of firms (used in this study) have been selected because there is precedent for their use in the entrepreneurship literature, and their constructs have been determined to be useful in describing the status of start-up companies with the VC community (Ruhnka et al., 1992).

The added value of your participation in this phase of my study will enable me to form a more complete and accurate picture of my research topic. As an incentive, I am offering all respondents a summary copy of the results I obtain. The results will be made available after my final defense which I hope to complete by late summer, 2008.

Should you decide to participate in my study, please rest assured your response data will be held in the strictest confidence by me. All of the Pepperdine University processes and procedures outlined in my letter of informed consent, which was attached to my initial survey request, are being adhered to.

I will close by thanking you for considering participation in my dissertation research. Should you have any questions or comments, please feel free to contact me by return email.

Sincerely,

Reggie Murray
Pepperdine University

APPENDIX S
Pilot Study Cover Letter

March 20, 2008

Mr. Thomas XYZ
Partner,
JKW Venture Capital Ltd.
4040 W. Easy Street
Baltimore, MD 20895

Dear Sir,

I am a doctoral candidate in Organization Change at Pepperdine University in Los Angeles, California. I am currently writing my dissertation on “The Founder’s Vision & Its Influence on the Outcomes of High Tech Start-up Companies,” a survey based study on the impact of changing or disregarding the founder’s vision in Venture Funded High Tech Start-up Companies (VFSCs).

I am requesting your participation in a web-based survey pilot study. Your participation is key to insuring the survey findings are statistically reliable and valid. The survey is short (approximately 20 questions), and it has been sent only to a select number of firms or individuals for the reasons I will explain below:

The pilot study is being conducted to establish instrument *reliability and validity* in the statistical sense. The results of the first survey you take may be included in the overall survey population results.

The *validity* test asks you, as a recognized expert in the VC industry, to assess whether or not the survey instrument tests for what it purports to test. A simple yes or no answer is all that is required. A review of the study’s research questions will be conducted to provide a basis for your answer.

The survey instrument’s *repeatability* will be measured using a test / retest method. You and a minimum of two other executives are being asked to fill out the survey and then retake the survey approximately three weeks later.

The survey instrument can be accessed by going to the following web-site:
http://pepperdine.qualtrics.com/SE?SID=SV_eCFob6tpfIIa5e&SVID=Prod . Just copy this URL to your browser and hit <enter>, or click on the link and you will be taken straight to the survey instrument.

Pepperdine University uses a formally constituted Internal Review Board (IRB) to monitor all studies involving human participants. The IRB insures privacy and confidentiality are maintained and that the actions of any authorized researchers are consistent with national standards for human participant study. Individual data and information is compiled by the researcher in one cumulative file, and the results will be reported without any possibility of

identifying people individually. The researcher will have access to all individual responses to the survey questionnaire and the cumulative data file. Consistent with IRB policy, please be advised that all survey information will be held in a secure location for a period of five years commencing on April 1, 2008.

The Pepperdine University IRB has authorized a Waiver of Documentation of Informed Consent for this study; however, a memorandum of Consent for Research Study (CRS) is being provided to you as an attachment to this letter to insure that you are informed of your rights as a participant in this study. Additionally, the CRS identifies the purpose of the study, the study's duration, the procedures used in the study, risks to you as the participant (identified by the principal researcher), benefits, privacy and confidentiality measures and procedures, commitments for compensation (There are none in this study.), and contact information for questions and/or concerns regarding the study's purpose, procedures, survey instruments, and confidentiality measures.

Since you are not being asked to sign an Informed Consent Form, please be advised that if you choose to participate in this study, your completion of the survey will indicate that you have read this cover letter and understand and agree to the terms of participation in this study. Should you wish to receive formal documentation of your participation in the study in the form of a signed informed consent letter, please contact Mr. Reggie Murray at Reggiemurray@comcast.net. I will be happy to provide you with such a letter.

I would like to close by extending my sincere thanks to you and your organization for participating in this survey. Should you choose to request a statistical summary of the survey data, it will be emailed to you after March, 2008. Also, if you have further concerns, or do not feel I have adequately addressed your questions, please contact my Dissertation Chair, Dr. Robert Canady at (310) 568-5600.

Sincerely,

Reggie Murray
Doctoral Candidate
Pepperdine University

APPENDIX T
Instructions for Responding to Pilot Study Survey Instrument

- 1) Go to the following website:
http://pepperdine.qualtrics.com/SE?SID=SV_eCFob6tpfIILa5e&SVID=Prod .
You can either click on the link or copy the URL to your web-browser and hit <enter>.
- 2) Review the list of definitions provided in your solicitation package for terms used in the survey instrument.
- 3) Click the button that best represents your understanding of the answer to each of the survey questions.
- 4) Type in any requested answers, comments, or suggestions in the spaces provided.
- 5) Press the submit button (>>) located in the bottom right corner of the survey instrument, and you are done with the first survey.
- 6) If requested, please wait three weeks and retake the survey by following the instructions 1 through 5.

APPENDIX U
Coded Reliability Data

Spearman's Rank Order Correlation Coefficient for Yes / No Questions

Name	Respondent	x	Rank x	y	Rank y	d	d ²
1	1	8	7	8	7	0	0
2	2	7	5.5	6	4	1.5	2.25
3	3	7	5.5	7	6	-0.5	0.25
4	4	3	1	3	1	0	0
5	5	6	4	6	4	0	0
6	6	5	2.5	5	2	0.5	0.25
7	7	5	2.5	6	4	-1.5	2.25
	sum	41		41		0	5
	mean	5.857143		5.857143			

$t' = (\sum t^3 - \sum t) / 12 =$	t	t ³	$u' = (\sum u^3 - \sum u) / 12 =$	u	u ³	
	2	8		3	27	
	2	8				
	sum	4	16	sum	3	27

$$t' = (\sum t^3 - \sum t) / 12 = 1.00 \qquad u' = (\sum u^3 - \sum u) / 12 = 2.00$$

$$r_s = (n^3 - n - 6 \sum d^2 - 6 (t' + u')) / (\sqrt{(n^3 - n - 12t')} * \sqrt{(n^3 - n - 12u')}) = 0.906$$

$$r = 0.93880559$$

Spearman's Rank Order Correlation Coefficient - Questions with 7 Likert responses

Name	Respondent	x	Rank x	y	Rank y	d	d ²
1	1	17	6	16	7	-1	1
2	2	18	7	13	6	1	1
3	3	5	3	5	3.5	-0.5	0.25
4	4	6	4	2	2	2	4
5	5	11	5	11	5	0	0
6	6	1	1	1	1	0	0
7	7	4	2	5	3.5	-1.5	2.25
	sum	62		53		0	8.5
	mean	8.857143		7.571429			

$t' = (\sum t^3 - \sum t) / 12 =$	t	t ³	$u' = (\sum u^3 - \sum u) / 12 =$	u	u ³	
	0			2	8	
	0					
	sum	0	0	sum	2	8

$$t' = (\sum t^3 - \sum t) / 12 = 0.00 \qquad u' = (\sum u^3 - \sum u) / 12 = 0.50$$

$$r_s = (n^3 - n - 6 \sum d^2 - 6 (t' + u')) / (\sqrt{(n^3 - n - 12t')} * \sqrt{(n^3 - n - 12u')}) = 0.847$$

$$r = 0.84920904$$

Spearman's Rank Order Correlation Coefficient - Questions with 5 Likert responses

Name	Respondent	x	Rank x	y	Rank y	d	d ²
1	1	11	6	11	6	0	0
2	2	8	3	10	5	-2	4
3	3	10	4.5	9	3.5	1	1
4	4	10	4.5	9	3.5	1	1
5	5	12	7	12	7	0	0
6	6	5	2	5	2	0	0
7	7	4	1	4	1	0	0
	sum	60		60		0	6
	mean	8.571429		8.571429			

$$t' = (\sum t^3 - \sum t) / 12 = \quad t \quad t^3 \quad u' = (\sum u^3 - \sum u) / 12 = \quad u \quad u^3$$

	2	8		2	8
sum	2	8	sum	2	8

$$t' = (\sum t^3 - \sum t) / 12 = \quad 0.50 \quad u' = (\sum u^3 - \sum u) / 12 = \quad 0.50$$

$$r_s = (n^3 - n - 6 \sum d^2 - 6 (t' + u')) / (\sqrt{(n^3 - n - 12t')} * \sqrt{(n^3 - n - 12u')}) = \quad \mathbf{0.891}$$

$$r = \quad \mathbf{0.94532761}$$

Spearman's Rank Order Correlation Coefficient - Questions with 4 Likert Responses

Name	Respondent	x	Rank x	y	Rank y	d	d ²
1	1	21	7	19	6.5	0.5	0.25
2	2	12	3	6	1.5	1.5	2.25
3	3	16	5	16	5	0	0
4	4	14	4	15	4	0	0
5	5	19	6	19	6.5	-0.5	0.25
6	6	8	2	8	3	-1	1
7	7	7	1	6	1.5	-0.5	0.25
	sum	97		89		0	4
	mean	13.85714		12.71429			

$$t' = (\sum t^3 - \sum t) / 12 = \quad t \quad t^3 \quad u' = (\sum u^3 - \sum u) / 12 = \quad u \quad u^3$$

	2	8		2	8
sum	0	0	sum	4	16

$$t' = (\sum t^3 - \sum t) / 12 = \quad 0.00 \quad u' = (\sum u^3 - \sum u) / 12 = \quad 1.00$$

$$r_s = (n^3 - n - 6 \sum d^2 - 6 (t' + u')) / (\sqrt{(n^3 - n - 12t')} * \sqrt{(n^3 - n - 12u')}) = \quad \mathbf{0.927}$$

$$r = \quad \mathbf{0.91762064}$$

APPENDIX VI

Chi Square Test of Influence of Succession Events on Firm Outcome

Answer		Responses	%
Yes	0.7059	24	71%
No	0.2941	10	29%
Total		34	100%

Firm Outcome	Response	Total Firms	Proportion that had a Succession Event	Expected Number	Chi Square
Super-success	10	15	0.67	8.96	0.12
Success	12	15	0.80	8.96	1.03
Projected success	9	16	0.56	9.56	0.03
Living Dead	7	13	0.54	7.76	0.08
Failure	5	13	0.38	7.76	0.98
Totals	43	72	0.60	43.00	2.25
				critical value =	9.49
				$\alpha =$	0.05
				d.f. =	4

Ho can not be rejected.

APPENDIX V2

z -Test to Estimate Number of Firms with a Vision

Firm Category	Somewhat		Very		No Vision	Responses
	Very Clear	Clear Vision	Unclear Vision	Unclear Vision		
Super-successes	10	4	1	0	0	15
Successes	10	5	0	0	0	15
Proj. Successes	6	10	2	0	0	18
Living Dead	2	7	3	3	0	15
Failures	4	4	4	2	0	14
Totals	32	30	10	5	0	77

Assume 93% of all firms have a vision. This enables assumption that total population is normal.

$n \cdot p_0 = 71$ which is > 5 and $n \cdot q_0 = 5.39$ which is > 5 .

$$z = (1.00 - 0.93) / \sqrt{.93 \cdot .07 / 77} = 2.4074$$

$$p\text{-value} = 1 - .992 = 0.008$$

Chance of all 77 firms having a vision is less than 1 in 100 due to random chance.

APPENDIX V3

Chi Square Analysis of Distribution of Vision Classification Counts and Expected Distribution of Vision Classification Counts

Firm Outcome	VCC	VDC	VCS	VDS	VCY	VDY	VS	Totals
Super-successes	2	0	6	0	2	0	4	14
Successes	4	0	5	1	1	0	4	15
Proj. Successes	0	2	5	2	2	0	4	15
Living Dead	2	1	6	2	1	0	0	12
Failures	2	4	3	1	1	0	1	12
Totals	10	7	25	6	7	0	13	68

Super-successes χ^2 Raw Contingency Table:

	Super-successes	Total Population	% of Total Population	Expected Number	Chi Square Statistic
VCC	2.00	10.00	0.15	2.06	0.00
VDC	0.00	7.00	0.10	1.44	1.44
VCS	6.00	25.00	0.37	5.15	0.14
VDS	0.00	6.00	0.09	1.24	1.24
VCY	2.00	7.00	0.10	1.44	0.22
VDY	0.00	0.00	0.00	0.00	0.00
VS	4.00	13.00	0.19	2.68	0.65
Totals	14.00	68.00	1.00	14.00	3.69

Super-successes Revised Contingency Table:

	Super-Successes	Total Population	% of Total Population	Expected Number
VCD	8	48	0.71	9.88
VSS	6	20	0.29	4.12
Totals	14	68	1	14

Binomial Test:

x = 6 Px = 30%
n = 14 P(x>expected) is > 5% (n=9) from critical value tables.

Ho can not be rejected.

Acronyms:

- VCC = Vision Changed Completely
- VDC = Vision Disregard Completely
- VCS = Vision Changed Somewhat
- VDS = Vision Disregarded Somewhat
- VCY = Vision Changed Slightly
- VDY = Vision Disregarded Slightly
- VS = Vision Sustained
- VCD = VCC + VDC + VCS + VDS
- VSS = VCY + VDY + VS

Successes Raw χ^2 Contingency Table:

	Successes	Total Population	% of Total Population	Expected Number	Chi Square
VCC	4	10	0.15	2.21	1.46
VDC	0	7	0.10	1.54	1.54
VCS	5	25	0.37	5.51	0.05
VDS	1	6	0.09	1.32	0.08
VCY	1	7	0.10	1.54	0.19
VDY	0	0	0.00	0.00	0.00
VS	4	13	0.19	2.87	0.45
Totals	15	68	1.00	15.00	3.77

Successes Revised Contingency Table:

	Successes	Total Population	% of Total Population	Expected Number
VCD	10	48	0.71	10.59
VSS	5	20	0.29	4.41
Totals	15	68	1	15

Binomial Test:

x = 5 Px = 30%
n = 15 P(x > expected) is > 5% (n=7) from critical value tables.

Ho can not be rejected.

Projected Successes χ^2 Raw Contingency Table:

	Projected Successes	Total Population	% of Total Population	Expected Number	Chi Square
VCC	0.00	10.00	0.15	2.21	2.21
VDC	2.00	7.00	0.10	1.54	0.13
VCS	5.00	25.00	0.37	5.51	0.05
VDS	2.00	6.00	0.09	1.32	0.35
VCY	2.00	7.00	0.10	1.54	0.13
VDY	0.00	0.00	0.00	0.00	0.00
VS	4.00	13.00	0.19	2.87	0.45
Totals	15.00	68.00	1.00	15.00	3.32

Projected Successes Revised Contingency Table:

	Projected Successes	Total Population	% of Total Population	Expected Number
VCD	9	48	0.71	10.59
VSS	6	20	0.29	4.41
Totals	15	68	1	15

Binomial Test:

X = 6 Px = 30%
n = 15 P(x > expected) is > 5% (n=9) from critical value tables.

Ho can not be rejected.

Living Dead χ^2 Raw Contingency Table:

	Living Dead	Total Population	% of Total Population	Expected Number	Chi Square
VCC	2.00	10.00	0.15	1.76	0.03
VDC	1.00	7.00	0.10	1.24	0.04
VCS	6.00	25.00	0.37	4.41	0.57
VDS	2.00	6.00	0.09	1.06	0.84
VCY	1.00	7.00	0.10	1.24	0.04
VDY	0.00	0.00	0.00	0.00	0.00
VS	0.00	13.00	0.19	2.29	2.29
Totals	12.00	68.00	1.00	12.00	3.82

Living Dead Revised Contingency Table:

	Living Dead	Total Population	% of Total Population	Expected Number
VCD	11	48	0.71	8.47
VSS	1	20	0.29	3.53
Totals	12	68	1	12

Binomial Test:

$x = 1$ $Px = 30\%$
 $n = 12$ $P(x < \text{expected})$ is $> 5\%$ ($n=17$) from critical value tables.

Ho can not be rejected.

Failures χ^2 Raw Contingency Table:

	Failures	Total Population	% of Total Population	Expected Number	Chi Square
VCC	2.00	10.00	0.15	1.76	0.03
VDC	4.00	7.00	0.10	1.24	6.19
VCS	3.00	25.00	0.37	4.41	0.45
VDS	1.00	6.00	0.09	1.06	0.00
VCY	1.00	7.00	0.10	1.24	0.04
VDY	0.00	0.00	0.00	0.00	0.00
VS	1.00	13.00	0.19	2.29	0.73
Totals	12.00	68.00	1.00	12.00	7.45

Failures Revised Contingency Table:

	Failures	Total Population	% of Total Population	Expected Number
VCD	10	48	0.71	8.47
VSS	2	20	0.29	3.53
Totals	12	68	1	12

Binomial Test:

$x = 2$ $Px = 30\%$
 $n = 12$ $P(x < \text{expected})$ is $> 5\%$ ($n=22$) from critical value tables.

Ho can not be rejected.

APPENDIX V4

Chi Square and Binomial Test of Influence of BOD Valuation of Visions

	Super-Successes	Successes	Projected Successes	Living Dead	Failures	Totals
HV	13	9	7	2	1	32
SV	2	6	9	6	8	31
NV	0	0	0	5	4	9
NA	0	0	0	0	0	0
Totals	15	15	16	13	13	72

Super-successes χ^2 Raw Contingency Table:

	Super-Successes	Total Population	% of Total Population	Expected Number	Chi Square
HV	13	32	0.44	6.67	6.02
SV	2	31	0.43	6.46	3.08
NV	0	9	0.13	1.88	1.88
NA	0	0	0.00	0.00	0.00
Totals	15	72	1.00	15.00	10.97

Super-successes χ^2 Revised Contingency Table:

	Super-Successes	Total Population	% of Total Population	Expected Number	Chi Square
HV	13	32	0.444	6.67	6.02
SNV	2	40	0.556	8.33	4.81
Totals	15	72	1.000	15	10.83

critical value = 3.84

Binomial Test:

x = 13 Px = 45%

n = 15 P(x>expected) is < 5% (n=18) from critical value tables.

$\alpha = 0.05$

d.f. = 1

Ho must be rejected.

Acronyms:

HV = Highly Valued

SV = Somewhat Valued

NV = Not Valued

NA = No Vision

SNV = SV + NV + NA

Successes χ^2 Raw Contingency Table:

	Successes	Total Population	% of Total Population	Expected Number	Chi Square
HV	9	32	0.44	6.67	0.82
SV	6	31	0.43	6.46	0.03
NV	0	9	0.13	1.88	1.88
NA	0	0	0.00	0.00	0.00
Totals	15	72	1.00	15.00	2.72

Successes χ^2 Revised Contingency Table:

	Successes	Total Population	% of Total Population	Expected Number	Chi Square
HV	9	32	0.444	6.67	0.82
SNV	6	40	0.556	8.33	0.65
Totals	15	72	1.000	15	1.47

critical value = 3.84
 $\alpha = 0.05$
d.f. = 1

Binomial Test:

$x = 9$ $Px = 45\%$
 $n = 15$ $P(x > \text{expected})$ is $> 5\%$ ($n=12$) from critical value tables.

Ho can not be rejected.

Projected Successes χ^2 Raw Contingency Table:

	Projected Successes	Total Population	% of Total Population	Expected Number	Chi Square
HV	7	32	0.44	7.11	0.00
SV	9	31	0.43	6.89	0.65
NV	0	9	0.13	2.00	2.00
NA	0	0	0.00	0.00	0.00
Totals	16	72	1.00	16.00	2.65

Projected Successes χ^2 Revised Contingency Table:

	Projected Successes	Total Population	% of Total Population	Expected Number	Chi Square
HV	7	32	0.444	7.11	0.002
SNV	9	40	0.556	8.89	0.001
Totals	16	72	1.000	16	0.003125

critical value = 3.84
 $\alpha = 0.05$
d.f. = 1

Binomial Test:

$x = 7$ $Px = 45\%$
 $n = 16$ Because $x > 4$, cannot use Binomial Test.

Ho can not be rejected.

Living Dead χ^2 Raw Contingency Table:

	Living Dead	Total Population	% of Total Population	Expected Number	Chi Square
HV	2	32	0.44	5.78	2.47
SV	6	31	0.43	5.60	0.03
NV	5	9	0.13	1.63	7.01
NA	0	0	0.00	0.00	0.00
Totals	13	72	1.00	13.00	9.51

Living Dead χ^2 Revised Contingency Table:

	Living Dead	Total Population	% of Total Population	Expected Number	Chi Square
HV	2	32	0.444	5.78	2.470
SNV	11	40	0.556	7.22	1.976
Totals	13	72	1.000	13	4.446

critical value = 3.84

Binomial Test:

x = 2 Px = 45%
n = 13 P(x < expected) is = 5% (n=13) from critical value tables.

α = 0.05

d.f. = 1

Ho must be rejected.

Failures χ^2 Raw Contingency Table:

	Failures	Total Population	% of Total Population	Expected Number	Chi Square
HV	1	32	0.44	5.78	3.95
SV	8	31	0.43	5.60	1.03
NV	4	9	0.13	1.63	3.47
NA	0	0	0.00	0.00	0.00
Totals	13	72	1.00	13.00	8.45

Failures χ^2 Revised Contingency Table:

	Failures	Total Pop.	% of Total Pop.	Expected No.	Chi Square
HV	1	32	0.444	5.78	3.951
SNV	12	40	0.556	7.22	3.161
Totals	13	72	1.000	13	7.112

critical value = 3.84

Binomial Test:

x = 1 Px = 45%
n = 13 P(x < expected) is < 5% (n=9) from critical value tables.

α = 0.05

d.f. = 1

Ho must be rejected.

APPENDIX V5

Survey Sample: Chi Square Test of Vision Clarity as a Function of Firm Outcome

Acronyms:

VCV = Very Clear Vision
 VSV = Somewhat Clear Vision
 UV = Unclear Vision
 VUV = Very Unclear Vision
 NCV = SCV + UV + VUV

Survey Data:

Vision Classification	Super-Successes	Successes	Projected Successes	Living Dead	Failures	Totals
VCV	10	10	6	2	4	32
SCV	4	5	10	7	4	30
UV	1		2	3	4	10
VUV				3	2	5
Totals	15	15	18	15	14	77

Super-successes Raw χ^2 Contingency Table:

	Super-Successes	Total Population	Proportion	Expected Number
VCV	10	32	0.42	6.23
SCV	4	30	0.39	5.84
UV	1	10	0.13	1.95
VUV		5	0.06	0.97
Totals	15	77	1.00	15.00

Super-successes Revised χ^2 Contingency Table:

Super-Successes	Totals	Expected Number	Chi Square
VCV	10	6.23	2.275
NCV	5	8.77	1.618
	15.00	15.00	3.89
Critical Value =			3.84
$\alpha =$			0.05
d.f. =			1.00

Ho must be rejected.

Successes Raw χ^2 Contingency Table:

Vision Classification	Successes	Total Population	Proportion	Expected Number
VCV	10	32	0.42	6.23
SCV	5	30	0.39	5.84
UV		10	0.13	1.95
VUV		5	0.06	0.97
Totals	15	77	1.00	15.00

Successes Revised χ^2 Contingency Table:

	Successes	Expected Number	Chi Square
VCV	10	6.23	2.275
NCV	5	8.77	1.618
	15.00	15.00	3.89
		Critical Value =	3.84
		$\alpha =$	0.05
		d.f. =	1

Ho must be rejected.

Projected Successes Raw χ^2 Contingency Table:

Vision Classification	Projected Successes	Total Population	Proportion	Expected Number
VCV	6	32	0.42	7.48
SCV	10	30	0.39	7.01
UV	2	10	0.13	2.34
VUV		5	0.06	1.17
Totals	18	77	1.00	18.00

Projected Successes Revised χ^2 Contingency Table:

	Projected Successes	Expected Number	Chi Square
VCV	6	7.48	0.293
NCV	12	10.52	0.208
	18.00	18.00	0.50
		Critical Value =	3.84
		$\alpha =$	0.05
		d.f. =	1

Ho can not be rejected.

Living Dead Raw χ^2 Contingency Table:

Vision Classification	Living Dead	Total Population	Proportion	Expected Number
VCV	2	32	0.42	6.23
SCV	7	30	0.39	5.84
UV	3	10	0.13	1.95
VUV	3	5	0.06	0.97
Totals	15	77	1.00	15.00

Living Dead Revised χ^2 Contingency Table:

	Living Dead	Expected Number	Chi Square
VCV	2	6.23	2.875
NCV	13	8.77	2.045
	15.00	15.00	4.92
		Critical Value =	3.84
		$\alpha =$	0.05
		d.f. =	1

Ho must be rejected.

Failures Raw χ^2 Contingency Table:

Vision Classification	Failures	Total Population	Proportion	Expected Number
VCV	4	32	0.42	5.82
SCV	4	30	0.39	5.45
UV	4	10	0.13	1.82
VUV	2	5	0.06	0.91
Totals	14	77	1.00	14.00

Failures Revised χ^2 Contingency Table:

	Failures	Expected Number	Chi Square
VCV	4	5.82	0.568
NCV	10	8.18	0.404
	14.00	14.00	0.97
		Critical Value =	3.84
		$\alpha =$	0.05
		d.f. =	1

Ho can not be rejected.

APPENDIX V6

Survey Sample: Chi Square Test of Vision Conformity as a Function of Firm Outcome

Acronyms:

LC = Largely Conforms
 SC = Somewhat Conforms
 DC = Does not Conform
 SD = SC + DC

Survey Data:

Conformity Classification	Super-Successes	Successes	Projected Successes	Living Dead	Failures	Totals
LC	13	7	8	5	6	39
SC	2	8	8	4	5	27
DC				4	2	6
Totals	15	15	16	13	13	72

Super-successes Raw χ^2 Contingency Table:

Conformity Classification	Super-Successes	Total Population	Proportion	Expected Number
LC	13	39	0.54	8.13
SC	2	27	0.38	5.63
DC		6	0.08	1.25
Totals	15	72	1.00	15.00

Super-successes Revised χ^2 Contingency Table:

	Super-Successes	Expected Number	Chi Square
LC	13	8.13	2.925
SD	2	6.88	3.457
Totals	15.00	15.00	6.38

critical value = 3.84
 $\alpha = 0.05$
d.f. = 1

Ho must be rejected.

Successes Raw χ^2 Contingency Table:

Conformity Classification	Successes	Total Population	Proportion	Expected Number
LC	7	39	0.54	8.13
SC	8	27	0.38	5.63
DC		6	0.08	1.25
Totals	15	72	1.00	15.00

Successes Revised χ^2 Contingency Table:

	Successes	Expected Number	Chi Square
LC	7	8.13	0.156
SD	8	6.88	0.184
Totals	15.00	15.00	0.34
		critical value =	3.84
		$\alpha =$	0.05
		d.f. =	1

Ho can not be rejected.

Projected Successes Raw χ^2 Contingency Table:

Conformity Classification	Projected Successes	Total Population	Proportion	Expected Number
LC	8	39	0.54	8.67
SC	8	27	0.38	6.00
DC		6	0.08	1.33
Totals	16	72	1.00	16.00

Projected Successes Revised χ^2 Contingency Table:

	Projected Successes	Expected Number	Chi Square
LC	8	8.67	0.051
SD	8	7.33	0.061
Totals	16.00	16.00	0.11
		critical value =	3.84
		$\alpha =$	0.05
		d.f. =	1

Ho can not be rejected.

Living Dead Raw χ^2 Contingency Table:

Conformity Classification	Living Dead	Total Population	Proportion	Expected Number
LC	5	39	0.54	7.04
SC	4	27	0.38	4.88
DC	4	6	0.08	1.08
Totals	13	72	1.00	13.00

Living Dead Revised χ^2 Contingency Table:

	Living Dead	Expected Number	Chi Square
LC	5	7.04	0.592
SD	8	5.96	0.700
Totals	13.00	13.00	1.29
		critical value =	3.84
		$\alpha =$	0.05
		d.f. =	1

Ho can not be rejected.

Failures Raw χ^2 Contingency Table:

Conformity Classification	Failures	Total Population	Proportion	Expected Number
LC	6	39	0.54	7.04
SC	5	27	0.38	4.88
DC	2	6	0.08	1.08
Totals	13	72	1.00	13.00

Failures Revised χ^2 Contingency Table:

	Failures	Expected Number	Chi Square
LC	6	7.04	0.154
SD	7	5.96	0.182
Totals	13.00	13.00	0.34
		critical value =	3.84
		$\alpha =$	0.05
		d.f. =	1

Ho can not be rejected.

APPENDIX V7

Survey Sample: Chi Square Test of Influence of Succession Events on Vision Change

Acronyms:

- VCC = Vision Changed Completely
- VDC = Vision Disregarded Completely
- VCS = Vision Changed Somewhat
- VDS = Vision Disregarded Somewhat
- VCY = Vision Changed Slightly
- VDY = Vision Disregarded Slightly
- VS = Vision Sustained
- CDS = VCS + VDS
- VY = VCY + VDY

	Succession Event Occurred (Yes)					Totals
	Super-Success	Projected Successes	Living Dead	Failures		
VCC	2	3	2	1		8
VDC			1	3		5
VCS	4	5	3	2		14
VDS			2	1		3
VCY	1	1	2			4
VDY						0
VS	3	3	3			9
Totals	10	12	9	7	5	43

	Succession Event Did Not Occur (No)					Totals
	Super-Success	Projected Successes	Living Dead	Failures		
VCC		1		1		2
VDC			1	1		2
VCS	2		2	4	3	11
VDS		1	2			3
VCY	1			1	1	3
VDY						0
VS	1	1	1		1	4
Totals	4	3	6	5	7	25

	Yes' + 'No' Samples					Totals
	Super-Success	Projected Successes	Living Dead	Failures		
VCC	2	4	0	2	2	10
VDC	0	0	2	1	4	7
VCS	6	5	5	6	3	25
VDS	0	1	2	2	1	6
VCY	2	1	2	1	1	7
VDY	0	0	0	0	0	0
VS	4	4	4	0	1	13
Totals	14	15	15	12	12	68

	Yes	Expected Proportion	Expected Number	Chi Square
VCC	8	0.15	6.32	0.444
VDC	5	0.10	4.43	0.074
CDS	17	0.46	19.60	0.346
VY	4	0.10	4.43	0.041
VS	9	0.19	8.22	0.074
Totals	43	1.00	43.00	0.979
			critical value	9.49
			$\alpha =$	0.05
			d.f =	4

Ho: Must be accepted. There is no difference in the observed 'yes' distribution and the expected or combined distribution.

APPENDIX V8
Survey Sample Proportions of Firm Outcomes

Survey Sample:

	SS	S	F	PS	LD
1	15	30	10	25	20
2	5	65	30	70	30
3	10	60	30	90	10
4	1	1	2	1	2
5	10	40	30	50	20
6	10	20	70	20	80
7	20	40	40	20	80
8	10	40	50	50	50
9	1	9	40	10	40
10	20	60	20	70	30
11	10	75	15	100	0
12	20	30	50	40	60
13	5	55	40	70	30
14	2	12	50	70	30
15	5	10	20	60	40
16	1	29	70	30	70
17	2	3	95	50	50
18	10	40	50	90	10
19	5	20	10	10	10
20	20	40	40	43	57
21	2	18	80	80	20
sum	184	697	842	1049	739
Mean	8.761905	33.19048	40.09524	49.95238	35.19048
std.dev.	6.811055	21.26175	24.28354	29.04733	24.33849

Note: Raw data is in %.

Culled Data:

	SS	S	F	PS	LD	
1	5	65	30	70	30	1
2	10	60	30	90	10	2
3	10	20	70	20	80	3
4	20	40	40	20	80	4
5	10	40	50	50	50	5
6	20	60	20	70	30	6
7	10	75	15	100	0	7
8	20	30	50	40	60	8
9	5	55	40	70	30	9
				70	30	10
				60	40	11
10	1	29	70	30	70	12
11	2	3	95	50	50	13
12	10	40	50	90	10	14
13	20	40	40	43	57	15
14	2	18	80	80	20	16
	145	575	680	953	647	
	10.3571	41.07143	48.57143	59.5625	40.4375	
	7.1102	20.25402	23.07418	24.74663	24.74663	

n1 = 14

n2 = 16

A) For the firms where their fates have not been decided:

1) If we look at the categories of firms whose fate has not been decided, each is an approximately normal distribution.

Since the sample size is < 30, I believe I should use a t-Test to determine if the mean value has shifted from what is reported in the literature.

Reported values of Projected Successes is 55.2%

Living Dead and Losers are reported to be 44.8%. In my study, I pool these variables and call them Living Dead.

Let's look at Projected Successes PS:

$$t = (.595625 - .552) / (0.2474663 / \sqrt{16}) = 0.705147$$

p-value of 0.71 is much less than p-value of $t_{\alpha/2} = t_{0.025} = 2.131$ with 15 degrees of freedom, so I must accept H_0 : There is no difference in the sample proportion mean and the population proportion mean.

These results indicate to me that the sample population mean is not statistically significantly different from the prior study's mean at the 95% confidence level.

B) For the firms whose fate has been decided:

1) I can pool the super-successes and successes to achieve a sample population that mirrors the established population. For ease of calculation I might as well look at the Failures.

$$t = (.48457 - 0.30) / (0.23074 / \sqrt{14}) = 2.992969$$

p-value (2.993) > p(t $\alpha/2 = 0.01$) = 2.65 ==> I must reject Ho and conclude that the failure rate has changed over time with a confidence level of 98%.

So what does this sample tell us about where the population mean now resides?

$$fpc = \sqrt{(N-n)/(N-1)} = \sqrt{(450-14)/(450-1)} = 0.985$$

The expected failure rate should be located between $0.484 \pm t_{\alpha/2} * 0.985 * s / \sqrt{n} = 0.484 \pm 2.16 * 0.061$

= 0.484 ± 0.131 , or 0.35 to 0.616 at a confidence level of 95%.

= $0.484 \pm 1.771 * 0.061 = 0.484 \pm 0.104 = 0.380$ to 0.588 at a confidence level of 90%.

Bottom line: This data doesn't give me a very good idea what the success / failure rates are.

APPENDIX V9
 Tests Looking for Differences between
 Non-respondent and Survey Samples for Years of Experience

	Non-Resp Population		Survey Population		
	Data Input	$\Sigma(xi*xi)$		Data Input	$\Sigma(xi*xi)$
1	1	1	1	1	1
2	2	4	2	2	4
3	2	4	3	2	4
4	3	9	4	2	4
5	3	9	5	2	4
6	3	9	6	2	4
7	3	9	7	2	4
8	3	9	8	2	4
9	3	9	9	2	4
10	3	9	10	3	9
11	4	16	11	3	9
12	4	16	12	3	9
13	4	16	13	3	9
14	4	16	14	3	9
Sum =	42	136	15	3	9
x_1^{\wedge} =	3.00		16	3	9
s_1 =	0.877058		17	3	9
			18	3	9
			19	3	9
			20	3	9
			21	3	9
			22	4	16
			23	4	16
			24	4	16
			25	4	16
			26	4	16
			27	4	16
			28	4	16
			29	4	16
			30	4	16
			31	4	16
			32	4	16
			33	4	16
			34	4	16
			35	4	16
			36	4	16
			37	4	16
			sum =	117	397
			x_2^{\wedge} =	3.16	
			s_2 =	0.866459	
			s_2^2 =	0.750751	

H0: There is no difference in the non-response sample and the survey sample:

$s_1^2 = 0.769231$

$s^2 = ((n_1 - 1) * s_1^2 + (n_2 - 1) * s_2^2) / (n_1 + n_2 - 2) =$

$s^2 = 0.755654$

$t = (x_1^{\wedge} - x_2^{\wedge}) / \sqrt{s^2(1/n_1 + 1/n_2)} =$

t = -0.5945

$t_{\alpha/2} = \pm 1.96$

d.f. = 49

Ho must be accepted.

Coding:
 1 = 1 - 3 Years of Experience
 2 = 4 - 10 Years of Experience
 3 = 11 - 20 Years of Experience
 4 = > 20 Years of Experience

Data Values	Survey Tally A	Non-resp. Tally B	Rank Values	A Ranks	B Ranks
1	1	2	1.5	1.5	1.5
2	1,5,6,8,9,10	7,12	7.5	60	15
3	21,23,25,27	14,16,18,20	22	264	154
4	39,40,42,43	36,41,46,50	41.5	664	166
				989.5	336.5

checksum 1326

$z = 0.5804$

$Z_c = \pm 1.96$

Ho can not be rejected.

APPENDIX V10

Tests Looking for Differences between Non-respondent and Survey Samples
for Belief in the Need for a Vision

Non-Response Population			Survey Population		
	Data Input	$\Sigma(xi*xi)$		Data Input	$\Sigma(xi*xi)$
1	2	4	1	3	9
2	4	16	2	3	9
3	4	16	3	4	16
4	5	25	4	4	16
5	5	25	5	4	16
6	5	25	6	4	16
7	5	25	7	4	16
8	5	25	8	4	16
9	5	25	9	4	16
10	5	25	10	4	16
11	5	25	11	4	16
12	5	25	12	4	16
13	5	25	13	4	16
14	5	25	14	5	25
Sum =	65	311	15	5	25
x_1^{\wedge} =	4.64		16	5	25
s_1 =	0.841897		17	5	25
			18	5	25
			19	5	25
			20	5	25
			21	5	25
			22	5	25
			23	5	25
			24	5	25
			25	5	25
			26	5	25
			27	5	25
			28	5	25
			29	5	25
			30	5	25
			31	5	25
			32	5	25
			33	5	25
			34	5	25
			35	5	25
			36	5	25
			37	5	25
			sum =	170	794
			x_2^{\wedge} =	4.59	
			s_2 =	0.599048	
			s_2^2 =	0.358859	

H0: There is no difference between the non-response sample and the survey sample:

$s_1^2 = 0.708791$

$s^2 = ((n_1 - 1) * s_1^2 + (n_2 - 1) * s_2^2) / (n_1 + n_2 - 2) =$

$s^2 = 0.451698$

$t = (x_1^{\wedge} - x_2^{\wedge}) / \sqrt{s^2(1/n_1 + 1/n_2)} =$

t = 0.2289

$t_{\alpha/2} = \pm 1.96$

d.f. = 49

Ho must be accepted.

Coding:
 1 = Strongly Disbelieve
 2 = Disbelieve
 3 = Neither Believe or Disbelieve
 4 = Believe
 5 = Strongly Believe

Data Values	Survey Tally A	Non-resp Tally B	Rank Values	A Ranks	B Ranks
1					
2		1	1		1
3	2,3		2.5	5	
4	3,10,11,12	9,15	10	110	20
5	17-40	41-51	34	816	374
				931	395

Checksum 1326

z = -0.6543

Zc = ± 1.96

Ho can not be rejected.

APPENDIX V11

Test Looking for a Difference between Non-respondent and Survey Sample Firm Outcome Coded Mean Values

Coding & Acronyms:

Super Successes = SS =	5
Successes = S =	4
Projected Successes = PS =	3
Living Dead = LD =	2
Failures = F =	1

Non-respondent Sample

	Count		Data Input	Σ(xi*xi)
SS	6		30	150
S	6		24	96
PS	10		30	90
LD	7		14	28
F	7		7	7
Totals	36	Sum =	105	371
		$x_1^{\wedge} =$	2.9167	
		$s_1 =$	1.360	

Survey Sample

	Count		Data Input	Σ(xi*xi)
SS	18		90	450
S	24		96	384
PS	25		75	225
LD	21		42	84
F	21		21	21
Totals	109	Sum =	324	1164
		$x_2^{\wedge} =$	2.9725	
		$s_2 =$	1.364	

H0: There is no difference in the non-response sample and the survey sample:

Standard Error = 0.261642

z = -0.2133

critical value = ± 1.96

Ho must be accepted.

APPENDIX V12

Fisher's Exact Test (FET), *t*-Test, and *z*-Test for Proportions of Survey and Non-respondent Sample Respondents Experiencing a Succession Event

Acronyms:

SE = Succession Event

Fisher's Exact Test:

	Observed Table				Next Stronger Table		
	SE	No SE	Total		SE	No SE	Total
Non-response	8	5	13	Non-response	9	4	13
Survey	24	10	34	Survey	23	11	34
Total	32	15	47	Total	32	15	47

Pobserved = 0.22453

Pstronger = 0.272

	Next Stronger Table				Next Stronger Table		
	SE	No SE	Total		SE	No SE	Total
Non-response	10	3	13	Non-response	11	2	13
Survey	22	12	34	Survey	21	13	34
Total	32	15	47	Total	32	15	47

Pstronger = 0.20866

Pstronger = 0.096

	Next Stronger Table				Strongest Table		
	SE	No SE	Total		SE	No SE	Total
Non-response	12	1	13	Non-response	13	0	13
Survey	20	14	34	Survey	19	15	34
Total	32	15	47	Total	32	15	47

Pstronger = 0.02408

Pstrongest = 0.002

Ptotal = 0.8282

Probability the survey sample result and the non-respondent sample result are the same = 83%. There is no difference in the two percentages.

Student's t-Test:

$$t = p_1^{\wedge} - p_2^{\wedge} / \sqrt{(s^2 (1/n_1 + 1/n_2))}$$

$$s^2 = ((n_1-1)*(p_1^{\wedge}*q_1^{\wedge}/n_1) + (n_2 -1)*(p_2^{\wedge}*q_2^{\wedge}/n_2)) / (n_1+n_2 - 2)$$

$$p_1^{\wedge} = 0.70588$$

$$n_1 = 34$$

$$q_1^{\wedge} = 0.29412$$

$$p_2^{\wedge} = 0.61538$$

$$n_2 = 13$$

$$q_2^{\wedge} = 0.38462$$

$$\text{d.f.} = n_1 + n_2 - 2 = 45$$

$$s^2 = 0.00933$$

$$t = \mathbf{0.72829}$$

Ho: There is no difference between the proportion of non-respondents, which experienced a succession event, and the proportion of the survey sample which experienced a succession event.

For $\alpha = 0.05$, $t_c = t_{\alpha/2} = 1.96$ with 45 d.f.

$t < t_c$, so Ho must be accepted.

Large Sample z-Test:

Survey sample proportion with a succession event equals: 0.706

Non-respondent sample proportion with a succession event equals: 0.615

Ho: There is no difference between the proportion of Survey sample respondents who had a succession event and the proportion of non-respondent sample respondents who had a succession event.

$$z = p_1^{\wedge} - p_2^{\wedge} / \sqrt{((p_1^{\wedge} * q_1^{\wedge} / n_1) + (p_2^{\wedge} * q_2^{\wedge} / n_2))} =$$

$$z = \mathbf{0.58355} \quad \mathbf{0.58355 \text{ is less than } 1.96, \text{ so Ho must be accepted .}$$

APPENDIX V13

z -Test Statistic for Proportions of Survey and Non-respondent Firms
Experiencing a Succession Event

Firm Outcome	Counts	%
Super-success	10	63%
Success	12	75%
Projected Success	9	56%
Living Dead	7	44%
Failure	5	31%
Total	43	

Firm Outcome	Counts	%
Super-success	3	43%
Success	0	0%
Projected Success	4	57%
Living Dead	5	71%
Failure	2	29%
Total	14	

Proportion of Survey Sample p_2^{\wedge} that had a succession event = 0.5972

Proportion of Non-respondent Sample p_1^{\wedge} that had a succession event = 0.4118

z-Test of Significance:

$$z = (p_1^{\wedge} - p_2^{\wedge}) / \sqrt{((p_1^{\wedge} * q_1^{\wedge}/n_1) + p_2^{\wedge} * q_2^{\wedge}/n_2))} =$$

z = -1.83

APPENDIX V14

Comparison of Survey and Non-respondent Proportions of Firms Which Have Articulated a Vision in Writing Using a Large Sample z -Test

	Survey Population			Totals
	Yes	No	N/A	
SS	10	4	1	15
S	8	6	1	15
PS	11	4	1	16
LD	6	6	1	13
F	7	4	2	13
Totals	42	24	6	72

Proportion responding 'Yes' = 0.583

	Non-respondent Population			Totals
	Yes	No	N/A	
SS	6	0	0	6
S	5	1	0	6
PS	5	2	0	7
LD	5	2	0	7
F	3	3	1	7
Totals	24	8	1	33

Proportion responding 'Yes' = 0.727

Acronyms:

- SS = Super-successes
- S = Successes
- PS = Projected Successes
- LD = Living Dead
- F = Failures
- NA = Not Applicable or No Vision

z = -1.4857

Zc = -1.96 @ $\alpha/2 = 0.025$

Zc = -1.645 at $\alpha/2 = 0.05$

Ho must be accepted. There is no difference in the survey and non-respondent proportions which have articulated a vision in writing.

APPENDIX V15

Comparison of Survey Count with Non-response Count for Vision Value Using Chi Square Test

	Survey				Totals
	HV	SV	NV	NA	
SS	13	2			15
S	9	6			15
PS	7	9			16
LD	2	6	5		13
F	1	8	4		13
Totals	32	31	9	0	72

	Non-Response Survey				Totals
	HV	SV	NV	NA	
SS	5	1			6
S	3	2		1	6
PS	2	6			8
LD	1	3	3		7
F	1	2	2	2	7
Totals	12	14	5	3	34

Acronyms:

SS = Super Success

S = Success

PS = Projected Success

LD = Living Dead

F = Failures

HV = Highly Valued Vision

SV = Somewhat Valued Vision

NV = Vision Not Valued

NA = No Vision or Not Applicable

Classification	Survey Count	Non- Response Count	Total
HV	32	12	44
SV	31	14	45
NV	9	5	14
NA		3	3
Totals	72	34	106

Classification	Survey Count	Expected Count	Non- Response Count	Expected Count	Total
HV	32	29.887	12	14.113	44
SV	31	30.566	14	14.434	45
NV & NA	9	11.547	8	5.453	17
Totals	72	72	34	34	106

d.f. = 2

$$\text{Chi Square} = \sum \sum (O_{ij} - E_{ij})^2 / E_{ij}$$

E11 =	29.887	E31 =	11.547
E12 =	14.113	E32 =	5.453
E21 =	30.566		
E22 =	14.434		

$$\chi^2 = \quad 0.1494 \quad 0.0062 \quad 0.3164 \quad 0.0130 \quad 0.5619 \quad 1.1899$$

$$\chi^2 = \quad \mathbf{2.2368}$$

$$\chi^2_{c} = \quad \mathbf{5.99 @ \alpha = 0.05}$$

$$\chi^2_{c} = \quad \mathbf{4.61 @ \alpha = 0.10}$$

Ho must be accepted. There is no difference in the two distributions of degree of vision value.

Classification	Survey Count	Non- Response Count	Total
SS	15	6	21
S	15	6	21
PS	16	8	24
LD	13	7	20
F	13	7	20
Totals	72	34	106

Classification	Survey Count	Expected Count	Non- Response Count	Expected Count	Total
SS	15	14.264	6	6.736	21
S	15	14.264	6	6.736	21
PS	16	16.302	8	7.698	24
LD	13	13.585	7	6.415	20
F	13	13.585	7	6.415	20
Totals	72	72.000	34	34.000	106

d.f. = 4

$$\text{Chi Square} = \sum \sum (O_{ij} - E_{ij})^2 / E_{ij}$$

E11 =	14.264	E32 =	7.698
E12 =	6.736	E41 =	13.585
E21 =	14.264	E42 =	6.415
E22 =	6.736	E51 =	13.585
E31 =	16.302	E52 =	6.415

$$\chi^2 = \begin{matrix} 0.0380 & 0.0380 & 0.0804 & 0.0804 & 0.0056 & 0.0252 & 0.0118 \\ & 0.0533 & 0.0252 & 0.0533 & & & \end{matrix}$$

$$\chi^2 = 0.4112$$

$$\chi^2_c = 7.779 @ \alpha = 0.10$$

APPENDIX V16

Comparison of Survey Count with Non-response Count for Vision Clarity Using Chi Square Test

	Survey Sample Results				Totals
	VCV	SCV	UV	VUV	
SS	10	4	1		15
S	10	5			15
PS	6	10	2		18
LD	2	7	3	3	15
F	4	4	4	2	14
Totals	32	30	10	5	77

	Non-Respondent Sample Results				Totals
	VCV	SCV	UV	VUV / NV	
SS	4	1		1	6
S	1	3	1	1	6
PS	2	5		1	8
LD	1	3	1	2	7
F	1	2	1	3	7
Totals	9	14	3	8	34

Acronyms:

SS = Super-success

S = Successes

PS = Projected Successes

LD = Living Dead

F = Failures

VCV = Very Clear Vision

SCV = Somewhat Clear Vision

UV = Unclear Vision

VUV = Very Unclear Vision

NV = No Vision

NUV = UV + VUV + NV

Classification	Survey Count	Non- Response Count	Total
VCV	32	9	41
SCV	30	14	44
UV	10	3	13
VUV	5	4	9
NV	0	4	4
Totals	77	34	111

Classification	Survey Count	Expected Count	Non- Response Count	Expected Count	Total
VCV	32	28.441	9	12.559	41
VSV	30	30.523	14	13.477	44
NUV	15	18.036	11	7.964	26
Totals	77	77	34	34	111

d.f. = 2

Ho: There is no difference between the survey sample distribution of vision clarity classification counts and the non-respondent sample distribution of vision clarity classification counts.

$$\text{Chi Square} = \sum \sum (O_{ij} - E_{ij})^2 / E_{ij}$$

E11 =	28.441	E31 =	18.036
E12 =	12.559	E32 =	7.964
E21 =	30.523		
E22 =	13.477		

$$\chi^2 = \quad 0.4452 \quad 0.0089 \quad 1.0083 \quad 0.0203 \quad 0.5111 \quad 1.1574$$

$$\chi^2 = \quad \mathbf{3.1513}$$

$$\chi^2_c = \quad \mathbf{5.991 @ \alpha = 0.05}$$

$$\chi^2_c = \quad \mathbf{4.605 @ \alpha = 0.10}$$

$$\chi^2 < \chi^2_c \text{ for } \alpha = 0.01, \text{ and } < \chi^2 \text{ for } \alpha = 0.05$$

Ho must be accepted.

APPENDIX V17

Comparison of Survey Count with Non-response Count for Vision Conformity
Using Chi Square Test

Classification	Survey Samples		Total
	Survey Count	Non-Response Count	
LC	39	5	44
SC	27	22	49
DC	6	5	11
NA		1	1
Totals	72	33	105

Classification	Survey Count	Expected Count	Non-Response		Total
			Count	Expected Count	
LC	39	30.171	5	13.829	44
SC	27	33.600	22	15.400	49
DC & NA	6	8.229	6	3.771	12
Totals	72	72	33	33	105

Acronyms:

LC = Largely Conforms
 SC = Somewhat Conforms
 DC = Does Not Conform
 NA = No Vision or Not Applicable

d.f. = 2

$$\text{Chi Square} = \sum \sum (O_{ij} - E_{ij})^2 / E_{ij}$$

E11 =	30.171	E31 =	8.229
E12 =	13.829	E32 =	3.771
E21 =	33.600		
E22 =	15.400		

$$\chi^2 = \quad 2.5834 \quad 1.2964 \quad 5.6364 \quad 2.8286 \quad 0.6036 \quad 1.3169$$

$$\chi^2 = \quad \mathbf{14.2652}$$

$$\chi^2_{c} = \quad \mathbf{5.99 @ \alpha = 0.05}$$

$$\chi^2_{c} = \quad \mathbf{4.61 @ \alpha = 0.10}$$

Ho must be rejected at $\alpha = 0.05$. There is a difference in the two populations with a 95% level of confidence.

APPENDIX V18

Comparison of Survey Count with Non-respondent Count for Vision Change or Disregard Using Chi Square Test

Classification	Survey Count	Non- Response Count	Total
VCC	10	4	14
VDC	7	1	8
VCS	25	11	36
VDS	6		6
VCY	7	8	15
VDY		2	2
VS	13	6	19
Totals	68	32	100

Classification	Survey Count	Expected Count	Non- Response Count	Expected Count	Total
VCC & VDC	17	14.960	5	7.040	22
VCS & VDS	31	28.560	11	13.440	42
VCY & VDY	7	11.560	10	5.440	17
VS	13	12.920	6	6.080	19
Totals	68	68	32	32	100

Acronyms:

VCC = Vision Changed Completely
VDC = Vision Disregarded Completely
VCS = Vision Changed Somewhat
VDS = Vision Disregarded Somewhat
VCY = Vision Changed Slightly
VDY = Vision Disregarded Slightly
VS = Vision Sustained

d.f. = 3

Chi Square = $\sum \sum (O_{ij} - E_{ij})^2 / E_{ij}$

E11 =	14.960	E31 =	11.560
E12 =	7.040	E32 =	5.440
E21 =	28.560	E41 =	12.920
E22 =	13.440	E42 =	6.080

$\chi^2 =$	0.2782	0.5911	0.2085	0.4430
	1.7988	3.8224	0.0005	0.0011

$\chi^2 =$ **7.1434**

$\chi^2_c =$ **7.815 @ $\alpha = 0.05$**

$\chi^2_c =$ **6.251 @ $\alpha = 0.10$**

Ho must be accepted at $\alpha = 0.05$. There is no difference in the two samples at the 95% level of confidence.

Ho must be rejected at $\alpha = 0.10$. There is a difference in the two samples with a 90% level of confidence.

APPENDIX V19

Student's *t*-Test for Differences between Survey and
Non-respondent Proportion Mean Values for Firm Outcomes

Comparison between original survey results and Non-response Bias test results

Survey Sample						
	SS	S	F	PS	LD	
1	5	65	30	70	30	1
2	10	60	30	90	10	2
3	10	20	70	20	80	3
4	20	40	40	20	80	4
5	10	40	50	50	50	5
6	20	60	20	70	30	6
7	10	75	15	100	0	7
8	20	30	50	40	60	8
9	5	55	40	70	30	9
				70	30	10
				60	40	11
10	1	29	70	30	70	12
11	2	3	95	50	50	13
12	10	40	50	90	10	14
13	20	40	40	43	57	15
14	2	18	80	80	20	16
Sum	145	575	680	953	647	
Mean	10.35714	41.07143	48.57143	59.5625	40.4375	
Std. Dev.	7.1102	20.25402	23.07418	24.74663	24.74663	

Non-respondent Sample						
	SS	S	F	PS	LD	
15	10	50	40	70	30	17
16	0	10	90	10	90	18
17	25	25	50	75	25	19
18	2	8	90			
19	25	15	60	75	25	20
20	5	10	85	35	65	21
21	1	7	92	10	90	22
22	10	20	70	10	90	23
23	20	70	10	90	10	24
Sum	98	215	587	375	425	
Mean	10.88889	23.88889	65.22222	46.875	53.125	
Std. Dev.	10.08023	21.87147	28.07035	34.21962	34.21962	

$n_1 = 14$ $n_2 = 9$ **d.f. = 21** $n_1 = 16$ $n_2 = 8$ **d.f. = 22**

Acronyms:

SS = Super-success
S = Success
PS = Projected Success
LD = Living Dead
F = Failures

Determination if SS₁ sample is the same as SS₂ sample:

Ho: There is no difference between the survey sample proportion mean for Super-successes and the non-repondent proportion mean for Super-successes.

$$s^2 = ((n_1 - 1) * s_1^2 + (n_2 - 1) * s_2^2) / (n_1 + n_2 - 2) = 70.00491$$

$$t = (x_1^{\wedge} - x_2^{\wedge}) / (\sqrt{s^2 * (1/n_1 + 1/n_2)}) = -0.148751$$

t < t_{α/2} = ± 2.080 , so Ho can not be rejected. The samples are effectively the same.

Determination if S₁ sample is the same as S₂ sample:

Ho: There is no difference between the survey sample proportion mean for Successes and the non-repondent proportion mean for Successes.

$$s^2 = 436.1818 \quad t = 1.925639$$

t_{α/2} = 1.721 > t > -ta/2 = ± 2.080, so Ho must be rejected at the 90% confidence level. The difference in the sample means is tending toward significant.

Determination if F₁ population is the same as F₂ population:

Ho: There is no difference between the survey sample proportion mean for Failures and the non-repondent proportion mean for Failures.

$$s^2 = 629.7611 \quad t = -1.552989$$

t < t_{α/2} = ± 1.721, so Ho can not be rejected. The samples are effectively the same.

Determination if PS₁ sample is the same as PS₂ sample:

Ho: There is no difference between the survey sample proportion mean for Projected Successes and the non-repondent proportion mean for Projected Successes.

$$s^2 = 869.1406 \quad t = 0.993872$$

t < t_{α/2} = ± 1.717, so Ho can not be rejected. The samples are effectively the same.

Determination if LD₁ sample is the same as LD₂ sample:

Ho: There is no difference between the survey sample proportion mean for Living Dead and the non-repondent proportion mean for Living Dead.

$$s^2 = 869.1406$$

$$t = -0.993872$$

$t < t_{\alpha/2} = \pm 1.717$, so Ho can not be rejected. The samples are effectively the same.

APPENDIX V20
 Combined Sample: Chi Square Test for Influence of Succession Events
 on Firm Outcome

Firms Experiencing a Succession Event		Total Firms
Firm Category	Count	Count
Super-success	13	21
Success	12	21
Projected success	13	24
Living Dead	12	20
Failure	7	20
Totals	57	106

Firm Category	Count	Total Firms	Proportion	Expected	χ^2
		Count		Count	
Super-success	13	21	0.20	11.292	0.2582
Success	12	21	0.20	11.292	0.0443
Projected success	13	24	0.23	12.906	0.0007
Living Dead	12	20	0.19	10.755	0.1442
Failure	7	20	0.19	10.755	1.3109
Totals	57	106			1.7583
	d.f.	α	χ^2_c	χ^2	
	4	0.05	9.49	1.7583	
		0.1	7.78	1.7583	

χ^2 is $>$ χ^2_c

Ho must be accepted. The distributions are the same.

APPENDIX V21

Combined Sample: Chi Square Test for Differences between Vision Classification as a Function of Firm Outcome

Firm Category	VCC	VDC	VCS	VDS	VCY	VDY	VS	Totals
Super-successes	2	0	8	0	4	0	5	19
Successes	5	0	7	1	2	0	5	20
Projected Successes	2	2	9	2	3	0	5	23
Living Dead	3	1	8	2	4	0	1	19
Failures	2	5	4	1	2	2	3	19
Totals	14	8	36	6	15	2	19	100

Super-success χ^2 Raw Contingency Table:

	Super- successes	Total Population	% of Total Population	Expected Number
VCC	2	14	0.14	2.66
VDC	0	8	0.08	1.52
VCS	8	36	0.36	6.84
VDS	0	6	0.06	1.14
VCY	4	15	0.15	2.85
VDY	0	2	0.02	0.38
VS	5	19	0.19	3.61
Totals	19	100	1	19

Super-success χ^2 Revised Contingency Tab

	Super successes	Total Population	% of Total Population	Expected Number	d.f	α	χ^2	χ^2_c
VSC	10	64	0.64	12.16	1	0.05	1.066	3.84
VSS	9	36	0.36	6.84	1	0.10		2.71
Totals	19	100	1	19				

Ho: $O_i = E_i$

Result:

χ^2 Statistic is < χ^2_c , so Ho can not be rejected. The distributions are the same.

Accronyms:

- VCC = Vision Changed Completely
- VDC = Vision Disregarded Completely
- VCS = Vision Changed Somewhat
- VDS = Vision Disregarded Somewhat
- VCY = Vision Changed Slightly
- VDY = Vision Disregarded Slightl
- VS = Vision Sustained
- VSC = VCC+VDC+VCS+VDS
- VSS = VCY+VDY+VS

Firm Category	VCC	VDC	VCS	VDS	VCY	VDY	VS	Totals
Super-successes	2	0	8	0	4	0	5	19
Successes	5	0	7	1	2	0	5	20
Projected Successes	2	2	9	2	3	0	5	23
Living Dead	3	1	8	2	4	0	1	19
Failures	2	5	4	1	2	2	3	19
Totals	14	8	36	6	15	2	19	100

Success χ^2 Raw Contingency Table: % of

	Successes	Total Population	Total Population	Expected Number
VCC	5	14	0.14	2.8
VDC	0	8	0.08	1.6
VCS	7	36	0.36	7.2
VDS	1	6	0.06	1.2
VCY	2	15	0.15	3
VDY	0	2	0.02	0.4
VS	5	19	0.19	3.8
Totals	20	100	1	20

Success χ^2 Revised Contingency Table: % of

	Successes	Total Population	Total Population	Expected Number	d.f	α	χ^2	χ^2_c
VSC	13	64	0.64	12.8	1	0.05	0.009	3.84
VSS	7	36	0.36	7.2	1	0.10		2.71
Totals	20	100	1	20				

Ho: $O_i = E_i$

Result:

χ^2 Statistic is < χ^2_c , so Ho can not be rejected. The distributions are the same.

Projected Successes χ^2 Raw Contingency T % of

	Projected Successes	Total Population	Total Population	Expected Number
VCC	2	14	0.14	3.22
VDC	2	8	0.08	1.84
VCS	9	36	0.36	8.28
VDS	2	6	0.06	1.38
VCY	3	15	0.15	3.45
VDY	0	2	0.02	0.46
VS	5	19	0.19	4.37
Totals	23	100	1	23

Projected Successes χ^2 Revised Contingency % of

	Projected Successes	Total Population	Total Population	Expected Number	d.f	α	χ^2	χ^2_c
VSC	15	64	0.64	14.72	1	0.05	0.015	3.84
VSS	8	36	0.36	8.28	1	0.10		2.71
Totals	23	100	1	23				

Ho: $O_i = E_i$

Result:

χ^2 Statistic is < χ^2_c , so Ho can not be rejected. The distributions are the same.

Firm Category	VCC	VDC	VCS	VDS	VCY	VDY	VS	Totals
Super-successes	2	0	8	0	4	0	5	19
Successes	5	0	7	1	2	0	5	20
Projected Successes	2	2	9	2	3	0	5	23
Living Dead	3	1	8	2	4	0	1	19
Failures	2	5	4	1	2	2	3	19
Totals	14	8	36	6	15	2	19	100

Living Dead χ^2 Raw Contingency Table:

	Total	Total	% of	
	Living Dead	Population	Population	Expected
	Population	Population	Number	
VCC	3	14	0.14	3.36
VDC	6	8	0.08	1.92
VCS	8	36	0.36	8.64
VDS	2	6	0.06	1.44
VCY	4	15	0.15	3.6
VDY	0	2	0.02	0.48
VS	1	19	0.19	4.56
Totals	24	100	1	24

Living Dead χ^2 Revised Contingency Table:

	Total	Total	% of		d.f	α	χ^2	χ^2_c
	Living Dead	Population	Population	Number				
	Population	Population	Number					
VSC	19	64	0.64	15.36	1	0.05	2.396	3.84
VSS	5	36	0.36	8.64	1	0.10		2.71
Totals	24	100	1	24				

Ho: $O_i = E_i$
 Result: $\chi^2_{c^*}$ so Ho can not be rejected. The distributions are the same.

χ^2 Statistic is < Failures

	Total	Total	% of	
	Failures	Population	Population	Expected
	Population	Population	Number	
VCC	2	14	0.14	2.66
VDC	5	8	0.08	1.52
VCS	4	36	0.36	6.84
VDS	1	6	0.06	1.14
VCY	2	15	0.15	2.85
VDY	2	2	0.02	0.38
VS	3	19	0.19	3.61
Totals	19	100	1	19

Failures χ^2 Revised Contingency Table:

	Total	Total	% of		d.f	α	χ^2	χ^2_c
	Failures	Population	Population	Number				
	Population	Population	Number					
VSC	12	64	0.64	12.16	1	0.05	0.006	3.84
VSS	7	36	0.36	6.84	1	0.10		2.71
Totals	19	100	1	19				

Ho: $O_i = E_i$
 Result: $\chi^2_{c^*}$ so Ho can not be rejected. The distributions are the same.

χ^2 Statistic is <

APPENDIX V22

Combined Sample: Chi Square Test for Differences between Vision Valuation Counts as a Function of Firm Outcome

Firm Category	HV	SV	NV	N/A	Totals
Super-successes	18	3	0	1	22
Successes	12	8	0	2	22
Projected Successes	9	15	0	0	24
Living Dead	3	9	8	0	20
Failures	2	10	6	2	20
Totals	44	45	14	5	108

Super-success χ^2 Raw Contingency Table:

	Super-successes	Total Population	% of Total Population	Expected Number
HV	18	44	0.407	8.963
SV	3	45	0.417	9.167
NV	0	14	0.130	2.852
N/A	1	5	0.046	1.019
Totals	22	108	1	22

Super-success χ^2 Revised Contingency Table:

	Super-successes	Total Population	% of Total Population	Expected Number	d.f	α	χ^2	χ^2_c
HV	18	44	0.4074	8.9630	1	0.10	15.376	3.84
NVA	4	64	0.5926	13.0370				2.71
Totals	22	108	1	22				

Ho: $O_i = E_i$ Result:

χ^2 Statistic is > χ^2_c , so Ho must be rejected. The distributions are not the same.

Accronyms:

- HV = Highly Valued Vision
- SV = Somewhat Valued Vision
- NV = Vision Not Valued
- N/A = Not Applicable or No Vision
- NVA = SV + NV + N/A
- VDY = Vision Disregarded Slightl

Firm Category	HV	SV	NV	N/A	Totals
Super-successes	18	3	0	1	22
Successes	12	8	0	2	22
Projected Successes	9	15	0	0	24
Living Dead	3	9	8	0	20
Failures	2	10	6	2	20
Totals	44	45	14	5	108

Success χ^2 Raw Contingency Table:

		Total	% of Total	Expected
	Successes	Population	Population	Number
HV	12	44	0.407	8.963
SV	8	45	0.417	9.167
NV	0	14	0.130	2.852
N/A	2	5	0.046	1.019
Totals	22	108	1	22

Success χ^2 Revised Contingency Table:

	Total	Total	Expected	d.f	α	χ^2	χ^2_c
	Successes	Population	Population	Number	1	0.05	1.737
HV	12	44	0.4074	8.9630	1	0.10	2.71
NVA	10	64	0.5926	13.0370			
Totals	22	108	1	22			

Ho: $O_i = E_i$

χ^2 Statistic is <

Result:

χ^2_c , so Ho can not be rejected. The distributions are the same.

Proj. Successes χ^2 Raw Contingency Table

		Total	% of Total	Expected
	Proj. Successes	Population	Population	Number
HV	9	44	0.407	9.778
SV	15	45	0.417	10.000
NV	0	14	0.130	3.111
N/A	0	5	0.046	1.111
Totals	24	108	1	24

Proj. Successes χ^2 Revised Contingency Table:

	Total	Total	Expected	d.f	α	χ^2	χ^2_c
	Proj. Successes	Population	Population	Number	1	0.05	0.104
HV	9	44	0.4074	9.7778	1	0.10	2.71
NVA	15	64	0.5926	14.2222			
Totals	24	108	1	24			

Ho: $O_i = E_i$

χ^2 Statistic is <

Result:

χ^2_c , so Ho can not be rejected. The distributions are the same.

Firm Category	HV	SV	NV	N/A	Totals
Super-successes	18	3	0	1	22
Successes	12	8	0	2	22
Projected Successes	9	15	0	0	24
Living Dead	3	9	8	0	20
Failures	2	10	6	2	20
Totals	44	45	14	5	108

Living Dead χ^2 Raw Contingency Table:

	Total	% of Total	Expected
	Living Dead Population	Population	Number
HV	3	44	0.407
SV	9	45	0.417
NV	8	14	0.130
N/A	0	5	0.046
Totals	20	108	1

Living Dead χ^2 Revised Contingency Table:

	Total	% of Total	Expected	d.f	α	χ^2	χ^2_c
	Living Dead Population	Population	Number	1	0.05	5.489	3.84
HV	3	44	0.4074	1	0.10		2.71
NVA	17	64	0.5926				
Totals	20	108	1				

Ho: $O_i = E_i$ Result:
 χ^2 Statistic is $>$ χ^2_c , so Ho must be rejected. The distributions are not the same.

Failures χ^2 Raw Contingency Table:

	Total	% of Total	Expected
	Failures	Population	Population
HV	2	44	0.407
SV	10	45	0.417
NV	6	14	0.130
N/A	2	5	0.046
Totals	20	108	1

Failures χ^2 Revised Contingency Table:

	Total	% of Total	Expected	d.f	α	χ^2	χ^2_c
	Failures	Population	Population	Number	1	0.05	7.828
HV	2	44	0.4074	1	0.10		2.71
NVA	18	64	0.5926				
Totals	20	108	1				

Ho: $O_i = E_i$ Result:
 χ^2 Statistic is $>$ χ^2_c , so Ho must be rejected. The distributions are not the same.

APPENDIX V23

Combined Sample: Chi Square Tests for Differences in Vision Clarity Counts as a Function of Firm Outcome

Firm Category	Very Clear Vision	Somewhat Clear Vision	Unclear Vision	Very Unclear Vision	No Vision	Responses
Super-successes	14	5	1	0	1	21
Successes	11	8	1	0	1	21
Proj. Successes	8	15	2	1	0	26
Living Dead	3	10	4	5	0	22
Failures	5	6	5	3	2	21
Totals	41	44	13	9	4	111

	Super-Successes	Projected Successes	Living Dead	Failures	Totals	
VCV	14	11	8	3	5	41
SCV	5	8	15	10	6	44
UV	1	1	2	4	5	13
VUV	0	0	1	5	3	9
NV	1	1	0	0	2	4
Totals	21	21	26	22	21	111

Accronyms:

- VCV = Very Clear Vision
- SCV = Somewhat Clear Vision
- UV = Unclear Vision
- VUV = Very Unclear Vision
- NV = No Vision
- NCV = SCV + UV + VUV

Super-successes χ^2 Raw Contingency Table:

	Super-Successes	Total Population	% of Total Population	Expected Number
VCV	14	41	0.369	7.76
SCV	5	44	0.396	8.32
UV	1	13	0.117	2.46
VUV	0	9	0.081	1.70
NV	1	4	0.036	0.76
Totals	21	111	1	21

Super-successes χ^2 Revised Contingency Table:

	Super-Successes	Total Population	% of Total Population	Expected Number	d.f.	α	χ^2	χ^2_c
VCV	14	41	0.369	7.76	1	0.05	7.9683	3.84
NCV	7	70	0.631	13.24	1	0.1		2.71
Totals	21.000	111.000	1.000	21.000				

Ho: Oi = Ei

χ^2 Statistic is > χ^2_c , so Ho must be rejected. The distributions are not the same.

Successes χ^2 Raw Contingency Table:

	Successes	Total Population	% of Total Population	Expected Number
VCV	11	41	0.369	7.76
SCV	8	44	0.396	8.32
UV	1	13	0.117	2.46
VUV	0	9	0.081	1.70
NV	1	4	0.036	0.76
Totals	21	111	1	21

Successes χ^2 Revised Contingency Table:

	Successes	Total Population	% of Total Population	Expected Number	d.f.	α	χ^2	χ^2_c
VCV	11	41	0.369	7.76	1	0.05	2.1503	3.84
NCV	10	70	0.631	13.24	1	0.1		2.71
Totals	21.000	111.000	1.000	21.000				

Ho: $O_i = E_i$

χ^2 Statistic is < χ^2_c , so Ho can not be rejected. The distributions are the same.

Projected Successes χ^2 Raw Contingency Table:

	Projected Successes	Total Population	% of Total Population	Expected Number
VCV	8	41	0.369	7.76
SCV	15	44	0.396	8.32
UV	2	13	0.117	2.46
VUV	1	9	0.081	1.70
NV	0	4	0.036	0.76
Totals	26	111	1	21

Projected Successes χ^2 Revised Contingency Table:

	Projected Successes	Total Population	% of Total Population	Expected Number	d.f.	α	χ^2	χ^2_c
VCV	8	41	0.369	7.76	1	0.05	1.7162	3.84
NCV	18	70	0.631	13.24	1	0.1		2.71
Totals	26.000	111.000	1.000	21.000				

Ho: $O_i = E_i$

χ^2 Statistic is < χ^2_c , so Ho can not be rejected. The distributions are the same.

Living Dead χ^2 Raw Contingency Table:

	Living Dead	Total Population	% of Total Population	Expected Number
VCV	3	41	0.369	7.76
SCV	10	44	0.396	8.32
UV	4	13	0.117	2.46
VUV	5	9	0.081	1.70
NV	0	4	0.036	0.76
Totals	22	111	1	21

Living Dead χ^2 Revised Contingency Table:

	Living Dead	Total Population	% of Total Population	Expected Number	d.f.	α	χ^2	χ^2_c
VCV	3	41	0.369	7.76	1	0.05	5.4195	3.84
NCV	19	70	0.631	13.24	1	0.1		2.71
Totals	22.000	111.000	1.000	21.000				

Ho: $O_i = E_i$

χ^2 Statistic is $> \chi^2_c$, so Ho must be rejected. The distributions are not the same.

Failures χ^2 Raw Contingency Table:

	Failures	Total Population	% of Total Population	Expected Number
VCV	5	41	0.369	7.76
SCV	6	44	0.396	8.32
UV	5	13	0.117	2.46
VUV	3	9	0.081	1.70
NV	2	4	0.036	0.76
Totals	21	111	1	21

Failures χ^2 Revised Contingency Table:

	Failures	Total Population	% of Total Population	Expected Number	d.f.	α	χ^2	χ^2_c
VCV	5	41	0.369	7.76	1	0.05	1.5536	3.84
NCV	16	70	0.631	13.24	1	0.1		2.71
Totals	21.000	111.000	1.000	21.000				

Ho: $O_i = E_i$

χ^2 Statistic is $< \chi^2_c$, so Ho cannot be rejected. The distributions are the same.

APPENDIX V24

Combined Sample: Chi Square Tests for Differences in Vision Conformity Counts as a Function of Firm Outcome

Firm Category	Largely Conforms	Somewhat Conforms	Does Not Conform	No Vision	Responses
Super-successes	17	4	0	1	22
Successes	8	11	1	1	21
Proj. Successes	8	16	0	0	24
Living Dead	5	9	6	0	20
Failures	6	9	4	1	20
Totals	44	49	11	3	107

	Super-Successes	Projected Successes	Living Dead	Failures	Totals
LC	17	8	5	6	44
SC	4	11	9	9	49
DC	0	1	6	4	11
NV	1	1	0	1	3
Totals	22	21	20	20	107

Accronyms:

- LC = Largely Conforms
- SC = Somewhat Conforms
- DC = Does Not Conform
- NV = No Vision
- SD = SC + DC + NV

Super-successes χ^2 Raw Contingency Table:

	Super-Successes	Total Population	% of Total Population	Expected Number
LC	17	44	0.411	9.05
SC	4	49	0.458	10.07
DC	0	11	0.103	2.26
NV	1	3	0.028	0.62
Totals	22	107	1	22

Super-successes χ^2 Revised Contingency Table:

	Super-Successes	Total Population	% of Total Population	Expected Number	d.f.	α	χ^2	χ^2_c
LC	17	44	0.411	9.05	1	0.05	11.8753	3.84
SD	5	63	0.589	12.95	1	0.1		2.71
Totals	22.000	107.000	1.000	22.000				

Ho: $O_i = E_i$

χ^2 Statistic is $> \chi^2_c$, so Ho must be rejected. The distributions are not the same.

Successes χ^2 Raw Contingency Table:

		Total	% of Total	Expected Number
	Successes	Population	Population	
LC	8	44	0.411	8.64
SC	11	49	0.458	9.62
DC	1	11	0.103	2.16
NV	1	3	0.028	0.59
Totals	21	107	1	21

Successes χ^2 Revised Contingency Table:

		Total	% of Total	Expected Number	d.f.	α	χ^2	χ^2_c
	Successes	Population	Population					
LC	8	44	0.411	8.64	1	0.05	0.0794	3.84
SD	13	63	0.589	12.36	1	0.1		2.71
Totals	21.000	107.000	1.000	21.000				

Ho: $O_i = E_i$

χ^2 Statistic is < χ^2_c , so Ho can not be rejected. The distributions are the same.

Projected Successes χ^2 Raw Contingency Table:

		Total	% of Total	Expected Number
	Projected Successes	Population	Population	
LC	8	44	0.411	9.87
SC	16	49	0.458	10.99
DC	0	11	0.103	2.47
NV	0	3	0.028	0.67
Totals	24	107	1	24

Projected Successes χ^2 Revised Contingency Table:

		Total	% of Total	Expected Number	d.f.	α	χ^2	χ^2_c
	Projected Successes	Population	Population					
LC	8	44	0.411	8.64	1	0.05	1.1157	3.84
SD	16	63	0.589	12.36	1	0.1		2.71
Totals	24.000	107.000	1.000	21.000				

Ho: $O_i = E_i$

χ^2 Statistic is < χ^2_c , so Ho can not be rejected. The distributions are the same.

Living Dead χ^2 Raw Contingency Table:

	Living Dead	Total Population	% of Total Population	Expected Number
LC	5	44	0.411	8.22
SC	9	49	0.458	9.16
DC	6	11	0.103	2.06
NV	0	3	0.028	0.56
Totals	20	107	1	20

Living Dead χ^2 Revised Contingency Table:

	Successes	Total Population	% of Total Population	Expected Number	d.f.	α	χ^2	χ^2_c
LC	5	44	0.411	8.22	1	0.05	2.1469	3.84
SD	15	63	0.589	11.78	1	0.1		2.71
Totals	20.000	107.000	1.000	20.000				

Ho: $O_i = E_i$

χ^2 Statistic is < χ^2_c , so Ho can not be rejected. The distributions are the same.

Failures

	Failures	Total Population	% of Total Population	Expected Number
LC	6	44	0.411	8.22
SC	9	49	0.458	9.16
DC	4	11	0.103	2.06
NV	1	3	0.028	0.56
Totals	20	107	1	20

Failures χ^2 Revised Contingency Table:

	Failures	Total Population	% of Total Population	Expected Number	d.f.	α	χ^2	χ^2_c
LC	6	44	0.411	8.22	1	0.05	1.0217	3.84
SD	14	63	0.589	11.78	1	0.1		2.71
Totals	20.000	107.000	1.000	20.000				

Ho: $O_i = E_i$

χ^2 Statistic is < χ^2_c , so Ho can not be rejected. The distributions are the same.

APPENDIX V25

Combined Sample: Chi Square Test to Determine Influence of Succession Events on Vision Change

Acronyms are defined on Page 396.

	VCC	VDC	VCS	VDS	VCY	VDY	VS	Totals
Super-successes	2	0	8	0	4	0	5	19
Successes	5	0	7	1	2	0	5	20
Proj. Successes	2	2	9	2	3	0	5	23
Living Dead	3	1	8	2	4	0	1	19
Failures	2	5	4	1	2	2	3	19
Totals	14	8	36	6	15	2	19	100

Succession Event Occurred (Yes)

	Super - Successes	Projected Successes	Living Dead	Failures	Totals	
VCC	2	3	1	3	1	10
VDC			1	1	3	5
VCS	5	5	6	3	1	20
VDS				2	1	3
VCY	3	1	2	2	1	9
VDY						0
VS	3	3	3	1		10
Totals	13	12	13	12	7	57

Succession Event Did Not Occur (No)

	Super - Successes	Projected Successes	Living Dead	Failures	Totals	
VCC		2	1		1	4
VDC			1		2	3
VCS	3	2	3	5	3	16
VDS		1	2			3
VCY	1	1	1	2	1	6
VDY					2	2
VS	2	2	2		3	9
Totals	6	8	10	7	12	43

Combined Yes's & No's

	Super - Successes	Projected Successes	Living Dead	Failures	Totals	
VCC	2	5	2	3	2	14
VDC	0	0	2	1	5	8
VCS	8	7	9	8	4	36
VDS	0	1	2	2	1	6
VCY	4	2	3	4	2	15
VDY	0	0	0	0	2	2
VS	5	5	5	1	3	19
Totals	19	20	23	19	19	100

	Yes	Expected Proportion	Expected Number	Chi Square
VCC	10	0.14	7.98	0.511
VDC	5	0.08	4.56	0.042
CDS	23	0.42	23.94	0.037
VY	9	0.17	9.69	0.049
VS	10	0.19	10.83	0.064
Totals	57	1.00	57.00	0.703

Ho: $O_i = E_i$	d.f	α	χ^2	χ^2_c
	4	0.05	0.174	9.49
		0.1		7.78

χ^2 statistic is $< \chi^2_c$, so H_0 can not be rejected. The distributions are the same.

Acronyms:

- VCC = Vision Changed Completely
- VDC = Vision Disregarded Completely
- VCS = Vision Changed Somewhat
- VDS = Vision Disregarded Somewhat
- VCY = Vision Changed Slightly
- VDY = Vision Disregarded Slightly
- VS = Vision Sustained
- CDS = VCS + VDS
- VY = VCY + VDY

APPENDIX V26

Combined Sample: Comparisons of Proportions of Firm Outcomes

	SS	S	F	PS	LD	
1	5	65	30	70	30	1
2	10	60	30	90	10	2
3	10	20	70	20	80	3
4	20	40	40	20	80	4
5	10	40	50	50	50	5
6	20	60	20	70	30	6
7	10	75	15	100	0	7
8	20	30	50	40	60	8
9	5	55	40	70	30	9
				70	30	10
				60	40	11
10	1	29	70	30	70	12
11	2	3	95	50	50	13
12	10	40	50	90	10	14
13	20	40	40	43	57	15
14	2	18	80	80	20	16
15	10	50	40	70	30	17
16	0	10	90	10	90	18
17	25	25	50	75	25	19
18	2	8	90			
19	25	15	60	75	25	20
20	5	10	85	35	65	21
21	1	7	92	10	90	22
22	10	20	70	10	90	23
23	20	70	10	90	10	24
sum	243	790	1267	1328	1072	
Mean	10.56522	34.34783	55.08696	55.33333	44.66667	
std.dev.	8.178831	22.13309	25.88772	28.16206	28.16206	

n1 = 23

n2 = 24

A) For the firms where their fates have not been decided:

- 1) If we look at the categories of firms whose fate has not been decided, each is an approximately normal distribution.
- 2) Since the sample size is < 30, a t-Test is used to determine if the proportion mean value has shifted from what was reported in the literature.
- 3) Reported values of Projected Successes is 55.2%.
- 4) Living Dead were reported to be 44.8%.
- 5) Let's look at Projected Successes PS:

$$t = (.553 - .552) / (0.28162 / \sqrt{23}) = 0.0170$$

0.017 is much less than critical value of $t_{\alpha/2} = t_{0.025} = 2.069$ with 23 degrees of freedom.

Ho cannot be rejected. There is no difference between the sample proportion mean and the prior population proportion mean.

These results indicate the sample population proportion mean is not statistically significantly different from the prior study's mean at the 95% confidence level.

$$\begin{aligned} \text{Sampling mean } \bar{x} \text{ lies between } \bar{x} \pm t_{\alpha/2} * (s/\sqrt{n}) * \sqrt{((450-23)/22)} = \\ = 0.553 \pm 2.069 * .975 * 0.2862 / \sqrt{24} \\ = 0.553 \pm 0.12 \end{aligned}$$

$$\text{Finite Population Factor} = \sqrt{N-n/n-1} = 0.975193$$

B) For the firms whose fate has been decided:

- 1) The Super-successes and Successes have been pooled to achieve a sample population that mirrors the established population data. For ease of calculation let's look at the Failures.

$$t = (.5509 - 0.30) / (0.2589 / \sqrt{23}) = 4.6476 \quad \text{d.f.} = 22$$

p-value (4.65) < p($t_{0.025}$) = 2.074 ==> Ho must be rejected. The failure rate has changed with a confidence level of 95%.

$$\begin{aligned} \text{The expected Failure proportion mean should be between } 0.5509 \pm t_{\alpha/2} * 0.975 * s / \sqrt{(n)} = \\ = 0.5509 \pm 2.074 * 0.054 * 0.975 \\ = 0.551 \pm 0.109, \text{ or } 0.442 \text{ to } 0.66 \text{ at a confidence level of } 95\%. \end{aligned}$$

Bottom line: This data doesn't precisely predict what the success / failure rates were.

APPENDIX W
List of Study Findings

The following is a comprehensive list of this Study's Findings and it is organized as follows:

1. Vision-related Findings
2. Succession Event Findings
3. Success/Failure Rate Findings
4. Non-response Bias Test Findings

Vision-related Findings

Findings associated with the founder's vision are listed as follows:

1. A very high percentage (96%) of VFSC firms is estimated to have a vision.
2. Super-successes, Successes, and Projected Successes were more likely to have had visions articulated in writing than did Living Dead and Failure firms.
3. Vision 'change' or 'disregard' was commonplace in the studied VFSCs.
 - a. 81% of firms (in this study) had changed or disregarded visions.
 - b. Vision change or disregard did not adversely affect success rates.
 - c. Living Dead and Failure firms rarely sustained founder's(s') visions.
4. Super-successes had a greater number of 'highly valued' vision classification counts by (Board) Directors than one might expect from the composite of the five possible firm outcomes.
 - a. Living Dead and Failure firms had visions that were less valued than expected by (Board) Directors.

5. Super-successes had visions that ‘largely conformed’ to the study’s definition for a vision.
 - a. Other firm outcomes had visions in line with expectations.
 - b. VFSC vision conformity with the entrepreneurship literature’s converging definitions for a vision was found to be sporadic.
6. Super-successes had a higher percentage of ‘very clear’ visions than one might expect from the composite of the five possible firm outcomes.
 - a. Living Dead firms had fewer than expected ‘very clear’ visions.

Succession Event Findings

Findings associated with succession events are listed as follows:

1. Roughly half (53.8% in this study) of VFSCs experienced a succession event.
 - a. 68% of combined survey and non-respondent sample respondents reported at least one instance of a succession event.
2. Succession events did not influence the degree to which visions were ‘sustained’, ‘changed’, or ‘disregarded’.

Success/Failure Rate Findings

Findings associated with success/failure rates are listed as follows:

1. VFSC success rates have dropped statistically significantly since 1977.
 - a. (Cooper & Bruno, 1977) estimated success rates at 70%.
 - b. The proportion mean of Successes was estimated to lie between 0.44 and 0.66 at a 95% confidence level.

2. Projected Success and Living Dead rates have not changed in a statistically significant fashion from the values reported by (Ruhnka, Feldman, & Dean, 1992).
 - a. The mean proportion of Projected Successes was estimated to lie between 0.44 and 0.67 at a 95% confidence level.
 - b. (Ruhnka et al., 1992) reported Projected Success rates at 55.2%.

Non-response Bias Test Findings

Findings associated with the Non-response Bias Test are listed as follows:

1. Non-response Bias Test results for this study were judged (by me) to be comparable to the results for the survey sample.

APPENDIX X
Cross Tabulation Results

Table 79

Cross-tabulations for Visions Articulated in Writing versus Vision Clarity, Conformity, & Value for Super-successes

Firm Outcome	Variable Classification	Vision Articulated in Writing		
		Yes	No	No Vision
Super-successes	Vision Value			
	Highly Valued	17	4	1
	Somewhat Value	3	1	0
	Not Valued	0	0	0
	N/A No Vision	0	0	1
	Vision Clarity			
	Very Clear Vision	14	5	0
	Somewhat Clear Vision	4	0	1
	Unclear Vision	1	0	0
	Very Unclear Vision	0	0	0
	No Vision	0	0	1
	Vision Conformity			
	Largely Conforms	18	4	0
	Somewhat Conforms	2	1	1
	Does Not Conform	0	0	0
	N/A No Vision	0	0	1

Table 80

Cross-tabulations for Visions Articulated in Writing versus Vision Clarity, Conformity, & Value for Successes

Firm Outcome	Variable Classification	Vision Articulated in Writing		
		Yes	No	No Vision
Successes	Vision Value			
	Highly Valued	12	2	1
	Somewhat Value	7	8	0
	Not Valued	0	0	0
	N/A No Vision	1	0	1
	Vision Clarity			
	Very Clear Vision	9	4	0
	Somewhat Clear Vision	7	5	1
	Unclear Vision	3	0	0
	Very Unclear Vision	0	0	0
	No Vision	0	0	1
	Vision Conformity			
	Largely Conforms	11	2	0
	Somewhat Conforms	7	5	1
	Does Not Conform	0	3	0
	N/A No Vision	0	0	1

Table 81

Cross-tabulations for Visions Articulated in Writing versus Vision Clarity, Conformity, & Value for Projected Successes

Firm Outcome	Variable Classification	Vision Articulated in Writing		
		Yes	No	No Vision
Projected Successes	Vision Value			
	Highly Valued	7	1	1
	Somewhat Value	11	5	0
	Not Valued	1	0	0
	N/A No Vision	0	0	0
	Vision Clarity			
	Very Clear Vision	7	0	1
	Somewhat Clear Vision	10	5	0
	Unclear Vision	1	1	0
	Very Unclear Vision	1	0	0
	No Vision	0	0	0
	Vision Conformity			
	Largely Conforms	8	1	0
	Somewhat Conforms	11	5	1
	Does Not Conform	0	0	0
N/A No Vision	0	0	0	

Table 82

Cross-tabulations for Visions Articulated in Writing versus Vision Clarity, Conformity, & Value for Living Dead

Firm Outcome	Variable Classification	Vision Articulated in Writing		
		Yes	No	No Vision
Living Dead	Vision Value			
	Highly Valued	5	1	0
	Somewhat Value	8	2	1
	Not Valued	3	6	0
	N/A No Vision	0	0	0
	Vision Clarity			
	Very Clear Vision	4	0	0
	Somewhat Clear Vision	8	3	1
	Unclear Vision	3	1	0
	Very Unclear Vision	1	5	0
	No Vision	0	0	0
	Vision Conformity			
	Largely Conforms	8	0	0
	Somewhat Conforms	6	2	1
	Does Not Conform	1	7	0
	N/A No Vision	0	0	0

Table 83

Cross-tabulations for Visions Articulated in Writing versus Vision Clarity, Conformity, & Value for Failures

Firm Outcome	Variable Classification	Vision Articulated in Writing		
		Yes	No	No Vision
Failures	Vision Value			
	Highly Valued	3	0	0
	Somewhat Value	5	8	2
	Not Valued	3	4	0
	N/A No Vision	1	0	2
	Vision Clarity			
	Very Clear Vision	4	3	0
	Somewhat Clear Vision	5	2	1
	Unclear Vision	2	3	1
	Very Unclear Vision	1	1	0
	No Vision	0	1	2
	Vision Conformity			
	Largely Conforms	6	2	0
	Somewhat Conforms	5	6	1
	Does Not Conform	0	4	1
	N/A No Vision	0	0	2