A STAKEHOLDER PERSPECTIVE ON ENTREPRENEURIAL PERFORMANCE AND SUCCESS VENTURE STAKEHOLDERS IN THE AMERICAN SOFTWARE SECTOR

Plant, Charles Richard

Josip Juraj Strossmayer University of Osijek

Faculty of Economics in Osijek

Postgraduate inter-university interdisciplinary study

“ENTREPRENEURSHIP AND INNOVATIVENESS”

Charles Richard Plant

A STAKEHOLDER PERSPECTIVE ON ENTREPRENEURIAL PERFORMANCE AND SUCCESS
VENTURE CAPITAL STAKEHOLDERS IN THE AMERICAN SOFTWARE SECTOR

DOCTORAL THESIS

Mentor: Professor emeritus, Slavica Singer, Ph. D.

Toronto, Canada, 2022

BASIC DOCUMENTATION CARD

Josip Juraj Strossmayer University of Osijek
PhD thesis
Faculty of Economics

Scientific Area: Social Sciences
Scientific Field: Economics

A STAKEHOLDER PERSPECTIVE ON ENTREPRENEURIAL PERFORMANCE AND SUCCESS VENTURE CAPITAL STAKEHOLDERS IN THE AMERICAN SOFTWARE SECTOR

Charles Richard Plant

Thesis presented at: Osijek
Supervisor: Professor emeritus, Slavica Singer, Ph. D.

Short abstract:
The purpose of this thesis is to review and critique the methods used in academic literature to codify whether an entrepreneurial firm is successful. As a result, future research can be undertaken to identify the critical success factors for firms. In particular this thesis examines the rationale for categorizing companies by stakeholder in order to establish what success means versus performance.

This thesis used a literature review to establish the current state of academic literature on the subject of success and performance in entrepreneurial ventures. It tested a number of performance metrics used to codify success as they apply to venture capital backed software companies in the US.

It was found that venture capitalists codify a firm as successful when they receive five times their investment back in an exit. It was determined that four particular performance events including, firm survival, raising a round of venture capital, exiting through a merger or acquisition or exiting through an initial public offering do not necessarily meet the 5 times threshold for codification of a firm as successful. It was further determined that employee growth, profitability, and employee productivity are not effective performance metrics when codifying a firm as successful but that revenue growth (at levels in excess of those typically used), can be an effective codifier of success. This thesis establishes financial velocity as a measure of performance but not success where there is neither valuation nor financial data for a firm. It examines capital efficiency as a potential success metric and introduces growth efficiency as a particularly effective codifier of success where valuation of a firm is not known.

Number of pages: 198

Number of exhibits: 68
Number of references: 320
Original in: English
Keywords: Entrepreneurship, Success, Performance, Stakeholders, Venture Capital, Growth Efficiency, Financial Velocity

Date of the thesis defense: December 1, 2022.

Committee:
1. Natasha Sarlija, PhD
2. Josip Mesaric, PhD
3. Antti Paasio, PhD
4. Sanja Pfeifer, PhD
5. Mirna Lecko Simic, PhD
6. Ruzica Stanic mag. Oec.

Thesis deposited in: National and University Library in Zagreb, Ul. Hrvatske bratske zajednice 4, Zagreb; City and University Library of Osijek, Europska avenija 24, Osijek; Josip Juraj Strossmayer University of Osijek, Trg sv. Trojstva 3, Osijek; Faculty of Economics in Osijek, Trg Lj. Gaja 7, Osijek

STATEMENT
ON ACADEMIC INTEGRITY, TRANSFER OF INTELLECTUAL PROPERTY RIGHTS, CONSENT FOR PUBLICATION IN INSTITUTIONAL REPOSITORIES AND IDENTICALNESS OF DIGITAL AND PRINTED VERSION OF THE DISSERTATION

1. By which I declare and confirm with my signature that the doctoral dissertation is exclusively the result of personal work based on my research and relies on published literature. I confirm compliance with the inviolability of authorship and correct citation of the works of other authors and references to them.
2. By which I declare that the Faculty of Economics in Osijek, without compensation and in temporally and territorially unlimited scope, is the holder of all intellectual property rights in relation to the said dissertation under the Creative Commons Attribution – NonCommercial – ShareAlike 3.0 Croatia license
3. By which I declare that I agree to have my dissertation permanently stored and published in the institutional digital repository of the Faculty of Economics in Osijek, the repository of the Josip Juraj Strossmayer University of Osijek, and the publicly available repository of the National and University Library in Zagreb (in accordance with the provisions of the Act on Scientific Activity and Higher Education, NN No. 123/03, 198/03, 105/04, 174/04, 02/07, 46/07, 45/09, 63/11, 94/13, 139/13, 101/14, 60/15).
4. I declare that I am the author of the submitted dissertation and that the content of the submitted electronic file is completely identical to the completed printed version of the dissertation submitted for the purpose of defending it.

Name and surname of the student: Charles Richard Plant

JMBAG: 366
OIB: 28247723748

Contact email: cplant@q3research.com

Name of the study: A STAKEHOLDER PERSPECTIVE ON ENTREPRENEURIAL PERFORMANCE AND SUCCESS: VENTURE CAPITAL STAKEHOLDERS IN THE AMERICAN SOFTWARE SECTOR

Mentor: Slavica Singer, PhD.

In Osijek, December 1, 2022

Abstract

Purpose – The purpose of this thesis is to review and critique the methods used in academic literature to codify whether an entrepreneurial firm is successful. As a result, future research can be undertaken to identify the critical success factors for firms. In particular this thesis examines the rationale for categorizing companies by stakeholder in order to establish what success means versus performance.

Design/methodology/approach – This thesis used a literature review to establish the current state of academic literature on the subject of success and performance in entrepreneurial ventures. It tested a number of performance metrics used to codify success as they apply to venture capital backed software companies in the US.

Findings – It was found that venture capitalists codify a firm as successful when they receive five times their investment back in an exit. It was determined that four particular performance events including, firm survival, raising a round of venture capital, exiting through a merger or acquisition or exiting through an initial public offering do not necessarily meet the 5 times threshold for codification of a firm as successful. It was further determined that employee growth, profitability, and employee productivity are not effective performance metrics when codifying a firm as successful but that revenue growth (at levels in excess of those typically used), can be an effective codifier of success. This thesis establishes financial velocity as a measure of performance but not success where there is neither valuation nor financial data for a firm. It examines capital efficiency as a potential success metric and introduces growth efficiency as a particularly effective codifier of success where valuation of a firm is not known.

Research limitations/implications – While establishing new directions for future research, this thesis only examined venture capital backed software companies in the US. Further research into different types of stakeholders in different industries in different countries will be needed to fully develop a stakeholder perspective in success literature.

Practical implications – The findings establish clear guidelines for firms to follow in determining growth objectives.

Originality/value – This thesis introduces a new method of classification of entrepreneurial ventures using stakeholder theory. It further examines different perspectives of success and establishes that stakeholder context matters in the definition of success. The thesis reconciles these different perspectives or contexts and determines that stakeholders should be the ones whose perspective should govern the codification of success. The thesis clearly separates performance from success, exhibits how performance does not necessarily equate to success and establishes three new metrics to be used to evaluate success and performance.

Keywords Entrepreneurship, Success, Performance, Stakeholders, Venture Capital, Growth Efficiency, Financial Velocity

Table of Contents

Table of Exhibits

Introduction

The original intent of this thesis was to explore the factors which lead to the success of venture capital backed software companies. In conducting a background review of the literature, an attempt was made to determine an appropriate definition of success to be able to apply different management practices against the success obtained. This literature review discovered an a priori problem – there was no definition of success upon which researchers had agreed. For research into factors which lead to success to have any impact, there should be an agreed upon methodology for the measurement of success. The absence of this such a definition creates a hinderance to further research. In order to be able to make further progress on factors that lead to success, the author decided it would be critical to undertake an examination of the subject of success itself, to determine why there has been a lack of agreement on this important subject and to clarify what success means, specifically to software companies with venture capital backing.

Research into entrepreneurship has grown dramatically over the last 35 years from a phenomenon without a conceptual framework (Shane and Venkataramanan, 2000) to a maturing field of study (Meyer et al. 2012). While classes in entrepreneurship have grown since first being introduced at Harvard in 1947 to approximately 1,400 schools offering such courses in 1999 (Katz 2003), the pace of academic research has not been as fast. Focus on the subject has grown since its earlier days in 1987 to 1999 when there were 44 refereed journals (Katz 2003). Today, the field of entrepreneurship research has become much more institutionalized (Fayolle et al 2016).

The roots of thinking into entrepreneurship go back to the mid 18th century and since then, there have been three eras of entrepreneurial thinking: the economics era (1870 – 1940), the social sciences era (1940 – 1970), and the management studies era (1970 – today) (Landstrom & Benner 2010). In the economics era the focus was on the disequilibrium process but as economics as a discipline became more formalized and mathematical, it became difficult to include the entrepreneur within these new models and social scientists began to take an interest in the field (Landstrom & Benner 2010). As entrepreneurship gained a foothold in business schools, management scholars began to take an interest.

Along the way a series of major themes have emerged with shifts in emphasis occurring over time (Ferreira et al. 2015). From 2006 to 2010, the top themes being explored as well as the number of papers noted in their review (Ferreira et al. 2015) were as follows:

1. Entrepreneurial process (296)
2. Environmental and external determinants of entrepreneurship (259)
3. Value creation and performance (206)
4. Psychological, cognitive and individual characteristics (204)
5. Methods, theories and research issues (195)
6. Entrepreneurial resources (158)
7. Entrepreneurial networks (trust and relational) (145)
8. Founders (130)
9. High-tech entrepreneurship (128)
10. Corporate venturing and business competition (92)

Two of these themes, that of number one, entrepreneurial process and number three, value creation and performance rely to some degree on the discussion of success. No process can be clearly understood without some relation to the reason for the process and its connection to success. Neither can value creation and performance be studied without an understanding of success. In all of these studies, context matters. Whether context is the stage of life of a firm, the culture within which it operates or the stakeholder who is a partner in the enterprise will have an influence on what determines value, performance or success. Other themes such as high-tech entrepreneurship and corporate venturing and business competition may also feature success as one of the elements studied.

The target audience for entrepreneurial research may be entrepreneurs themselves, investors, government or academics. Entrepreneurs and investors of course, would be very interested in the measurement of success and the determination of factors which lead to success. Governments, in developing policies to promote entrepreneurship and industrial growth would also be extremely interested in understanding more about success.

Even though an understanding of success is critical to the field of study, entrepreneurship researchers have employed many different definitions of success. It is in fact surprising that given the potential importance of success as a factor in so much investigation, and of a subject of concern to so many, that there has not been more done to nail down some body of research or develop a framework to enable researchers to better target issues pertaining to success.

Without a clear definition of success or a framework within which to study it, it is difficult to conduct research into factors that lead to success. Researchers can certainly define factors which lead to some end result and that in itself is valuable research but it may not be necessarily true that the end result chosen as a codifier of success may actually mean there has been success. Over time there have been numerous different definitions of success used including:

1. Growth of sales and profitability (Wong et al., 2005).
2. Mere survival of a firm (Hormiga et al 2011)
3. The ratio of earnings per employee (Krejci et al 2015).
4. Achievement of goals as measured by employee satisfaction (Vu et al 2012).
5. Securing 'second round' or 'Series A' funding (Spiegel et al 2016).
6. Firm growth (Davidson et al., 2009: 388).
7. Growth in employees (March-Chorda, 2004; Colombo and Grilli 2010).
8. Profitability (Markman and Gartner 2002)
9. Exits (Kraussl and Krause 2014)
10. IPO or acquisition (Nahata et al 2014)

Is it any wonder then that there is no standard definition of success in the literature as success often means different things to different people (Santisteban and Mauricio 2017). These examples illustrate the broad number of codifiers of success but they point to another set of issues.

1. Researchers are picking codifiers of success generally without any in depth examination of what success means in the context of their research.

2. They are also not attempting to differentiate between success and performance. This problem may exist due to sloppy usage of language and mixing up success and performance.
3. Researchers are also picking codifiers without any research into the efficacy of the chosen codifier so potentially invalidating their research by choosing an inappropriate definition of success.
4. Researchers are relying on references to bolster their claim as to their chosen codifier as being valid. Frequently though, there is no discussion or evaluation of multiple different potential codifiers and why they have selected the one they did.
5. The references themselves show no examination of their efficacy.

The result of these issues is that there is a lot of very sloppy work being produced which has no firm theoretical foundation. Essentially, the term performance is being confused with the term success. One can examine a firm's performance by using such measures of performance as growth in people or revenue, profitability, raising a round of financing, exiting through acquisition or IPO. In none of these cases though, without adequate research, is it valid to equate performance with success. In confusing these two words in many cases researchers are showing a lack of intellectual rigour. Researchers are adding to the discussion of factors which contribute to performance but researchers are not adding to the discussion about what factors contribute to success.

What appears to be happening is that in an attempt to create theories that can be applied to all entrepreneurial situations, researchers are generalizing. They are thus missing the nuances which a structured analysis would bring and producing work which has little value to entrepreneurs. This problem of generalization extends from discussions of success to discussions as to the very nature of firms and their lifecycles. The lack of an attempt to create a structured analysis and the examination of entrepreneurship from multiple different perspectives has impoverished the field and make many question its relevancy.

This thesis sets out to show how the examination of entrepreneurship from a stakeholder perspective results in very different answers to the determination of the definition of success. To do this work, this thesis has been based around the perspective of venture capital backed

software companies. It seeks to determine whether the existence of venture capital backers in a firm has an influence on the definition of success, what the definition of success should be, and how to measure it. To determine whether such an influence exists it will:

1. Examine alternate definitions of success.
2. Determine what an appropriate definition of success is for a venture capitalist backed software company.
3. Develop a measurement of success.
4. Test whether any of the existing definitions of success accurately align with the measurement of success established.
5. Propose and test new measures of success.

From this base, it should be possible for other researchers to extend this stakeholder perspective to determine whether there is a different definition of success for different stakeholders and even then, attempt to examine whether having different stakeholders influences the purpose of the firm and other factors such as its lifecycle.

1 Literature Review

The first objective of this thesis is to examine alternate definitions of success. This section addresses the objective through a literature review.

1.1 A Theoretical Basis for Defining Success

In order to properly define success and develop a tool to measure it, one must return to basics and understand the purpose of a firm, the purpose of entrepreneurship and the objectives of the actors involved in new venture formation.

1.1.1 The Purpose of a Firm

The firm is a fairly recent phenomenon as until the 18th century, business was carried out by individuals acting as farmers, artisans and merchants without a corporate structure (Spulber, 2009). The industrial revolution created a new dynamic and specialized enterprises were born in the mid 19th century. These specialized enterprises gave rise to the modern firm with

shareholders being distinct from managers (Chandler 1977). Today the large firm is ubiquitous (Teece 2019).

Before one examines the purpose of a firm, one must address three interrelated questions:

1. What is the definition of a firm? Is it something defined by its legal status or the economic activities it undertakes (Hart 2011)? Certainly, the economic activities always existed and thus it is folly to define a firm by its economic activities. The definition of a firm must be its legal status.
2. What is the motive for conducting business activities? Motives are individual psychological forces which move individuals to behave in certain ways (Duska, 1997). The purpose has frequently been confused with the motive for conducting business (Duska 1997). The motive, not the purpose of a firm is wealth maximization (Duska 1997).
3. What is the purpose of the firm then? The purpose is not a description of the products or services but of its reason for being (Collins & Porras, 1994). This reason for being gets to the relationship of the entrepreneur with the firm as an entrepreneur sets out to bring something to the world (Hart 2011).

It could be argued that the concept of a firm only came to exist when owners came to be separated from managers. Entrepreneurs set out with a world-changing purpose, involve other shareholders who have a profit motive and they come together in a legal entity called a corporation. So then how should a firm be measured; by the purpose of the entrepreneur or the motive of the investor? Unfortunately, there is not a clear distinction between entrepreneurs, managers and shareholders in a firm. An entrepreneur would have to be both a manager and shareholder to qualify as being an entrepreneur but one individual can hold roles as a manager and shareholder but not be an entrepreneur. For future purposes the following set of definitions have been deployed:

- An investor is someone who is a shareholder but not a manager in a firm.
- A manager is someone who works for a firm in a management role.
- An employee is someone who works for a firm but does not have a management role.

- An entrepreneur is someone who is both a manager and shareholder who did not obtain their shares by virtue of employment.

There is an ongoing debate as to what the objective of a firm should be. What should a firm be trying to accomplish, how should they measure performance, what is good versus bad performance? These issues all go to the heart of choosing a metric for success and actually measuring success.

Many academics believe that from the various potential objectives, the most appropriate objective of a business should be wealth maximization (Jensen 2001; Khan & Hussanie 2018). Having an answer to whether wealth maximization should be the objective will enable an entrepreneur to decide between alternative courses of action. This concept of wealth maximization, while open to much debate has its roots in over 200 years of research in the fields of economics and finance (Jensen 2001).

It is widely believed that profit maximization is a legal responsibility of directors and executives although this is a legal myth (Stout 2012). Profitability leading to wealth maximization may be a necessary condition but is not the end in itself (Collins and Porras 1994). Profitability is needed to develop and grow the business but when this becomes an end in itself, the original purpose has been lost (Hart 2011).

While scholars argue about the wealth maximization motive of firms, new theories about corporate purpose have emerged. One new focus for firms being advocated is how firms might contribute to the creation of a more equitable and just society to be more inclusive of women and people of colour (Root Martinez 2021). Lankoski and Smith (2017) have introduced 10 alternative objective functions for a firm which seek to combine social welfare with profit maximization in some manner. Others address wealth maximization in counterpoint to the issues faced with climate change (Arnold 2016).

Even at issue is whether firms should actually have a purpose. “Because a corporation consists of a variety of constituencies with differing interests and objectives, an articulated, measurable and enforceable corporate purpose enables those constituencies both to select

those corporations with which they wish to identify and to navigate the terms of that association through contract or regulation" (Fisch & Solomon 2020; p 101).

If wealth maximization is truly the objective of every firm then selecting a criterion for success should be easy. The criteria would be the amount of wealth created. It follows that since so much debate occurs around the subject of success, wealth maximization cannot be the objective of all firms or else research into the subject would come back with wealth maximization as the singular answer. Wealth maximization as an objective is so far from the non-financial objectives mentioned repeatedly in the literature that there must be another phenomenon intruding. Perhaps that phenomenon is of entrepreneurship itself.

1.1.2 The Purpose of Entrepreneurship

Returning to the roots of entrepreneurship, perhaps an answer can be found to our dilemma as to the purpose of entrepreneurship. Entrepreneurship was first used as a term in the 18th century as it came to be associated with activities which created profits in excess of the rate of return from the combination of land with labour and capital (Gedeon 2010). Eventually, two opposing theories arose. The first was the Risk Theory of Profit which described a farmer or merchant who purchased inputs at a given price in order to produce something to sell at an uncertain price (Cantillon 1755 in Gedeon 2010). The Risk Theory of Profit imagines that entrepreneurs can create profits through innovation as long as they assume the risks of ownership. In contrast, the Dynamic Theory of Profit views entrepreneurs as creating disequilibrium and profit arises when a static state of equilibrium which exists in perfect competition changes (Hayek 1937). Schumpeter viewed entrepreneurs as a source of disequilibrium through creative destruction. He expanded the definition of entrepreneurs to include employees, managers, directors, financiers, and promoters (Schumpeter, 1934 (1961)). Since then, the definition has been expanded even further to include any activity that applies innovation to an opportunity, profit seeking or not, whether it takes place in a large company, non-profit, university or government (Drucker, 1985).

Schumpeter (1934) defined the new field of entrepreneurship to involve individuals whose function was to do new things or alternatively, to do old things in a new way. Central to the

concept of entrepreneurship, Schumpeter defined entrepreneurs as innovators who implement change within markets, where entrepreneurial change has 5 manifestations:

1. The introduction of a new good or one which has been improved;
2. The introduction of a new production methods;
3. The opening of a new market;
4. The use of a new source of supply; and
5. The re-engineering/organization of business management processes

Having such a wide definition of entrepreneurship activity has led to similarly wide definitions of what an entrepreneur actually is. William Gartner (Gartner 1990) attempted to resolve the disparities in definition. Two themes of entrepreneurship evolved from scholarly analysis. One theme related to the characteristics of entrepreneurs (innovation, growth, uniqueness) and the other to the outcomes of entrepreneurship (creation of value, profit).

In fact, based on the definition, entrepreneurship can occur in large firms as well (Shils 1982,). Stevenson & Jarillo (2007) defined an entrepreneurial organization as "An entrepreneurial organization is that which pursues opportunity, regardless of resources currently controlled." (p 23). The Global Entrepreneurship Monitor contrasts independent entrepreneurship activity by business owners with opportunity pursuit within existing organizations which they refer to as entrepreneurial employee activity (GEM 2013).

What then is corporate versus independent entrepreneurship? Sharma and Chrisman (1999) attempted to resolve the disparity by defining independent entrepreneurship as "the process by which an individual or group of individuals, acting independently of any association with an existing organization, create a new organization." (p. 92). Their definition of corporate entrepreneurship was "the process whereby an individual or group of individuals, in association with an existing organization, create a new organization or instigate renewal or innovation within that organization."(p. 92).

The proposed definition differentiates entrepreneurs from corporate owners and business managers in many regards but not fully as there continues to be a debate as to what an

entrepreneur is versus a small business owner. While an entrepreneur must own an enterprise to qualify, not all enterprise owners are entrepreneurs (Martin 1982) and by modern definitions, not all entrepreneurs are business owners (GEM 2013). While there is an overlap between small businesses and entrepreneurial ones there is one key difference and the difference is growth. And growth is important because entrepreneurship as a function is fundamental to economic development (Carland et al, 2007).

The disagreement which has arisen on the definition of an entrepreneur was further examined by Carland et al (2007) who concluded their discussion of the disagreement by differentiating between a small business owner and an entrepreneur. A small business owner is one "who establishes and manages a business for the principle purpose of furthering personal goals." (p.79), while an entrepreneur is "an individual who establishes and manages a business for the principle purpose of profit and growth."(p. 79).

While there is conflict as to what a small business owner is versus an entrepreneur, there is even disagreement as to what a small business is. The OECD uses a country specific definition while stating that small firms are generally those with fewer than 50 employees (OECD 2005). The US Small Business Administration defines a small business based on different standards in different industries as follows: (National Archives 2021)

Exhibit 1 - US Small Business Administration Definition of Small Business

Industry	**Not to exceed**
Manufacturing and mining	500 employees
Wholesale trade	100 employees
Retail and service	$6 million average annual revenue
General and heavy construction	$28.5 million average annual revenue
Special trade contractors	$12 million average annual revenue
Agriculture	$0.75 million average annual revenue

Industry Canada similarly defines a small business based upon the sector in which it operates. For those producing goods, companies with between 5 and 100 employees are defined as

small. Service-based companies are small if they have between 5 and 50 employees (Industry Canada 2012).

By clarifying the difference, researchers into the subject of success can choose to focus between small business owners and entrepreneurs. By virtue of the definitional differences, one can steer research to non-financial objectives for small business owners and towards financial objectives for entrepreneurs.

So far, there is perfect alignment between the purpose of a firm and the purpose of entrepreneurship. The purpose of a firm is value maximization while the purpose of an entrepreneur is profit and growth which in itself could lead to value maximization. Growth itself is one phase in the life cycle of a firm, each phase of which might require a different definition so of success and different measurements thereof.

1.1.3 Life Cycle of a Firm

Numerous models of organizational life cycle development have been proposed and perhaps an understanding of success can be gleaned from a review of these models. Different types of models each emphasize different factors which can be used to explain how organizations change over time (Quinn & Cameron, 1983). Different models can be summarized in Exhibit 2 (excerpted from Jirasek (2018).

Exhibit 2 - Organizational Life Cycle Models

Author(s)	Stages
Downs (1967)	Struggle for autonomy Rapid growth Deceleration.
Lippitt & Schmidt (1967)	Birth Youth Maturity
Scott (1971)	No formal Structure Functional specialization

	Multiple product lines
Greiner (1989)	Entrepreneurial and creativity Growth through direction Growth through delegation Growth through coordination Growth through collaboration
Torbert (1974)	Individuality, informality Group unity and collectivity Fixed rules and structure Renewal and adaptability
Lyden (1975)	Environmental adaptation Resource acquisition Goal attainment Pattern maintenance
Katz & Kahn (1978)	Primitive system stage Stable organization stage Elaboration of structure
Adizes (1979)	Producing results Acting entrepreneurially Formal rules and procedures Integrating individuals
Kimberly (1979)	Marshalling of resources Selection of a prime mover Formation of an organizational identity
Gaibraith (1982)	Proof of principle prototype Model shop Start-up volume production Natural growth Strategic maneuvering
Churchill and Lewis (1983)	Existence Survival

	Success Take-off Resource maturity
Quinn and Cameron (1983)	Entrepreneurial Collectivity stage Formalization and control stage Elaboration of structure stage
Scott and Bruce (1987)	Inception Survival Growth Expansion Maturity
Mintzberg (1984)	Formation Development Maturity Decline
Miller and Friesen (1984)	Birth Growth Maturity Revival Decline
Smith, Mitchell and Summer (1985)	Inception High growth Maturity
Gray and Ariss (1985)	Birth and early growth Maturity Decline or redevelopment
Kazanjian (1988)	Conception and development Commercialization Growth Stability

Hanks (1990), Hanks et al. (1994)	Start-up stage Expansion Consolidation Revival/Diversification Decline
Flamholtz (1990; 1995)	New venture Expansion Professionalization Consolidation Diversification
Dodge and Robbins (1992)	Formation Early growth Later growth Stability Integration Decline-revitalization
Jawahar and McLaughlin (2001)	Start-up Emerging growth Mature Decline/Transition
Lester, Parnell and Carraher (2003)	Existence Survival Success Renewal Decline
Dufour, Steane and Corriveau (2018)	Acting the future Reflecting on the past Acting on the past Thinking the future

Excerpted from Jirasek (2018)

Few authors of these life cycle models connect a success factor to a development stage (Santisteban & Mauricio 2017) but inherent in all of these works is an identification of success as passing from one stage to another. Numerous literature reviews done recently (Sharma, (2015), Drover et al (2017), Meglio (2017), Tykova (2018), and Wallmeroth (2018)) outline a vast body of work in life cycle analysis and yet there does not appear to be any explicit examination of life cycle of a firm as it pertains to measurement of success. Furthermore, there appears to be no research associated with an examination of the lifecycle of venture capital financed firms.

However, there is much research into risk minimization strategies of venture capitalists (Cumming, 2008; Hellmann, 2006; Kaplan & Strömberg, 2004; Tian, 2011). In particular, one of the risk minimization strategies utilized is of multi stage investment practices which consist of providing capital over time instead of in one lump sum (Grenadier & Malenko, 2011; Li, 2008; Tian, 2011). Providing capital in stages allows a venture capitalist to limit exposure to developmental risks and to decide at different stages in the company's development whether to invest again, withdraw or renegotiate (Guler, 2007; Li & Chi, 2013; Tian, 2011).

While researchers have not connected the practices of staged investing to any examination of the lifecycle of a firm, the existence of stages of investing implies different stages of development. Furthermore, the venture capital practice of risk minimization through staged investing implies the existence of stages.

1.2 Stakeholder Theory

Certainly, a firm cannot exist and grow without employees, suppliers, customers, financiers, government and society. Each of these different parties has a different stake in the success of the new venture. In fact, their claims are often conflicting. In terms of corporate objectives, one must look as well at stakeholder objectives. It is by looking at the stakeholders of a firm, one arrives at the main contender for value maximization as an objective which is stakeholder theory.

This section looks at the various different ways of categorizing academic research based on stakeholders: research with no perspective, industrial classifications, societal stakeholders, and family firms among other methods.

Numerous scholars have attempted to produce some form of classifications of ventures (Morris et al, 2018). Researchers have categorized ventures by their function to society (Parsons, 1956), by their aggressiveness (Cooper and Dunkelberg 1981) by their growth, capitalization, industrial sector etc. (Vesper 1990), by their technological orientation (Roberts 1991), by their growth orientation (Hisrich and Peters 1998), and by numerous other ways. Morris et al (2018) themselves propose that there are four types of ventures; survival ventures, lifestyle ventures, managed growth ventures, and aggressive growth ventures.

Of the classification schemes outlined by Morris et al (2018) there has been no attempt to classify ventures based upon their stakeholders, a condition which is easily determined. Instead, what all of the classification schemes have in common is that they are using classifications which are often not obvious thus require research to determine and most of all they are subject to interpretation with little guideline as to how to interpret.

2.2.1. **Categorization of the research on stakeholders**

To understand the stakeholders' positions and perspectives, one must connect different fields of expertise. The study of entrepreneurship looks at how new ventures and their founders grow, profit and create value, how firms come into existence and grow (Venkataraman, 1997). The field of business ethics is concerned with the methods used to create value, and entrepreneurship and ethics "together seek to describe, explain, predict, and prescribe how value is discovered, created, distributed, and perhaps destroyed." (Venkataraman, 2002:46). If the creation of value for people and the planet (as envisioned in the broadest sense by the 2050 UN SDGs (REFERENCE) is a success, then bringing together many different actors or stakeholders in order to accomplish such expectation is a challenge for participants in the venturing process.

The term ‘stakeholders’ refers to a group of actors who each have some relationship with the firm and its success as well as a claim on the firm (Freeman, 1984). An individual, firm, etc. becomes a stakeholder through the existence of some form of exchange relationship:

- Stockholders invest in the firm to earn a return.
- Creditors lend to the firm to earn interest.
- Managers and employees invest their time to earn a wage.
- Customers pay for a product or service in order to satisfy some needs.
- Suppliers provide a product or service in return for payment.
- The government provides safety and security among a host of other things in return for taxes.
- Society as a whole provides the structure within which all of these other actors can come together for their mutual benefit and expects society’s value will be enhanced.

Each of these different stakeholders has a different type of stake in the firm as well as a different size of stake. The size of an individual actor’s stake is dependent as well on the degree to which the actor’s stake is specifically dedicated to the firm (Williamson, 1985). For instance, an employee with general skills will have a low-level stake as employment can be obtained elsewhere with the same skills. This low-level stake will come to be more emphasized as robotization reduces the demand for low level skills. A customer who relies only one particular firm for the supply of a strategic product or service may have a higher stake if there are few opportunities to obtain similar supply elsewhere. In cases where actors have a high stake, there will naturally evolve mechanisms and structures for governance so stakeholders can safeguard the relationship (Hill, 1992).

According to stakeholder theory, managers should make decisions which incorporate the interest of all of the stakeholders in a firm (Jensen, 2001). However, wealth maximization may not be an objective for such stakeholders as employees, customers or society as a whole. As one must bring together multiple stakeholders in order to achieve success for a firm (Shane and Venkataraman, 1997), the role of the entrepreneur is to bring together groups of actors with different objectives and out of the whole, create value. As a result, it is critical to be able to differentiate between entrepreneurs, owners, managers and employees.

Stakeholder theory broadens the reason for the existence of a firm and moves it away from such narrow financial and economic criteria as wealth maximization. It has been felt that such a narrow focus misses the point of the existence of entrepreneurship.

> "Entrepreneurship is concerned with the discovery and exploitation of profitable opportunities for private wealth accumulation and, as a consequence, for social wealth creation as well. Therefore, the relevant benchmarks for entrepreneurship are (1) the absolute level of economic performance that provides a return for enterprising effort, and (2) the social contribution of the individual's effort" (Venkataraman, 2002:p 49).

If one were to return to Schumpeter's definition of entrepreneurship, one can see the logic of Venkataraman's second benchmark, being the social contribution. The result of introducing a new product or a new service to a market is to effect social change. Thus, in order to be successful as an entrepreneur, one must also be successful at creating social change. It would follow that the more social change one introduces, the more potential there is for wealth maximization thus inexorably linking the two concepts. To measure the results of entrepreneurship then, one needs to able to measure the economic performance of the firm as well as the social performance (Venkataraman, 2002). Measuring both types of performance is in alignment as well with the United Nation's Sustainable Development Goals.

There is inherent in such a construct, a conflict between the two measures, one of wealth maximization and the other of social benefit (Santos & Brito 2012). The conflict between economic and social performance manifests itself in the confusion managers must face in setting out objectives for the firm. Without the clarity of a single objective, some feel that companies adopting stakeholder theory may experience managerial confusion, conflict and inefficiency (Jensen 2001).

In reality though, the conflict is entirely realistic and reasonable. If a firm treats its employees badly in order to maximize profitability then they will inevitably leave, causing inefficiency and a reduction in profit so balancing between a firm's objectives and the employees is essential to success. Similarly, balancing between a customer's objective and the firm's is essential to foster long term success. Reducing quality to improve profits might result in lower

sales as customers choose to buy from the competition. Effectively then, success in business is a balancing act, coming to an optimal level of wealth not a maximal one in order to ensure the long-term survival and position of the firm through balancing the needs of all of the stakeholders. An example of this balancing act is the Seventh Generation Principle based upon ancient Haudenosaunee philosophy (Haudenosaunee) that decisions made today should reflect the need for a sustainable world seven generations into the future.

Stakeholder theory binds together all of the interests of the various stakeholders which to many is the very heart of capitalism, figuring out how to meet all of these competing interests simultaneously. As Freeman (2010:p7), the father of stakeholder theory put it:

> "Business can be understood as a set of relationships among groups which have a stake in the activities that make up the business. Business is about how customers, suppliers, employees, financiers (stockholders, bondholders, banks, etc.), communities and managers interact and create value. To understand a business is to know how these relationships work. And, the executive's or entrepreneur's job is to manage and shape these relationships, hence the title, ''managing for stakeholders.''
> .

The concept of value creation and stakeholder theory is very important for managers as opposed to owners and entrepreneurs as they tend to focus attention on things which get measured (Kaplan and Norton, 1992). Not measuring stakeholder success means managers will be unlikely to focus on it, thus potentially jeopardizing the firm in the long run.

There is little agreement on stakeholder theory and there are so many different interpretations of it, theory development has been difficult (Scherer & Patzer, 2011). There is much debate in the literature as to whom managers have responsibility, which stakeholders matter? (e.g., Donaldson & Preston, 1995; Freeman, 1994; Goodpaster & O'Halloran, 1994; Mitchell, Agle & Wood, 1997). Issues have arisen as to how one should deal with the fact that stakeholders each have different stakes in the organization in terms of size. There have been attempts to link the creation of value with fair stakeholder treatment (i.e., Berman, Wicks, Kotha & Jones, 1999; Choi & Wang, 2009; Hillman & Keim, 2001; Preston & Sapienza, 1990).

1.2.1 Categorization of Research on Entrepreneurship

This section will look at the various different ways entrepreneurship has been classified in academic literature. It will examine research with no perspective, industrial classifications, societal stakeholders, and family firms among other methods of categorizing research based on stakeholders.

Numerous scholars have attempted to produce some form of classifications of ventures (Morris et al, 2018). Researchers have categorized ventures by their function to society (Parsons, 1956), by their aggressiveness (Cooper and Dunkelberg 1981) by their growth, capitalization, industrial sector etc. (Vesper 1990), by their technological orientation (Roberts 1991), by their growth orientation (Hisrich and Peters 1998), and by numerous other ways. Morris et al (2018) themselves propose that there are four types of ventures; survival ventures, lifestyle ventures, managed growth ventures, and aggressive growth ventures.

Of the classification schemes outlined by Morris et al (2018) there has been no attempt to classify ventures based upon their stakeholders, a condition which is easily determined. Instead, what all of the classification schemes have in common is that they are using classifications which are often not obvious thus require research to determine and most of all they are subject to interpretation with little guideline as to how to interpret.

2.2.2. Stakeholders in Entrepreneurship Literature

Every author who commences research into entrepreneurship categorizes it by virtue of the subjects of their research. Any research into entrepreneurship examines the activities of certain subjects or focuses on a certain aspect of theory relating to certain subjects. By looking at the subjects of entrepreneurial research it may be possible to identify the stakeholders which are recognized in research as well as the extent to which they are recognized.

In order to examine how stakeholders are considered a literature review has been conducted. The review consists of an examination of the subjects of all entrepreneurial research conducted in 2018 in three of the leading journals of entrepreneurship; The Journal of Business Venturing (JBV), The Journal of Small Business Management (JSBM), and Entrepreneurship and Regional Development (ERD) was examined. In total, these journals

have produced 123 journal articles in 2018. Exhibit 3 summarizes the number of journal articles written by stakeholder type.

Exhibit 3 - Stakeholder Coverage in Research 2018

The Journal of Business Venturing, The Small Business Management and Entrepreneurship and Regional Development

Topic	JBV	JSBM	ERD	Total
General or country specific SMEs	10	13	23	49
Industry Specific SMEs	2	8	4	11
Individuals or students	4	4	2	10
Solopreneurs	2	0	0	2
Social entrepreneurs	6	2	5	13
Family firms	0	5	2	7
Shareholders	4	2	0	6
Crowdfunded	5	0	0	5
Franchise	0	1	0	1
3rd world and rural	6	0	1	7
Review or theoretical paper	4	4	4	12

Prepared by the author

What is most apparent from the topics discovered in Exhibit 3 is that of the 123 articles considered, stakeholders were only considered in 30 of the papers or 24%. None of the papers reviewed specifically dealt with employee stakeholders but the most researched area was of social entrepreneurs.

2.2.2.1. Research with no Particular Perspective

A considerable amount of research is done into factors affecting entrepreneurship using a general sample of entrepreneurs. Detailed information on why a particular set of entrepreneurial firms was selected and how it represents a wider population is frequently not provided (Morris et al 2018). Morris' research determined that five primary firm- level descriptors defined the firms in the studies: (1) industry/sector, (2) firm size (employees and revenue), (3) growth, (4) innovation, and (5) firm age. As expected, there is no reference to stakeholders.

One can see a similar pattern in other research. Of the 123 journal articles examined from 2018 (see Exhibit 3), 49 of them did research without any stakeholder or industry focus. In order to examine how some of these articles could benefit from a stakeholder perspective, Exhibit 4 has presented 10 of them as follows:

Exhibit 4 - General Coverage in Research 2018

The Journal of Business Venturing, The Small Business Management and Entrepreneurship and Regional Development

Authors	**Topic**	**Studying**
Lee 2018	**The impact of government guaranteed SME loans on regional growth.**	US Small Business Administration (SBA) loans data matched to each Metropolitan Statistical Area (MSA) by year to create a metro-year level panel.
Siqueira et al 2018	The capital **structure differences between for-profit social and commercial enterprises**	120 young for-profit social and 120 commercial enterprises in Belgium.
Morgan et al 2018	**The relationship between business owners' immigrant background and small business export intensity**	Canadian small businesses employing between one and 499 employees and generating between $30,000 and $50 million in revenues in 2011.
Mathias and Williams 2018	This research reveals findings on how and why entrepreneurs add, subtract, or retain roles.	45 entrepreneurs experiencing highly-different growth trajectories,

Strese et al 2018	This study introduces **a theoretical framework for the perceived exit performance construct and develops a scale to measure it**	29 interviews and two unique samples with 203 entrepreneurs with exit experience.
Mainela et al 2018	A conceptualization of opportunity-oriented international entrepreneurship.	52 interviews from Finland and Israel
Konon et al 2018	Do **start-up rates in different industries change with business cycle variables.**	Data from the Enterprise Panel on start-ups collected by the Center for European Economic Research. Mannheim, Germany
Fukugawa 2018	How do **SMEs chose intermediaries** and how does this affect growth.	SMEs from the Basic Survey of Business Activities by the Ministry of International Trade and Industry in Japan.
Belot and Serve 2018	**The impact of CEO demographics on earnings quality for private firms.**	A sample of 30,476 French firms,
Claudi et al 2018	T**he influence of board composition on growth intentions**	Data from 773 high-growth firms from Norway.

Prepared by the author

The papers represent a broad sample of the type of literature which is devoted to analysis of general entrepreneurial conditions, independent of stakeholders or industry. Each case represents potentially failed research due to the decision not to reference stakeholders in their examination.

2.2.2.2. An industry Perspective on Research

It is evident from the literature review that "Industry" is frequently used as a method of classification. Of the 123 papers reviewed, 11 of them as seen in Exhibit 5 conducted research within one industry, thus introducing industry as a method of classification.

Exhibit 5 - Industry Coverage in Research 2018

The Journal of Business Venturing, The Small Business Management and Entrepreneurship and Regional Development

Authors	**Topic**	**Studying**
García-Villaverde et al 2018	Implications for a firm of belonging to a cluster.	Conducted with reference to the Spanish **footwear** industry.
Leppäaho et al 2018	This study investigates how entrepreneurs of **biotech** enterprises embed in domestic and international networks so as to internationalize.	Six entrepreneurs from Canada, Finland, and New Zealand
Vernay et al 2018	This article questions how governments can create a vibrant self-organizing cluster but maintain enough influence to use the cluster as a policy instrument.	Semi-structured interviews with 20 members of the **energy** cluster.
St-Pierre et al 2018	Do the domestic collaborations of SMEs have a positive effect on export intensity, in addition to enhancing access to external financing.	A sample of 151 Canadian **manufacturing** SMEs
Schierjott et al 2018	How attitudes influence sharing of information among entreprneurs in a cluster.	Data for the survey was collected in a German **biotech** cluster.

Hugh and Tan 2018	Is a corporate spin-off's entrance into a market conditioned by a strategic logic tied to its legacy history?	Drug approval in the **pharmaceutical** industry.
Agostino and Trivieri 2018	This paper investigates the impact of the duration of a lending relationships on SME financial stability.	A large sample of European **manufacturing** SMEs
Bojica et al 2018	Explores the specific conditions under which strategic alliances of SMEs with commercial partners become multiplex in knowledge exchange.	150 Spanish SMEs in the **information and communication technology** industry.
Hwang and Chung 2018	Conflict management and the role of business ethics in building satisfactory business relationships	Independent **apparel retailers** in the United States.
Bruton et al 2018	The effects of dysfunctional competition and government ties on performance of new ventures in transition economies.	A survey from a sample from 5,000 **manufacturing** Chinese new ventures.
Decker 2018	How savings banks in Germany assess turn- around performance.	Cross-sectional data collected from a sample of corporate advisors who were working in **German savings banks**

Prepared by the author

Of these 11 research papers which are industry specific, there may be a number which potentially could have benefitted from further categorization by stakeholder.

2.2.2.3. Society as a Stakeholder

Considerable research has been conducted into the relationship between firm financial performance and social responsibility (e.g., Aupperle, Carroll, and Hatfield, 1985; Griffin and Mahon, 1997; McGuire, Sundgren, and Schneeweis, 1988; Pava and Krausz, 199). By setting out to investigate topics such as social responsibility, researchers are fundamentally linking stakeholder needs with firm performance and recognizing the role society as a stakeholder has in the field of entrepreneurship. Many of these papers, for example Waddock and Graves (1997) have determined there is a recursive link. Social performance leads to financial performance and vice versa. The concept of social performance has been divided into two components: stakeholder management and social issue participation (Carroll 1979), thereby accentuating even more explicitly the role of social stakeholders in a firm.

The broad concept emphasized is that the more firms create value for their stakeholders the more they are advancing the interests of society (Freeman 1984; Walsh 2005). Extending this concept even further, the concept of a triple bottom line (Elkington 1999) is based on the proposition that performance should be measured from the perspective of economic, environmental and social value added as does the United Nations with their sustainable development goals.

In terms of recognizing the role of stakeholders, in the three journals referenced here, there has been more research done on society as a stakeholder than any other type of stakeholder. Exhibit 6 demonstrates the interests of those studying society as a stakeholder.

Exhibit 6 - Societal Stakeholder Coverage in Research 2018

The Journal of Business Venturing, The Small Business Management and Entrepreneurship and Regional Development

Authors	**Topic**	**Studying**
Moroz et al 2018	Understanding how pro-social third-party audits and certification processes impact	Certified B Corporations

	the activities of purpose-focused entrepreneurs,	
Grimes et al 2018	Development of an identity-based framework for explaining heterogeneity in the adoption of sustainability certification.	1251 US firms obtained from B Lab
Munoz et al 2018	The relationship between purpose and purposeful organizing and how such arrangements can influence the journey of a firm	14 different B Corp certified organizations
Conger et al 2018	Explaining how membership in organizational categories lead entrepreneurs to re-evaluate their firms' activities and opportunities.	46 firms which pursued B Corp certification
Sharma et al 2018	Understanding how enterprises seeking prosocial impact organize their practices.	B Impact Assessment data from 346 enterprises
McMullen 2018	Research on the relationship between the entrepreneurial ecosystem and social enterprise	Social Entrepreneurs
Munoz & Cohen 2018	Explore the narratives underlying sustainable venturing.	60 entrepreneurs and a population of 270 entrepreneurs; all of them were finalists and runners-up in business

		competitions for new sustainable ventures.
Sassmannshausen & Volkman 2018	An overview of the state of art of research on social entrepreneurship	Scientometric methods in measuring the maturity of social entrepreneurship research.
Tasavori et al 2018	Understand how resource bricolage strategy plays a role in the growth of social enterprises	Based on interviews with nine social enterprises,
Bojica et al 2018	Explores the role of bricolage in the growth of social entrepreneurship organisations (SEOs).	A sample of Mexican SEOs.
Johannisson 2018	The need to recognize situated and temporary practices as the core of organizing in general, and of entrepreneuring as a processual phenomenon in particular.	Close-up and longitudinal empirical inquiry into a Swedish work-integrating social enterprise,
Sarkar 2018	How entrepreneurs that are living and working at the 'bottom of the pyramid' overcome resource constraints to create something out of nothing.	113 social entrepreneurs

Prepared by the author

Many of these research papers (e.g. Sarkar, 2018; Sharma et al, 2018; Conger et al, 2018) are specifically looking at management practices and determining how they are established or altered specifically in firms where the needs of stakeholders are explicitly stated through a social mission. Performance measures for enterprises with society stakeholders can be such things as perceived impact on community, perception of integrity, and objective data on any number of positive or negative encounters, community service, and contributions to charity or infrastructure (Harrison, 2013).

2.2.2.4. Family Stakeholders

Family can be a stakeholder either directly by share ownership, directorship or employment or indirectly in the same way society is a stakeholder. For many years, those individuals who had a high degree of loyalty to their family or tribe were much more likely to survive than those who did not (Jensen, 2001). The existence of family as a stakeholder ads a level of constraint to an organization which merits specific research in the area of entrepreneurship (Jensen, 2001). The set of papers, researching family issues shown in Exhibit 7 brings out primarily an investigation into the results of family constraints in terms of innovation (Gast et al, 2018), productivity (Damiani et al, 2018), being green (Qian & Xing, 2018).

Exhibit 7 - Family Stakeholder Coverage in Research 2018

The Journal of Business Venturing, The Small Business Management and Entrepreneurship and Regional Development

Authors	**Topic**	**Studying**
Gast et al 2018	What is it that makes small- and medium-sized family firms innovative?	452 Swiss family SMEs.
Qian & Xing 2018	Whether “being green” matters to privately owned or family-controlled firms, which are subject to much less public scrutiny.	138 private companies from a database - the Australian National Greenhouse and Energy

Chirico et al 2018	To heighten awareness to commitment escalation as it relates to a failing family business.	Theoretical
Damiani et al 2018	The role of Italian firms in labor productivity performance.	A representative sample of family led partnerships and limited liability firms which operated in the non-agricultural private sector.
Wu and Mazur	Incentive pay of CEOs mediates the effect of family preferences on investment policy of a firm.	Family firms classified based on two dimensions, namely, family affiliation of board members (control) and of CEOs (management).
La Rosa et al 2018	This study analyses organized crime from an economic perspective and highlights the crucial role of extortion in mafia activities.	A sample of 116 southern Italian SMEs, whose entrepreneurs have publicly opposed mafia extortion,
Zhang & Reay (2018)	Investigated how entrepreneurs experienced and managed the positives and negatives of family capital	In-depth semi-structured interviews with Chinese immigrants who landed in Canada between 2000 and 2014.

Prepared by the author

Family firms are the norm in business depending how you define them. Approximately 92% of all US businesses are under the control of 'family', they employ 59% of the total workforce and are likely responsible for 78% of all new jobs (Matthews et al 1999). While these numbers are technically correct, not all firms controlled by family should be seen as family firms. It is only where two special objectives of families come into play should a firm be termed a family

firm. Many scholars see family firms as vehicles wherein family members can pursue objectives related to family such as employment of family members and succession of family members (Le Breton Miller & Miller, 2009). Thus, success in a family firm adds employment of family members and succession as two novel success factors to be measured in research. The major difference from non-family firms has been seen by researchers as fertile ground for study into how decisions are made given the differing objectives and measures of success for family member stakeholders.

2.2.2.5. Customers as stakeholders

While the sample of papers studied in other sections within the stakeholder discussion does not explicitly focus on customers as a stakeholder, five of them deal implicitly with customers while researching crowdfunding (Exhibit 8). Customers are explicitly identified as stakeholders based upon their cooperation with the organization (Philips 2003). The goal for a firm is to create the best possible value so that what they receive is sufficient to warrant a continued relationship with the firm (Harrison 2013). The concept of customers as stakeholders was emphasized in the creation of the Balanced Scorecard which examined firm performance from the perspective of finances, customers, internal process and organizational capacity (Kaplan and Norton 1992).

Crowdfunding is a mechanism which enables a customer to directly finance the development of a product in which they have interest. Crowdfunding is used as a mechanism to enable entrepreneurial firms to test the market for a product as well as obtain financing for product development. Research into crowdfunding thus specifically recognizes the role and the influence a customer can have in product development and financing. The papers surveyed specifically recognized customers as stakeholders in the situations shown in Exhibit 8:

Exhibit 8 - Customer Stakeholder Coverage in Research 2018

The Journal of Business Venturing, The Small Business Management and Entrepreneurship and Regional Development

Authors	Topic	Studying

Da Cruz 2018	Crowdfunding as an informational mechanism Calculates the probability of the existence of the product given the contributions during the campaign.	Data on crowdfunding projects in Kickstarter
Anglin et al 2018 (a)	The influence of positive psychological capital language on crowdfunding performance	1726 crowdfunding campaigns from Kickstarter
Scheaf et al 2018	Signal effectiveness in communicating underlying quality varies depending on attributes of the signal source and signal receivers. The second contribution highlights how different aspects of a crowdfunding pitch interact to influence potential funders.	Using archival data from the crowdfunding platform Kickstarter.
Anglin et al 2018 (b)	Develops a novel measure of narcissistic rhetoric,	1863 crowdfunding campaigns from Kickstarter.
Johnson et al 2018	Examines investor stereotypes and implicit bias in crowdfunding decisions.	Randomly sampled from all of the projects from the first three years of Kickstarter's operation

Prepared by the author

Performance for customers as stakeholders can be measured by treatment during transactions, authenticity of the firm, environmental performance, performance on societal issues, objective measures such as repeat business or legal actions (Harrison & Wicks, 2013.)

2.2.3. Shareholders

Stakeholder theory exists in tension with shareholder theory (Freeman, 1984). Many believe that shareholders should be the highest priority stakeholder because shareholders do not have a specifiable contract with terms of delivery with the organization (Rappaport. 1986). Belief in the lack of contract leads to the conclusion that the primary duty of firm managers is to provide the highest possible return for shareholders (Harrison, 2013). Of the papers reviewed for the articles covered in Exhibit 9, six of them explicitly used shareholder stakeholders as their focus of study.

Exhibit 9 - Shareholder Stakeholder Coverage in Research 2018

The Journal of Business Venturing, The Small Business Management and Entrepreneurship and Regional Development

Authors	**Topic**	**Studying**
Islam et al 2018	Investigates the role signals can play for early stage startups when they win prestigious government research grants.	U.S. clean energy sector startups
Warnick et al 2018	Angel investors and venture capitalists and the relation to entrepreneurs' passion for activities related to the product or service the venture provides.	A conjoint experiment of 31 angel investors and 31 venture capitalists,

Walthoff-Borm et al 2018	Equity crowdfunding: First resort or last resort?	277 firms that searched for equity crowdfunding between 2012 and 2015 on Crowdcube and two matched samples of firms which did not list on crowdfunding platforms but were similar in terms of firm industry, age and size. A
Moss et al 2018	Crowdfunding lending preferences and linguistic hybridity	The funding patterns of microenterprises using the crowdfunding platform, Kiva.
Croce et al 2018	Looks at what drives the performance of high-tech start-ups receiving angel financing.	A data set extracted from Crunchbase, which consists of 1,933 high-tech start-ups that received at least one financing round from a BA.
Meoli et al 2018	This paper tests whether the junior public equity markets serve as an effective development market for early-stage firms compared to private venture capital (VC).	Firms that graduate from the Toronto Venture Stock Exchange (TSX-V) to the Toronto Stock Exchange (TSX) against the performance of VC-backed firms which have a direct IPO on the TSX.

Prepared by the author

Measurement of success for shareholders is through financial returns, perceived riskiness of investment, governance structure and policies, information transparency, environmental performance, performance on societal issues and objective data on risks and returns (Harrison 2013).

Shareholders of entrepreneurial firms can be further broken down into different types including: venture capitalists, angels and friends, and the public through venture exchanges. Each of the shareholder types may have a different set of performance and success criteria and each different partner may contribute a set of resources or a set of expectations which may change the process or expectations of an organization. There may be more similarities between venture backed technology companies and venture backed restaurants than there would be between owner managed software companies and venture backed software companies.

2.2.4. Agency Theory

The entrepreneur is special in the construct of the creation of a firm as s/he is the only party to all of these stakeholder relationships and is the only one with direct control over decision-making and the responsibility to make decisions about the allocation of resources and the apportionment of returns to each of these stakeholders (Hill and Jones, 1992). Effectively then, growth oriented entrepreneurs can be seen as the agents for all other stakeholders.

An agency relationship exists where an individual or group of individuals (the principals) engage another person or firm (the agent) to perform some service for the principal and where some degree of decision-making authority has been granted to the agent (Jensen and Meckling, 1976). In terms of the entrepreneur, there is a very clear principal/agent relationship between investors and creditors and the entrepreneur and perhaps a slightly less clear one between other stakeholders and the entrepreneur.

The problem which exists is that it is presumed the interest of the principals and agents are not always synchronized (Hill, 1992). In cases where there is freedom of entry and exit for both parties on the relationship (an efficient market), any agent or principal which doesn't like the terms or the structure which governs the relationship is free to leave and seek another

relationship. However, markets are rarely efficient, particularly in the case of shareholders and entrepreneurs. Where principals cannot exit a relationship without incurring a significant loss, there is a power differential (Hill, 1992). The power differential will give rise naturally to much more stringent terms of engagement and governance between the parties. It should also give rise to a resolution of the divergence of interests and the conflict between whose objectives are more important.

Essentially, one can look at all of the stakeholders of a firm and see there is only really one case where a major imbalance exists. Customers, suppliers and employees are relatively free to leave an agency relationship and for the government and society, the effect of the results from any one firm on government or society as a whole is immaterial. Creditors typically structure their relationship with an agent in such a way as to enable them to exit the relationship without incurring a major loss. The only stakeholder relationship with which it can be said there is a very critical and unbalanced relationship is that of the investor and entrepreneur. Where there is an external shareholder, it is critical the needs of the stakeholder be preeminent and such a thought gives rise to the concept of enlightened value maximization.

2.2.5. Enlightened Value Maximization

Enlightened value maximization recognizes that the maximization of the long run value of the firm is the most important objective by virtue of the principal/agent relationship balance between the shareholder and entrepreneur. Enlightened value maximization as an objective forms the basis for making trade-offs among all stakeholders (Jensen 2001). It is enlightened because it recognizes while value maximization is the most important objective, the needs of all stakeholders must be met to the best degree possible in order to obtain value maximization. Enlightened value maximization solves the problems of having multiple objectives and enables entrepreneurs to think clearly about the trade-offs which must be made among all stakeholders (Jensen 2001). Interestingly enough, some research has shown it is only through long term value maximization can a firm devote sufficient resources to meeting the needs of other stakeholders (Wallace 2003).

The flaw in stakeholder theory is its negligence in providing a direction as to how entrepreneurs, acting as managers of a firm, should make trade-offs between stakeholders. Enlightened value maximization provides a framework for allocating resources among competing interests faced by entrepreneurs (Wallace 2003).

1.3 Stakeholders' perspectives of performance and success

Absent in much of the discussion about success is a large body of research about how those other than entrepreneurs measure the performance of entrepreneurial ventures. Profit and growth must be used to measure performance but what else is relevant and should be considered as well? (Santos & Brito 2012). Stakeholders should be considered as well and it would be useful to define a set of performance outcomes which measure their satisfaction (Connolly et al., 1980; Hitt, 1988; Zammuto, 1984). A number of authors use stakeholder satisfaction to measure firm performance (Agle et al, 1999; Clarkson, 1995; Kaplan & Norton, 1992; Venkatraman & Ramanujam, 1986).

Not only are there multiple ways to measure stakeholders' perspectives on performance but the same is true with stakeholders' perspectives on success. An example of an approach which employs a stakeholder perspective is included in a study done by Gorgievski et al (2011). They surveyed 150 Dutch small business owners to understand success and their personal values with business owners ranking 10 success criteria. In this example, the satisfaction of stakeholders, being clients and employees, ranked third among the ten variables as a criterion for measuring success.

Iontia (2013) attempted to determine what success means for SMEs and surveyed 250 Romanian firms to do so. The study sought to determine what factors influence the importance of goals and in particular, whether other stakeholders have any influence. They concluded there is no association between a company's goals and stakeholders.

While Ionita (2013) did not look at the role investors play in an entrepreneur's view of success other research has addressed the role directly. Lindell & Englund (2016) studied startup companies from Uppsala to determine what venture capital involvement has on an entrepreneur's view of success. They determined that while entrepreneurs saw success as

being measured by non-financial goals when they first started, after they received an investment from venture capitalists, they measured success using financial goals.

In looking at how stakeholders view success, it is important to understand what stakeholders are being surveyed. While Lindell and Englund (2016) surveyed shareholders in Uppsala, Sweden for their study, Razmus and Laguna (2018) studied external stakeholders which they defined as being customers, suppliers, competitors, and financial institutions They determined that external stakeholders see entrepreneurial success using six dimensions:

1. Entrepreneur satisfaction
2. Entrepreneur work-life balance
3. Firm social responsibility
4. Firm reputation
5. Employee satisfaction
6. Client satisfaction

1.4 Governmental perspectives on success

As a key stakeholder, governments are concerned about the success of small and medium enterprises and yet there is little agreement between them on what success means. The OECD implies that firms are successful if they are high growth. They define this as growth over 3 years of more than 20% a year from a base of at least 10 employees (OECD 2007). However, in other literature, they explicitly state that mere survival is indicative of success (OECD 2002).

For the United Nations, global success is outlined in their 17 sustainable development goals (2015-2030). The eighth of these goals is decent work and economic growth and target 8.5 of the goals is full and productive employment (United Nations). Implied in their target is that one factor in the success of small and medium enterprises is growth as measured in number of employees. The United nations has also created a Human Development Index which is an attempt to emphasize that people and their capabilities and not just economic growth should be the ultimate criteria for measuring the success of companies (Sager & Najam, 1998). There would appear to be some inherent conflict between the goals stated and their preferred tool for measurement. The World Bank, although not explicit again in their definition of success

implies that successful firms are those which are competitive and competition will result in growth (Tewari et al, 2013).

One measure used by governments is the contribution of SMEs to gross domestic product. The Government of Canada measures the percentage contribution of SMEs to GDP (Canada 2012). The Government of the United Kingdom uses business growth as measured in revenue and employment as they are the things they consider contribute to economic growth through innovation, competition and job creation (UK 2013).

An example of views on success at a more granular level comes from Canada's sixth largest city, the City of Mississauga. Their view of successful SMEs is that success is driven by the creation of world-class enterprises, as they are the firms which drive economic growth and employment (Canadian Urban Institute 2019).

1.5 Questioning Success

As one can see, the results of research is all over the map. Asking entrepreneurs themselves will elicit different answers depending upon who their stakeholders are. And if you ask different types of stakeholders what success means you'll get different answers depending on the type of stakeholder. The lack of a framework for understanding success is hindering the development of theory, and resulting in a never-ending circuitous set of conversations on success which lead nowhere. It is possible for a shared structure of measures can exist but it can only do so with an acknowledgement of different perspectives. Effectively the research raises more questions than it answers. Among those questions are such as:

1. What is the fundamental difference between success and performance?
2. What criteria should be used to measure performance?
3. Who should measure success?
4. What criteria define success?

To answer these questions, one must first differentiate between performance and success in such a way as to be able to develop more comprehensive theories on the latter.

1.6 Definitions and Measurements

Before arriving at conclusions regarding success, it is necessary to measure performance and success, define success and look at the difference between the two.

1.6.1 Measuring Performance

Before proceeding to understand success, this thesis has first attempted to understand what performance is. Performance here is meant as the act of accomplishing something or recording a result whereas success implies an evaluation of the quality of that result. There is a considerable amount of academic literature devoted to the subject of performance and to understanding why some organizations struggle to perform and others do not (Hult et al 2008). Numerous authors have developed performance models for firms because there is a lack of consensus about measurement among others things and it is limiting advances and hampering understanding (Santos & Brito 2012).

A number of studies (Chong 2008; Gerschewski & Xiao, 2015) have attempted to define performance by doing research into what entrepreneurs consider performance to be. One example of research into performance was conducted by using semi-structured interviews with five owner-managers of small and medium enterprises to understand how they measure it. The limited research which was done here determined the entrepreneurs queried use both financial and non-financial measures and apply the measures against both goals and time (Chong 2008). Financial measures included profits, revenue, profit per employee and revenue growth. Non-financial measures included customer satisfaction, referral rates, and growth in customers' bases and revenues. Essentially what this research concluded was that performance was measured against targets as a reference point. Gerschewski & Xiao (2015) surveyed 310 firms in New Zealand and Australia and it was determined that financial measures are viewed as more important than operational measures and manufacturing firms place more importance on financial measures than do service oriented firms.

Research into the tourism industry attempted to develop a conceptual model of SME performance. To do so, the research sought responses from 305 small tourism entrepreneurs and determined that performance is measured by both short-term and long-term measures

and included both objective and non-objective ones (Haber and Reichel 2005). It is interesting to note from their study that profit was not one of the measures being used as it is thought profit would be of particular concern to small business operators. It is also surprising there is a strong focus on the number of employees while the number of employees does nothing to improve the economic well-being of the entrepreneur.

In the case of international joint ventures (IJVs) it was determined that firms choose different performance measures based upon the stage of the IJV in its life cycle (Larimo et al, 2016). It is entirely possible that choosing different performance measures based on life cycle also affects other types of entrepreneurial ventures and performance measurement is a function of the life stage of the entrepreneur or business stage of the venture.

Further research into performance by Chander and Hanks (1993) attempted to determine and compare the most common approaches to measurement. The approaches used included:

1. Broadly defined categories
2. Subjective measures of satisfaction
3. Comparison to competition.

They polled 120 manufacturing businesses in Pennsylvania, U.S.A. and determined growth and business volume were the criteria of performance were the most familiar measures to the study subjects and that the best availability and internal consistency when compared with subjective measures and those which compared the firms results with those of competitors (Chander and Hanks 1993).

Most studies done do not capture the multifaceted nature of performance (Hult et al 2008). Instead it is typical to study only one aspect of performance and from this conclude a definitive solution to strategic and operational choices from that aspect. From the study of 96 articles, the measures of performance in Exhibit 10 were observed:

Exhibit 10 - Commonly Used Measures by Performance Type (% of Papers)

Source – Hult et al 2008

	Financial Performance	**Operational Performance**	**Overall Performance**
Firm	Sales Based 44% Return on assets 40%	Market Share 47%	Reputation 30%
Strategic Business Unit within a Firm	Sales based 68% Return on investment 47%	Market Share 46%	Relative to competitors 50% Perceived performance 33%
Inter-organization Unit	Sales based 62% Profitability 31%	Productivity 44% Market share 33% Product/service quality 33%	Perceived performance 71%
Total	Sales based 52% Return on assets 29% Profitability 26%	Market share 44% Productivity 20%	Perceived performance 47% Relative to competitors 20%

Other researchers have identified the multi-dimensional nature of performance and concluded that hybrid measures involving both financial and non-financial measures should be employed to overcome the pitfalls of a single measure of performance (Gerba & Viswanadham 2016).

The problem associated with the use of just one method of performance measurement is that succeeding in one measure may mean failure in another. For instance, high profitability may only come at the cost of growth and vice versa. Thus, while the use of one prescription for high performance may work for one aspect of performance it may be counter-indicated for another aspect of performance. Despite the importance of firm performance in organizational

research, it is a difficult topic to apply in a scientifically vigorous way (Miller et al 2013). The problem of conflicting performance measures is compounded by the way in which performance is researched. Miller et al (2013) found, without referring specifically to which papers in which the results were found that:

- Few researchers provided formal definitions of or explanations regarding the nature of performance. For instance, many measures are inferred through terms such as "would have positive performance implications."
- Other researchers used single measurements of performance such as profit, shareholder returns, or growth.
- And others used aggregate measures of performance such as ROS, ROA, ROI, sales growth, profit growth, and total amount of profit.

Without a generalized, accepted method of measuring performance it is virtually impossible to compare one piece of research to another. As to the applicability of performance measurement research to practitioners, how can an entrepreneur benefit from so many different definitions and measurements of performance? How can they make sense of any one of a possible set of recommendations when there is so little scientific rigour applied in the study of performance? Without a consistent and intellectually rigorous way of measuring performance, theory development in the field of entrepreneurship is also impeded (Chakravarthy, 1986).

While authors such as Miller et al (2013) would prefer the community adopt a set of scientific steps in order to enhance the scientific rigor in the field others feel to do so would constrain research. Murphy et al (1996) appear to have given up on the idea that scientific rigor is possible when they advocate that rather than give up on the attempt to determine one measure or performance, instead one should "allow theory the freedom to guide the selection of appropriate means of addressing performance" (Murphy et al 1996: p21)

There may be a good reason to support multiple definitions of success as there are trade-offs between various different measures of performance and research in the field has not properly addressed the trade-offs (Murphy et al 1996).

Whatever the case, it is apparent from a review of the literature that the subject of performance is fraught with difficulties in definition, measurement, rigor and theory development and presents a continued rich potential for further research. As this thesis turns to look at success, one can see how the problems associated with performance measurement have been compounded in the measurement and definition of success.

1.6.2 Defining Success

The topics of success and performance are not well differentiated. One can see in the literature on performance, both financial and non-financial measurements are employed. Success is also measured using both financial and non-financial although there is a subtle difference between the two as when measuring performance, financial measures predominate, in measuring success, non-financial measures seem dominant.

Various studies have attempted to ask entrepreneurs how they define success. A survey of 212 SME founders in Malaysia (Ahmed et al 2011) indicates success is a four-factor structure composed of:

- Satisfaction with financial performance
- Satisfaction with non-financial performance
- Performance relative to the competition
- Business growth

It is possible to measure the last two of these metrics objectively but the first two can only be measured subjectively. As a result, the measurement of success begins to diverge from the measurement of performance. Measuring satisfaction is not typically a measurement of performance whereas it is a typical measurement of success.

Another paper looked at the relevant literature on success and used this as the basis for interviews with 25 entrepreneurs (Li et al 2015). The data from the interviews does not seem particularly compelling as it appears to raise more questions than it answers. It concludes that both financial and non-financial measures are important but financial success is perceived

more in terms of viability and sustainability rather than making millions. It also brings into the discussion, the fact that for many entrepreneurs, societal influence is often viewed as a measure of success.

The finding that personal satisfaction is more important than financial metrics was confirmed by Reijonen and Komppula (2007) who interviewed 160 rural tourism entrepreneurs in Finland. Interestingly, 90% measured their success based upon the quality of their product and secondly, 73 percent considered success to be the respect of their customers. While financial success was not a highly used metric, making a living was perceived to be a measure of success. While making a living is seen as important, going beyond this was not perceived to be very important.

Fisher et al (2014) attempted to use these insights to develop a scale for use in subsequent testable models. They explored the concept of success with 10 founding entrepreneurs and then surveyed 213 founders to explore the nine indicators which they had come up with. The nine indicators in order of importance are as follows:

1. Achieve the business goals I set out to achieve in founding at least one business
2. Exceed the business goals I set out to achieve in founding at least one business
3. Am personally satisfied with my life and business
4. Do only that which I want to do in life and business
5. Continually grow my business
6. Receive public recognition from others e.g. awards, remunerated board seats, speaker invitations
7. Never fail
8. Exit, or sell some of, my business for profit
9. Build a business sustainable beyond my personal involvement

While the paper concludes that entrepreneurial success is a multi-dimensional construct, it actually presents no tangible financial measures, relying only on items which are related to personal satisfaction.

Further research done by Ray and Trupin (1989), who used a multi-national survey of 200 French, 200 Japanese, 400 Canadian and 200 American entrepreneurs emphasized the connection between success and satisfaction. Their survey sought to examine perceptions of success and was entirely composed of subjective measures. Of the factors listed, control of one's own destiny and customer acceptance were the two highest scoring factors while becoming rich was the lowest scoring. Eight of the French entrepreneurs stated that success was not something one really achieved (Ray and Trupin, 1989:p116). Survey after survey seem to show that making money is not the criteria entrepreneurs use to judge success.

Angel et al (2018) attempted to further define what success means to entrepreneurs by very carefully selecting a set of entrepreneurs who they could research. They selected Colombian entrepreneurs from a variety of industries who had:

- Achieved consistent growth
- Received both peer and public recognition
- Were able to support themselves financially
- Had a firm between 3 and 9 years old

What they found was that entrepreneurs used four main criteria when gauging success:

- Personal fulfillment
- Customer relationships
- Community Impact
- Firm growth

It is instructive to note something here which will be returned to again in future discussion. One of the measures is personal, one is financial and two use stakeholders to evaluate success.

While financial measures may be the easiest methods of measuring success, many entrepreneurs are motivated to start a business because of lifestyle factors or personal issues. To explore the difference between the two divergent sets of objectives, Walker and Brown (2004) surveyed 290 entrepreneurs in Western Australia. They found personal satisfaction

and achievement, pride in job and a flexible lifestyle are rated more highly than wealth creation.

Wach et al (2016) used two studies to explore entrepreneurial success and the purpose of the studies was to understand what criteria were those used by entrepreneurs, not those used by researchers. They developed a Subjective Entrepreneurial Success Scale to measure the criteria. Similar to other studies, they found entrepreneurs value various indicators of success with monetary returns being only one of many options.

1.6.3 Measurements of Success

One measure of success identified was the growth of sales and profitability (Wong et al., 2005). Their research looked at residents of an incubator in Hong Kong and conducted its research using an in-depth interview with a structured questionnaire. By residing in an incubator, it is likely that the firms used as a basis for inquiry were at the very beginning of their development. It is unlikely they fully understood the venture creation process so identification was personal in nature. The paper, while mentioning various other researchers' visions of success does not critically examine whether the measures they have chosen are relevant.

Mere survival of a firm (Hormiga et al 2011) has also been used as a measure of success. The paper recognizes that in academic research, there is little agreement when determining those factors which separate successful firms from unsuccessful ones. In addition, there is no discussion of why survival is a marker of success. Given the failure rates of entrepreneurial ventures, survival may be a codifier of success. Mere survival though, does not fulfill the need for economic growth which was an underpinning of the field so while survival is necessary it should not be sufficient for claiming success.

Other research has identified the ratio of earnings per employee as one indicator of success (Krejci et al 2015). Their research results from questionnaires answered by 131 companies responding to a survey of over 7,000 companies in the Czech Republic. Respondents included companies in software development, software distribution, hardware distribution, and

hardware development. The mixing of firms from such disparate fields is likely to result in substantial differences in practices and the way success is measured. Furthermore, earnings per employee may differ when looking at software firms with highly paid employees versus say distribution firms whose employees may not be paid as much. It is possible that earnings per software employee may be larger than earnings per distribution employee as salaries are related to the expertise level which is required by the industry. The paper by Krejci et al (2015) attempted to discuss factors which lead to success in some detail but there is no discussion as to why the various codifiers of success were chosen.

Achievement of goals as measured by employee satisfaction is a further definition of success (Vu et al 2012). Vu et al examined 120 managers of 55 software companies in Vietnam selected at random from a public business directory. While the paper makes passing reference to other factors such as profit, turnover, market share, customer satisfaction, employee satisfaction and owner satisfaction as codifiers of success, the decision to pick employee satisfaction is based on the choice having been made by the authors of two other papers (Kehoe & Kevin, 1994, and Surepayroll, 2012) with no discussion or justification as to efficacy.

Financial performance of the company as evidenced by securing 'second round' or 'Series A' funding was claimed to be a factor which distinguishes successful from unsuccessful start-ups (Spiegel et al 2016). Spiegel's research references three other papers (Burton et al. 2002; Davila et al 2003; Baum and Silverman 2004) in determining that raising a Series A round is a codifier of success. The decision to accept a Series A round as a codifier of success is based on an unreferenced estimate that only 40% of startups are able to secure Series A funding. The first of the three references which justify the selection of raising a Series A round as being indicative of success (Burton et al. 2002) are not attempting to examine success, only what factors are likely to result in a firm obtaining financing. The second reference (Davila et al 2003) does not equate raising a round with success, only with growth and in fact makes no attempt to equate raising a round with success. The third reference (Baum and Silverman 2004) actually studies six dimensions of startup performance and it is critical to note they do not equate performance with success. One can see then that Spiegel et al. were perhaps a bit fast and loose in claiming that the three references equated raising a series A round with

success.

One consistent emphasis in the research has been the identification as growth as a primary indicator of business success : “Firm growth is almost universally portrayed as a good thing, and is commonly used as a measure of success.” Davidson et al., 2009: 388). They make the claim about firm growth with no references at all. Their research delves into whether growth should be seen as a codifier of success as growth has also often not been seen to be a sign of sound development. This research hypothesized that “firms which grow without first securing high levels of profitability tend to be less successful in subsequent periods compared to firms which first secure high profitability at low growth.” (Davidson et al, 2009:388). While they did not say it explicitly, one can interpret Davidsson et al. in a way that postulates growth must be accompanied by profitability to codify a firm as having been successful. If this were to be the right conclusion from this work, it would result from an unreferenced and untested value judgement.

Growth has been measured by reference to number of employees (March-Chorda, 2004; Colombo and Grilli 2010). Colombo’s research examined the results of 439 Italian NTBFs, which operate both in manufacturing and services. The decision to codify success by the number of employees is based upon three prior studies. The first of these studies (Feeser and Willard, 1990) chooses employee growth as their metric of success without any discussion and in fact without reference to others decisions as to this choice. The second of the references (Fischer and Reuber 2003) set out to study south Asian firms which grow above 20% as measured by number of employees and equate this measure by definition as success without examining other literature or referencing other research. In fact, they are studying employee growth and presuming employee growth means success. The third reference (Barringer et al. 2005) is studying rapid growth firms as well. The authors state “…rapid growth is frequently an indication of market acceptance and firm success.”(p. 665). They do not support their assertion through research although in fairness, what they are researching is not success but high growth. Thus, of Colombo’s three references, none go so far as attempt to define success through research or through reference to any research conducted on the subject.

While firm growth is an important topic in entrepreneurship research, there are fundamental questions which remain unanswered (Wiklund, Patzelt, & Shepherd, 2009) and theory development on firm growth has been slow (Davidsson & Wiklund, 2000; Gibb, 2000).

Others note inconsistencies among findings (Weinzimmer,1998). It has been proposed that some of the challenges have resulted from a lack of comparability across studies (Davidsson & Wiklund, 2000.) Davidsson et al (2009) have identified the challenges further as:

- Developing a satisfactory basic research design
- Applying a well-founded conceptualization of growth
- To match this conceptualization with the purpose of the study

Given the lack of a conceptual framework to guide the study of growth and the differences between researchers, the problems may be even deeper.

Practitioners are often frustrated with academics who study growth as the practitioners claim that scholars are studying the wrong questions and making the wrong assumptions (Achtenhagen et al 2010). Some of the problem relates to the measures which are used to study growth (Achtenhagen et al, 2010). Comprehensive reviews outlined in Exhibit 11 show the following as indicators of growth:

Exhibit 11 - Measures Used to Study Growth

Source: Achtenhagen, 2010

Author	Sales	Employees	Assets	Multiple	Other
Weinzimmer et al (1998)	83%	17%	8%		
Delmar (1997)	30.9	29.1		18.2	12.2
Actenhagen (2010)	41.8	27.3		16.4	

Other authors use satisfaction indexes (Gupta & Govindarajan, 1984) but measures would be based on personal expectations and it would cause one to question what they have really measured (Chandler & Hanks, 1993). Without the ability to control the measures used, it would be difficult to reach any conclusions about the actual growth performance of a firm (Delmar 1997). Delmar goes on to conclude that most authors use measures in order to reach the best conclusions about the data and thus make comparisons between studies not possible. In addition, scholars are using different periods from one to three years when calculating growth thus making the studies even more difficult to compare.

All of the problems presented and the lack of data on new firms make the characteristics of new firm growth hard to understand (McKelvie and Wiklund, 2010). Lack of data on firm age (Headd and Kirchhoff, 2009) makes it difficult to understand how growth rates changes as firms mature. An additional problem is that firms are often only included in data sets when they reach a certain size (Coad et al., 2013).

In the general debate about success, some feel growth is not the only factor in performance but profitability must be considered as well. Research into Inc 500 companies (Markman and Gartner 2002), showed high growth rates in different cohorts do not match the profitability of companies and as a result, growth has been overemphasized as an indicator or performance. Markman and Gartner are not trying to equate either growth or profitability with success, only as two aspects of performance which can be measured.

The contradiction between growth and profit was furthered through the identification of the contradiction between success as growth or profits and it further identified the necessity of driving growth by delaying profits to earn higher valuation (Clarysse et al. 2011). Clarysse et al recognize that: ‘Although there is emerging recognition that new ventures may pursue different growth paths, how and why they achieve these different growth paths has remained something of a theoretical black box.” (p. 153). In presenting their research, Clarysse et al. are, just like Davidsson, making assumptions about profitability as a codifier of success without reference or proof.

To further compound the confusion, a number of researchers in the area of entrepreneurship have moved from growth as a measure of success towards identification of exits. Kraussl and Krause (2014) concluded success could be determined when a VC exited an investment before ten years from the anniversary of the investment through IPO or M&A. To arrive at the ten year cut off, there is no reference to other literature as codifying success in such a manner. Furthermore, there is no examination if exiting before ten years can be defined as success. Essentially, the paper is studying performance and calling it success.

Nahata et al (2014) coded VC investments as successful if VCs exit from them via either IPOs or acquisitions. Their codification is based upon work by four other research papers. The first of the references (Hochberg et al. 2007) is studying performance, not success. Hochberg et al measure performance by whether a firm exited or not and makes no claims as to exits being a measure of success. The second reference is to the author's earlier work (Nahata 2008). It is interesting to note that Nahata's work did not equate exits to success but was studying performance and successful exits, not at all the same thing. The third reference (Gompers et al. 2008) makes an unreferenced and untested assumption that success is based on exits. Finally, the fourth reference, (Gompers, Kovner and Lerner 2009), actually attempts to define success and it is instructive to quote the following section of their paper.

> "A natural question is how to define investment success. Ideally, we would have data on the actual returns on the firm's investment. Unfortunately, the best we can do is to determine whether the investment resulted in what would appear to be a profitable exit for the venture capital firm. This is most likely the case if the company went public, registered for an IPO (as of the date we collected the data from Venture Source), or was acquired or merged. Venture Source does not collect valuation information for all of the companies which were merged or acquired and it is possible these outcomes were not as lucrative as those where the company exited with a public offering. However, investments in the category we characterize as successes are likely to have generated higher returns than did investments which have not yet exited or are characterized as bankrupt or defunct. This approach is consistent with the evidence in Hochberg et al. (2007), who show venture capitalists generate the bulk of their returns from the minority of investments which are taken public or acquired.

> When defining success only as an initial public offering, the results were consistent, although not across all specifications. This may reflect the fact that IPOs are not a precise measurement of success, or that exiting by acquisition may be a different skill set." (Gompers et al 2009: 828)

Such an attempt to define success acknowledges a lack of rigour and relies not on direct research or reference to any prior research. At least it is transparent in doing so but the validity of later using Gompers et al as a reference must be called into question.

1.6.4 Performance versus Success

It is essential to differentiate between performance and success as the two may not go hand in hand. One field in which success has been studied extensively is book writing and publication (Yucesoy et al 2018). As a simpler field of study, the universally accepted measure of success is the number of books sold. As a data source regarding success, researchers need to turn only to The New York Times Bestseller List which is available in a digital format and has been since 2008. It categorizes books in a manner which makes it easy for researchers to study success using different types of books in order to compare drivers of success. The list ranks books by the number of copies sold in the week. It collects reports from retailers across the United States and statistically weights them so all outlets nationwide are represented (New York Times).

Inherent in codifying success by the number of books sold is an explicit recognition of the stakeholder in the measurement of success. It is not book critics who measure success (they might measure their own satisfaction). It is not the writer who measures success as they might also focus on their satisfaction with the process or result. Furthermore, it is not the publisher who is used to measure of success as one might use profitability as a measure. In book publishing the stakeholder is external and it is the customer or reader of books who gets to determine whether or not a book has been successful. An example of a successful writer who may not have had critical success is Dan Brown, the author of some of the worst thrillers ever published (according to many critics) who has sold over 200 million books.

In the world of musical artists, success is measured in terms of both financial success and critical success (Simas 1987, Green 1996). Uzzi (2008) used these two external stakeholders as codifiers of the success of Broadway musicals. In music the Beatles are the number one sellers and arguably most successful musicians of all time with certified sales of over 285 million albums.

Another way to measure success is through fame. Dedication of media exposure, space in a newspaper, and "everyday conversation to different members of contemporary society is heavily skewed toward a small group of celebrities who are continually replaced." (van de Rijt et al 2013). According to Currid-Halkett (2010:66), fame is "pure renown—literally the sum of all people who have heard a person's name. . . . [It is] fundamentally about sheer numbers of people who know one's name . . . measured by quantity of recognition." (Fame as a measure of success is also an externally dictated view of performance. Stakeholders, being the general public or society as a whole confer success on other individuals in society by virtue of how much attention they pay to them.

In sports, performance is very clear. For instance, in the Olympic games, an individual competitor's performance is measured against all other competitors and the performance measurement is the basis for codifying an individual as having been successful (Radicchi 2012). In fact, the Olympic games motto, Citius, Altius, Fortius refers directly to performance measures of faster, higher, stronger. Thus, a runner is measured on speed, a jumper on height and a weightlifter on amount lifted. While performance measurement as a codifier of success may be viewed as not meeting the test of signifying success as resulting from evaluations of other stakeholders, in fact it does. In the case of athletes, success is measured against the competition, and competitors can be clearly seen as stakeholders external to the performer. As an athlete Usain Bolt's 8 Olympic golds over three Olympics and three events speak of a level of performance which led to considerable fame.

In academia, success is measured for a scholar based upon the number of citations received and the number of citations plays an important role in determining who gets grants, promotions etc. (Radicchi et al 2008). Thus, success is again measured by external stakeholders, being other academics or users of published papers in their own work.

It is also possible to quantify reputation and success in art. Success can be quantified simply by the values received in a sale or in a more complex way by the exhibition pattern of artists (Fraiberger et al 2018). In both cases, success is codified by external stakeholders, in the sale situation by the value customers put on a work and in the exhibition history, the degree of importance exhibitors place on the work.

Each of the players discussed above is in effect an entrepreneur or much like one. The writer, the artist, the athlete is performing much like an entrepreneur will and attempting to maximize performance in order to achieve success. The best explanation of the difference between performance and success is expressed by Yucesoy and Barabasi (2016: PAGE):

> "Fame, popularity and celebrity status, frequently used tokens of success, are often loosely related to, or even divorced from professional performance. This dichotomy is partly rooted in the difficulty to distinguish performance, an individual measure that captures the actions of a performer, from success, a collective measure that captures a community's reactions to these actions."

It is possible to have performance without success as in the case of the inventors of X-Ray photography, moving pictures, recorded audio and the light bulb all of whose names do not come readily to mind. Instead we, the community, ascribe success to Edison who commercialized these items (Barabasi 2018). One can also as in the case of the Kardashian sisters (or Nikola Tesla), have success without performance (Yucesoy & Barabasi 2016).

What is clear here is performance is an individual measure capturing the action of the performer and success is measured by external stakeholders. To bring the world of athletes and scholars to the world of entrepreneurship, one must differentiate between performance, satisfaction and success. Performance can be measured for entrepreneurship using any number of events such as:

- Survival of the firm
- Raising an A Round
- Completing a merger or acquisition

- Having an initial public offering.

It can also be measured by certain ratios including:

- Employee growth
- Revenue growth
- Profitability
- Productivity

While performance can be measured through certain events and through metrics and satisfaction can be measured by the entrepreneur in a myriad of ways depending on the original objectives of the entrepreneur, success though, must be measured by an external stakeholder.

1.6.5 Conclusions Relating to Success

This thesis has so far attempted to define performance and satisfaction. It has determined that performance is measured using a variety of financial measures and satisfaction is related to non-financial objectives of the entrepreneur. At last one can turn to an attempt to define success.

Each of the actors involved in the creation of a firm has some measure by which they determine the firm is successful. But overall, what matters most is value maximization and the stakeholder to whom it matters is the investor. Success will then be defined in relation to the value maximization objectives which an investor in a firm has if such an investor exists. In the case where there is no external investor other than the entrepreneur, how to measure success using the needs of other stakeholders will be examined later.

Based upon a review of the literature and an identification of the gaps in the definition of performance and success the initial premise of this thesis is that:

- Success should be measured by external stakeholders;
- The stakeholder for who success should be measured is the external investor; and
- Value maximization is the appropriate measure for defining whether or not a firm has been successful.

To illustrate the initial premise and then compare measures of performance used and whether or not they can be equated with success, this thesis shall examine venture capital investors as an example of an investor class. In subsequent sections, this thesis will review the specific performance and success criteria used by venture capital investors into entrepreneurial firms and in doing so shall attempt to differentiate between performance and success and see where the two may intersect.

Having defined success as investor value maximization one must then turn to determine the needs of investors, particularly the needs of venture capitalists and then experiment with a number of alternative measures of success to determine their efficacy.

2 Venture Capital

The second and third objectives of this thesis are to determine what an appropriate definition of success is for a venture capital backed software company and to develop a measurement of success. This section addresses these issues through a review of the literature and published statistics on the venture capital industry.

Venture capital evolved mainly due to the passage of the Small Business Investment Act of 1958 wherein the US allowed the Small Business Administration to license small business investment companies. While venture capital is now available from firms worldwide, this thesis focusses primarily on the situation in the US. The ability to license investment companies gave rise to the founding in the 1960s and 1970s of US based firms which invested primarily to commercialize advances in electronic, medical, and data-processing technology. Firms such as Draper Johnson, Sutter Hill Ventures and Venrock Associates were established and financed such companies as Fairchild Semiconductor. By the 1980s the venture capital business had solidified and spread across the globe **(**Bruton et al., 2005; Gompers, 1994). Since the 1990s the industry has grown exponentially. In 1994 venture capital and private equity has grown from managing funds totalling $100 billion (Metrick and Yasuda, 2011) to managing over $2.4 trillion in 2015 globally (Preqin 2016).

It is important to be aware of the existence of two types of firms. Venture capital firms are part of the wider private equity industry. Private equity funds buy and typically restructure or grow companies which are not publicly traded. Venture capital funds invest in new or fairly new companies to support their launch, development and expansion (Zider, 1998). Banks typically do not lend funds to nascent businesses, often waiting until they have profits and assets they can use as security. In fact, in the different stages of a venture, there are different organizational designs, different cultures, different success metrics, and different funding sources (Jirasek 2018). As a result, entrepreneurs who are starting innovative and hopefully high growth ventures need to secure other types of financial help to fuel their establishment and growth (Drover et al 2017). To access capital, entrepreneurs look for equity or debt that can be supplied by venture capitalists, corporate venture capitalists, angel investors, and, more recently, crowdfunders, and accelerators (Drover et al 2017).

Often the first source of capital for a company are angel investors. Angel investors are accredited individuals who invest their own capital into young companies. Angels are often former entrepreneurs themselves who add value to their investments by providing advice, connections and sometimes even perform management functions. Angel investing tends to be less formal in terms of the due diligence deployed before investing, and the formality and control involved in contracts. Angels often are organized into groups to assist each other in the scrutiny of investment opportunities and to improve deal flow (Kerr, Lerner, & Schoar, 2014). US based angels are estimated to have provided over $25 billion of capital to over 70,000 ventures in 2015 (Sohl, 2015).

It is important to note that angel investing is not for the faint of heart as a substantial portion of investments will not be successful. While angels hope to get a payout equal to nine times their total investment, the majority of exits have been for a multiple of less than 5 times. Only about 12% of all investments result in a return greater than the amount invested partially because approximately 60% of exits are for less than the amount invested and only 40% of exits return more than the amount invested (Huang et al 2017).

Despite the many other forms of financing and even though a very small percentage of companies which try to obtain VC financing ever are successful in landing it, venture capital tends to be the most recognized form of financing for start-ups. Venture capitalists who act as the general partners in a fund, raise money from limited partners who are typically pension funds, university endowments and very high net worth individuals. They make a selective number of investments in small companies and attempt to earn a return for their investors by selling the companies they invest in or taking them public (Gompers & Lerner, 2000).

Venture capitalists raise a fund over one to two years and each of the funds is expected to have a finite lifespan (Tykova et al 2018). The lifespan is typically 10 years and during this time investors are not allowed to withdraw their money. Instead they must wait until an investment is sold and the funds received from the investment will be distributed to limited partners (see e.g., Sahlman, 1990). Venture capital firms worldwide are most often small, single location entities which work closely with the ventures in which they invest, attempting to provide added value in the form of knowledge, assistance and connections (Sapienza, 1992; Sørensen, 2007).

The greatest dollar value of deals done is in the later stages, although firms participate in deals from Seed round all the way until a company undertakes an IPO. In 2018, in the U.S.A. $7.5 billion went into Seed stage deals, $41 billion went into mid stage deals and $82 billion went into later stage deals (National Venture Capital Association, NVCA, 2019). The industry continues to shift into larger deals at later stages, delaying IPOs so more of the value increase in the growth of companies can be earned by the venture capitalists (Hellmann & Thiele, 2015).

2.1 Pre-Investment

The first phase in the venture capital deal cycle is the pre-investment phase wherein a venture capitalist will attempt to get to know the potential investee firm and will undertake such activities as deal origination, initial screening, evaluation and structuring of a potential deal (De Clercq et al., 2006). Investors use a number of methods in order to evaluate a deal and to distinguish between potentially successful and unsuccessful ventures (MacMillan et al, 1986; MacMillan et al, 1987). Newer venture capitalists will tend to focus on such things as the

backgrounds of the team members while more experienced ones will focus instead on how well they work together (Franke et al, 2008). To arrive at a decision and develop a structure for a deal, venture capitalists use multiple data sources and rely more on logic than they do on the documents provided by those seeking funding (Kirsch et al., 2009).

2.2 Risk Mitigation and Deal Structure

It is important to recognize that there is a very high failure rate in venture capital deals. The data from CB Insights, an online platform with data on thousands of technology firms and their investor (Exhibit 12) shows the failure rate for over 1,000 companies which raised a seed round in 2008, 2009, and 2010 (CB Insights 2018).

Exhibit 12 - US Tech Companies which raised a Seed Round in 2008, 2009, 2010

Source CB Insights.

	Number of Companies	Raise Next Round	Fail to Raise	Exits	Percentage of Exits	Months to Next Round
Original Round	1,119	534	427	158	14%	20
2nd Round	534	335	118	81	7%	20
3rd Round	335	172	98	65	6%	20
4th Round	172	96	54	22	2%	20
5th Round	96	30	51	15	1%	15
				341	30%	

In total, only 30% of companies receiving investments in seed rounds between 2008 and 2010 actually provided some cash back for venture capitalists as a result of a merger or an IPO (CB Insights 2020). As a result of the high failure rate and goal conflict between entrepreneurs and venture capitalists, deal structure and risk mitigation are extremely important (Cumming, 2008; Hellmann, 2006; Kaplan & Strömberg, 2004; Tian, 2011).

One method of reducing risk is to invest in multiple stages as a company grows, reserving later stages only for companies continuing to show strong potential (Grenadier & Malenko, 2011; Li, 2008; Tian, 2011). When they invest in the stages outlined in Exhibit 12, venture

capitalists can limit their exposure to potential failure and decide at each stage whether they want to continue to invest or renegotiate the terms of investment (Guler, 2007; Li & Chi, 2013; Tian, 2011).

Other risk minimization strategies are deployed including:

- Stock options (Arcot, 2014)
- Covenants (Bengtsson, 2011)
- Convertible securities (Hellmann, 2006)
- Board representation (Wijbenga et al, 2007)
- Active monitoring of the management team (Yoshikawa et al, 2004).
- Syndication (Manigart et al., 2006).

2.3 Post Investment

Venture capitalists earn a fee of 2% to 2.5% of the total invested in the fund to make and monitor investments. After having made an investment, a venture capitalist's role shifts to monitoring the investment and attempting to add value (Sahlman, 1990). Monitoring is essential as many venture capitalists have a significant investment in their fund and they also earn returns based upon the performance of the fund (Gifford, 1997). Much of the post investment phase involves the establishment and monitoring of milestones (Sapienza and Gupta, 1994).

2.4 Exit Phase

As seen in Exhibit 12, 30% of investments result in an exit of some sort, either through the sale of the company to another entity or an initial public offering (De Clercq et al., 2006). When an investment is sold, the net proceeds from the sale, less any profit earned by the venture capitalists, is returned to the investor in the form of a capital gain as opposed to a dividend (Tykvova 2018).

The more prevalent route to an exit is through a merger with another firm. Statistics on the industry are provided by the National Venture Capital Association which notes that in the US

in 2018 there were 85 initial public offerings whereas there were 779 sales of firms through mergers. The total value of IPOs was $63 billion whereas mergers and acquisitions totalled $58 billion (NVCA 2019). The choice of an appropriate exit depends on the duration and size of the investment (Guo et al. 2015), the number of financing rounds (Ozmel et al. 2013a, b) and various market timing issues (Ball et al. 2011).

2.5 Investment Results

In order to understand success as it relates to venture capital funds, it is essential to understand performance. Numerous researchers have attempted to address these two issues, many again with a confusion as to the difference between performance and success. Early research into the venture capital phenomenon focussed on the measurement of success (Rotch, 1968; Hoban, 1978), and on how funds perform (Martin and Petty, 1983).

Performance of venture funds is typically measured using their internal rate of return (IRR) and compared with benchmark indices such as the S&P 500 (Kaplan and Shoar 2005). These benchmark indices track a hypothetical portfolio of investment holdings, each index representing a certain segment of the financial market. The S&P 500 index tracks the 500 largest publicly traded U.S companies and thus represents an alternate investment possibility for those considering investing in venture capital funds. Other approaches include the ratio of cumulative inflows to cumulative capital outflows which is referred to as the multiple of invested capital (MIC or total value to paid in capital (TVPI)) (Tykvova, 2018). Inherent in the first approach is a comparison to market conditions whereas the latter approach does not relate returns back to competitive benchmarks. There are further problems in measuring fund performance as performances are not modified by changes in the risk profile of investments (Driessen et al, 2012).

Required rates of return also change depending upon the stage of investment and according to different stages in a business' life-cycle. As one would imagine, late stage investing carries less risk than early stage investing and as a result, venture capitalists investing at earlier stages require a higher rate of return than those investing at later stages (Manigart et al, 2002).

A limited partner in a VC fund has as an alternative, the option of just making an investment in an index fund such as the S&P 500. This is why it is important that VC funds provide a return greater than the S&P 500 to offset for the increased risk of investing in earlier stage companies in a situation without liquidity. There is a great deal of debate though, on whether venture capital fund returns are better or worse than returns from the S&P 500. Early research showed that average VC fund returns, net of fees perform equal to the S&P 500 (Kaplan and Shoar, 2005). Funds can be measured at a point where they are fully liquidated versus where some of the assets have been liquidated and others assets are valued on a self-reported basis. When looking at fully liquidated funds, it has been found the average private equity fund underperforms the S&P index by 3% net of fees but by greater than 3% gross of fees (Phalippou and Gottschalg, 2009). Further research shows that on average, VC funds outperform the S&P 500 net of fees (Sensoy, Wang and Weisbach, 2014).

The reason the issue of performance is important is that high performing funds are typically more able to raise another fund than low performing funds because overperforming funds tend to continue to overperform and underperforming funds tend to continue to underperform (Kaplan and Schoar, 2005). Performance as outlined by many researchers is measured by IRR, MIC, and TVPI. Determining whether a VC fund is successful or not depends though on its performance against other VC funds or its performance against an index such as the S&P 500. Using statistics from VC and S&P performance in the U.S.A. one can determine a level at which a VC fund can be coded as being a success. Discovering this codification of success can enable one to determine at what level a company invested in by a VC needs to perform in order to contribute to success and thereby at what level a VC backed company needs to perform in order to be coded as a success.

2.6 Codification of Success

From data supplied by the CB Insights, it is possible to calculate the required rate of return from an individual investment to ensure a fund has a higher than median return to its limited partners. To begin, one must look at data on return rates by venture capital funds. The data in Exhibit 13 is supplied by Pitchbook (Pitchbook, 2018).

Exhibit 13 - Venture Capital Rates of Return

Source: Pitchbook 2018

Vintage Year	Number of Funds	Median IRR	S&P 500 Return (%)
2009	20	11.68%	15.56%
2010	23	13.23%	12.85%
2011	27	15.63%	12.17%
2012	20	14.89%	13.15%
2013	29	16.00%	12.87%
2014	34	16.46%	10.70%
2015	39	14.49%	9.63%
2016	44	12.87%	14.80%
2017	31	17.08%	10.99%
Average		14.70%	12.52%

The data shown is for years after the financial crash in 2008 and it shows the average median internal rate of return for venture capital funds for which data is available was 14.7 percent. The rate of return was higher than the rate of return on the S&P 500 by only 2.18 points. At a minimum, in order to be able to continue to raise future funds, it has been assumed for these calculations, a venture capitalist will need to provide investors with an internal rate of return at least equal to the median return provided by the sample of venture capital funds shown in Exhibit 13.

CB Insights has also provided the average investment per round. The data in Exhibit 14 from CB Insights shows the total investment for over 1,000 companies which raised a seed round in 2008, 2009, and 2010. To arrive at the total investment value, it was presumed fees to the general partners equalled 2% per year for the first five years of the fund or a total of 10% of the invested capital.

Exhibit 14 - Investments in US Tech Companies which Raised a Seed Round in 2008 - 1020

Source CB Insights.

Invested Round	Number of Firms	Average Investment $000	Total Invested $000
Original Round	1,119	670	749,730
2nd Round	534	4,270	2,280,180
3rd Round	335	11,090	3,715,150
4th Round	172	23,570	4,054,040
5th Round	96	56,850	5,457,600
6th Round	30	119,830	3,594,900
Fees			1,985,160
			21,836,760

In total as shown in Exhibit 12, there were 341 exits involving both mergers and acquisitions as well as initial public offerings. The data in Exhibit 15 shows the actual performance of the 1,119 companies (as presented in Exhibit 12) which raised a seed round in 2008, 2009, and 2010.

Exhibit 15 - Performance of US Tech Companies which Raised a Seed Round in 2008 - 2010

Source CB Insights

	Number	Estimated Average Value $Million	Total Exit $Million
Exited under $50 m	227	25	5,675
Exited over $50 m	40	75	3,000
Exited over $100 m	31	150	4,650
Exited over $200 m	25	350	8,750
Exited over $500 m	13	750	9,750
Exited over $1 b	5	2,000	10,000
	341		41,825

The data in Exhibit 15 shows the actual results provided investors with a total return of capital of over $41 billion, less than two times the total investment of $21.8 billion (Exhibit 14). From

the timing of investments and exits one can calculate the average required exit multiple for a venture backed company to contribute to a greater than median IRR of 14.7% (see Exhibit 13) for the venture firm.

Using these calculations one can determine that if the average company exit produces a multiple of 5 times the amount of invested capital, a venture capitalist will earn a 14.8% return (Exhibit 16), placing it just above the median return for all venture capital firms in the Pitchbook data as seen in Exhibit 13. On this basis an exit multiple of greater than or equal to 5 times should be seen as a success and anything below this value should be seen as not successful.

Exhibit 16 - Return Rates of US Tech Companies which raised a Seed Round in 2008 - 2010

Source CB Insights

Year	Invested in Exits	Multiple of Invested Capital on Exit			
		4	4.5	5	5.5
0	-21,836,760	-21,836,760	-21,836,760	-21,836,760	-21,836,760
1	78,052	312,208	351,234	390,260	429,286
2	468,312	1,873,248	2,107,404	2,341,560	2,575,716
3	623,685	2,494,740	2,806,583	3,118,425	3,430,268
4	779,058	3,116,232	3,505,761	3,895,290	4,284,819
5	1,416,843	5,667,372	6,375,794	7,084,215	7,792,637
6	1,499,190	5,996,760	6,746,355	7,495,950	8,245,545
7	1,273,140	5,092,560	5,729,130	6,365,700	7,002,270
8	2,577,060	10,308,240	11,596,770	12,885,300	14,173,830
9	1,293,660	5,174,640	5,821,470	6,468,300	7,115,130
IRR	-11.2%	10.4%	12.7%	14.8%	16.7%

When a researcher has data available which shows the amount invested and the amount returned to the venture capitalist, it is possible to easily determine the rate of return and determine whether or not a venture can be codified as having been successful. Problems exist in codifying success where there is no valuation or financial data. In cases, where there is no valuation or financial data attempts have been made to codify success based upon events such as raising capital or exits. Problems in codifying success also exist where only financial

and no valuation information may be available. To perform analysis without success data, researchers have used performance data about a firm to evaluate success. Using the knowledge gained in Exhibit 16 regarding required return rates and multiples of investor capital returned to venture capitalists, it is possible to assess the efficacy of each of the performance events and indicators.

In summary, the following has been used to design the research approach in this thesis:

- Success should be measured by external stakeholders;
- The stakeholder for whom success should be measured is the external investor; and
- Wealth maximization is the appropriate measure for defining whether or not a firm has been successful.
- Venture capitalists will codify an investment as having been successful if it returns an amount equal to or greater than five times the amount invested.

Using the framework above, this thesis can evaluate certain of the measures of success proposed by researchers.

3 Research Goals, Methodology and Data Sources

This thesis has determined that metrics used by researchers to measure performance may not be the same as those for measuring success. Furthermore, the metrics used by researchers for measuring success may or may not meet the requirement that an investor earn a sufficient return to codify the firm as being successful. Behind this research is the need to identify metrics which would be appropriate for managers of firms to adopt so they can use appropriate measures in the development of strategy. After all, if a manager sets out to meet an objective which is not truly indicative of success then it is less likely success will be achieved. If, however, the manager's objectives are aligned well with investor objectives there is at least a greater potential for successful outcomes for all concerned.

3.1 Research Goals

This thesis has three goals. The first goal is to evaluate the performance **events** used by researchers to indicate success has been achieved. The second goal is to examine performance **metrics** which indicate success. Finally, the third goal is to propose **new metrics** and determine whether they can be used as indicators of success.

The result will be the evaluation of a set of tools so researchers can pick appropriate tools in the identification of success and thereby perhaps improve on research which attempts to determine which entrepreneurial and managerial factors lead to success.

3.1.1 Research Goals Regarding Performance Events

Researchers have proposed four distinct events which can be used to codify a firm as having been successful. These events and associated hypotheses are:

- Hypothesis H1

  Given the needs of venture capitalists, mere survival of a firm (Hormiga et al 2011) is not an indicator of entrepreneurial success.

- Hypothesis H2

  There are three sub-hypotheses which flow from the receipt of venture capital funding (Spiegel et al 2016) being used as an indicator of success.

  H2.1 - Firms can be codified as having 'good' performance even when they do not raise venture capital.

  H2.2 – Raising an A Round is not necessarily an indicator of 'good' performance.

  H2.3 – There is no round, the receipt of which can necessarily be coded as indicating 'good' performance.

- Hypothesis - H3

  An M&A transaction (Kraussl and Krause 2014) is not necessarily a valid condition for the determination of success.

- Hypotheses H4

  There are two sub-hypotheses which flow from the identification of exiting as a result of an IPO (Gompers, Kovner and Lerner 2009) being indicative of success

H 4.1 An IPO is a valid condition for the determination of success.

H4.2 The timing of the IPO is unimportant.

3.1.2 Research Goals Regarding Performance Metrics

Instead of using performance events as indicators of success, **researchers have also used** performance metrics. These metrics and the hypotheses associated with them are as follows:

- Hypothesis H5

  Employee growth (Davidsson, 2009) is not a codifier of success.

- Hypothesis- H6

  There is a positive relationship between revenue growth and company vw64aluation (Davidsson, 2009).

- Hypothesis - H7

  There is a positive relationship between revenue growth and return to VC investors (Davidsson, 2009).

- Hypothesis - H8

  The private company growth rate hurdle to indicate success is in excess of 20%.

- Hypothesis - H9

  Pre IPO-growth rates required for venture backed companies going public is in excess of 20%.

3.1.3 Research Goals Regarding Success Metrics

Researchers have also proposed a series of success metrics. These metrics and the hypotheses associated with them are as follows:

- *Hypothesis - H10*

  There is no relationship between firm profitability and return of capital for venture capital backed software companies (Davidsson, 2009) .

- *Hypothesis - H11*

  There is no relationship between firm productivity (Krejci, 2015) as measured by revenue per employee and return of capital for venture capital backed software companies.

3.1.4 Developing New Performance and Success Metrics

The third objective of this thesis was to develop and evaluate new performance metrics. Three new metrics will be introduced and tested to determine whether they are indicators of success. The metrics to be introduced are capital efficiency, growth efficiency and financial velocity. The hypotheses to be tested are as follows:

- Hypothesis - H12

  There is a positive relationship between **financial velocity** as measured by the capital raised divided by the number of years a firm has existed for venture capital backed software companies and the valuation of a private firm.

- Hypothesis - H13

  There is a positive relationship between financial velocity as measured by the capital raised divided by the number of years a firm has existed for venture capital backed software companies and the valuation of a firm going public.

- Hypothesis - H14

  There is a positive relationship between financial velocity as measured by the capital raised divided by the number of years a firm has existed for venture capital backed software companies and the revenue velocity of them.

- Hypothesis - H15

  There is a positive relationship between financial velocity as measured by the capital raised divided by the number of years a firm has existed for venture capital backed software companies and the valuation multiple .

- Hypothesis – H16

  There is a positive relationship between financial velocity as measured by the capital raised divided by the number of years a firm has existed for venture capital backed software companies and the valuation multiple upon issuance of a public offering.

- Hypothesis - H17

  There is a positive relationship between firm **capital efficiency** as measured by the amount of capital invested to produce $1 of revenue for venture capital backed software companies and return to venture capital investors.

- Hypothesis - H18

  There is a positive relationship between **growth efficiency** and return to venture capital investors.

3.2 Methodological Approach

The literature review performed provided a definition of the problems with the measurement of success that have been identified. Each of the measures identified in the literature review needs to be related back to stakeholder needs to determine whether the measurement employed by researchers is valid. This method of analysis is needed as researchers appear to have not considered the effect the existence of other stakeholders may have had on the determination of appropriate codifiers of success. In order to demonstrate that overly broad definition of success are applied to the entire field of economics, this thesis has chosen to demonstrate how these codifiers are not indicative of success for one subset of entrepreneurial firms, those of venture capital backed software companies in the United States.

The selection of the software industry aligns with Schumpeter's definition of entrepreneurship (Schumpeter et al 1934), as it is an industry in the process of creating new products, new markets, and new business models. It is an industry which because of its size and prevalence around the globe, has sufficient data to be able to perform an analysis. It is also the subject of much of the research reviewed in the literature review.

This thesis was restricted to companies started in the United States because it is the largest playground in terms of the creation of venture backed software companies. In terms of stakeholders, the selection of venture capital stakeholders was made as there is a considerable quantity of data regarding the performance of venture capital backed software companies in the United States.

In examining this thesis, quantitative methods have been used and secondary data obtained from a number of existing databases. These databases rely on self-reported company data but for the most part materially represent all of the venture capital backed software

companies which exist in the US. As a result, the data used represents the sector in its entirety and not a sample.

In each of the hypotheses examined, research was done to attempt to calculate the rate of return earned by venture capital firms to see if the rate exceeded the 5 times capital hurdle rate established in the literature review and compare this with the performance or success metric chosen. In some cases, it was possible to calculate a correlation between factors and when possible, the correlation was noted.

The methods used are often blunt force instruments, designed to be used with limited data availability on private firm with unpublished financial data in an attempt to prove or disprove the hypotheses established. Further examination on a more detailed basis using actual firm data in each test would improve the accuracy of the results obtained.

3.3 Data Sources

Data has been obtained from a number of publicly available sources of US based software firms which had obtained venture capital. These sources included the following:

3.3.1 Crunchbase

Crunchbase, a database of public and private companies, was used to select all US based companies founded in 2008 in the software category group. The search was limited to one year, the software industry and the US to ensure comparability of data. The year 2008 was selected as over 10 years will have passed since the founding of the firm and the period tested does not span the financial crash, with companies in the sample having received venture capital funding after the crash. In total, records for 825 companies were obtained.

3.3.2 CB Insights

In order to examine whether it is possible to code a firm as having been successful based on the exit through a merger or acquisition, all companies listed on CB Insights in the Internet Sector (software and e-commerce) which had received more than $1 million of capital and had been sold for over $1 million at any time were examined. In total the data available

included 56 firms. Having only 56 firms available to investigate shows how difficult it is to get data on the value of mergers and acquisitions as this data is not often reported.

It is necessary to indicate a caution about the use of Crunchbase and CB Insights. These sources use four methods to obtain their data: updates from venture capitalists, machine learning that accesses news announcements and other data on the internet, an in-house data team and community members. While extensive, no method is perfect and there will inevitably be missing data.

3.3.3 Companies going Public

This thesis studied 58 companies from the software sector which went public from 2013 to 2018 in the US. These businesses are listed in Exhibit 17 along with the year they were founded and the year they went public. To determine whether these companies were successful, the ratio of pre-IPO valuation to the amount of capital invested in the company was calculated.

Exhibit 17 - Software Companies Examined in this Thesis

Company	Year Founded	Year of IPO	Company	Year Founded	Year of IPO
2U	2008	2014	Okta	2009	2017
Alteryx	1997	2017	Pivotal Software	2013	2018
Anaplan	2006	2018	Pluralsight	2004	2018
AppFolio	2006	2015	Rally Software	2001	2013
Appian	1999	2017	Rapid7	2000	2015
Avalara	2004	2018	Rocket Fuel	2008	2013
Benefitfocus	2000	2013	Rubicon Project	2007	2014
Box	2005	2015	SecureWorks	1999	2016
Carbon Black	2002	2018	SendGrid	2009	2017
Care.com	2006	2013	SmartSheet	2005	2018
Castlight Health	2008	2014	SolarWinds	1999	2018
Cloudera	2008	2017	SST	1996	2017
Coupa Software	2006	2016	SurveyMonkey	1999	2018
Cvent	1999	2013	Telaria	2005	2013

DocuSign	2003	2018	The Trade Desk	2009	2016
Domo	2010	2018	TrueCar	2005	2014
Dropbox	2007	2018	TubeMogul	2007	2014
E2open	2000	2012	Twitter	2006	2013
Elevate Credit	2014	2017	Varonis Systems	2005	2014
Everyday Health	2002	2014	Veritone	2014	2017
Five9	2001	2014	Workiva	2008	2014
Gogo	1991	2013	Xactly	2005	2015
GreenSky	2006	2018	Xoom	2001	2013
HubSpot	2005	2014	Yext	2006	2017
Instructure	2008	2015	Yodlee	1999	2014
Marin Software	2006	2013	YuMe	2004	2013
Marketo	2006	2013	Zendesk	2007	2014
MuleSoft	2006	2017	Zscaler	2008	2018
New Relic	2008	2014	Zuora	2006	2018

3.3.4 Large Public Companies

To examine the results of large public companies, 180 public software companies whose revenue in 2016 was over $100 million were selected. Data were obtained from publicly available sources on the internet including Google Finance and Yahoo Finance. To undertake the analysis, the valuation of the firm was divided by the revenue earned, thus calculating a revenue multiple. Using such an approach, one can determine whether increases in growth have an increased effect on valuation by causing the revenue multiple to increase.

3.3.5 Openview Survey

This thesis utilized data from a survey administered by OpenView, a US based venture capital firm, in June and July of 2018. This data is not available to the public but was obtained directly from Openview. The survey was open to any company and in total 402 software companies from around the world responded (See Exhibit 18). Out of total 402 surveyed companies, 75 had not yet received any venture capital backing and they were removed from the analysis. These companies are all in the business of Software as a Service with vertical, horizontal and infrastructure-based applications.

Exhibit 18 - Stages of Companies Examined

Source: Fanning & Poyar 2019

VC Stage	Number
Seed capital	113
Series A	93
Series B	55
Series C	37
Series D or later	29
Total	327

3.3.6 Unicorns

CB Insights tracks Unicorns, those private firms with valuations above $1billion from mostly technology industries. This thesis examined valuations for 146 US based Unicorns in the CB Insights database as at December 31, 2018 for which financial velocity could be determined (Exhibit 19). Their valuation and the "valuation multiple" (defined as the valuation divided by the amount of capital raised) has also been included. An obvious outlier, Uber, was removed from the data so its $72 billion-dollar valuation would not distort results.

Exhibit 19 - US Based Unicorns

Source: CB Insights

Company	Founded	Financing ($M)	Financial Velocity	Valuation ($M)	Valuation Multiple
Uber	2009	16,858	1,686	72,000	4.3
JUUL Labs	2017	2,041	1,021	15,000	7.3
Lyft	2012	4,762	680	11,500	2.4
WeWork	2010	5,460	607	20,000	3.7
GRAIL	2015	1,614	404	2,460	1.5
Airbnb	2008	4,398	400	29,300	6.7
Katerra	2015	1,290	323	1,000	0.8
Social Finance (SoFi)	2011	2,194	274	4,500	2.1
Instacart	2012	1,896	271	7,600	4.0
Magic Leap	2010	2,353	261	4,980	2.1
Kabbage	2009	2,488	249	1,000	0.4

Avant	2012	1,719	246	2,000	1.2
Letgo	2015	975	244	1,000	1.0
Lime	2017	467	234	1,100	2.4
Bird Rides	2017	418	209	2,000	4.8
Indigo Agriculture	2016	616	205	3,500	5.7
AppLovin	2012	1,385	198	1,400	1.0
OpenDoor Labs	2013	1,179	197	2,000	1.7
Devoted Health	2017	368	184	1,800	4.9
Brex	2018	182	182	1,100	6.0
Oscar Health	2012	1,267	181	3,200	2.5
Compass	2012	1,143	163	4,400	3.8
Pinterest	2010	1,465	163	12,300	8.4
DoorDash	2013	971	162	4,000	4.1
Zoox	2014	790	158	3,200	4.1
Infor	2002	2,633	155	10,000	3.8
Zume Pizza	2016	445	148	2,250	5.1
Peloton Interactive	2012	1,002	143	1,300	1.3
STX Entertainment	2014	700	140	1,500	2.1
Palantir Tech	2004	1,944	130	20,000	10.3
Snowflake Computing	2012	894	128	3,500	3.9
Slack Technologies	2009	1,266	127	7,100	5.6
Stripe	2010	1,000	111	20,000	20.0
SpaceX	2002	1,885	111	21,500	11.4
DraftKings	2012	727	104	1,350	1.9
Affirm	2012	725	104	2,000	2.8
Zenefits	2013	583	97	2,000	3.4
Robinhood	2013	539	90	5,600	10.4
Carbon3D	2014	432	86	1,700	3.9
SmileDirectClub	2014	426	85	3,200	7.5
Tempus Labs	2015	320	80	2,000	6.3
Coinbase	2012	538	77	8,000	14.9
Postmates	2011	578	72	1,200	2.1
Pony.ai	2016	214	71	1,000	4.7
Clover Health	2013	425	71	1,200	2.8
Fanatics	1995	1,695	71	4,500	2.7
Desktop Metal	2015	277	69	1,000	3.6
Convoy	2015	275	69	1,000	3.6
Cohesity	2013	410	68	1,000	2.4
Tanium	2007	770	64	6,500	8.4

4 Research Results on Performance Events

The fourth objective of this thesis has been to test whether any of the existing definitions of success accurately align with the measurement of success established in Section 3. This thesis has examined how both performance events and performance metrics are used as indicators of success. This first section of research results examines the use of performance events as indicators of success.

Researchers have proposed four distinct events which can be used to codify a firm as having been successful. These events are:

- Firm survival (Hormiga et al 2011)
- Receipt of venture capital funding (Spiegel et al 2016)
- An exit through a merger or acquisition (M&A) (Kraussl and Krause 2014)
- An exit as a result of an initial public offering (IPO) (Gompers, Kovner and Lerner 2009)

4.1 Research on Firm Survival as a Performance Event

Numerous researchers (eg Hormiga et al 2011) have concluded that mere survival of a firm is indicative of success, at least is one element used by entrepreneurs to indicate success (Fisher et al, 2014; Ray and Trupin 1989; Wach et al, 2016). Given the needs of venture capitalists for exits from their investment at a profit, it is counterintuitive to think that mere survival of a firm will meet the needs of a venture capitalist. It is worthwhile however to examine whether there are conditions in which survival of a firm can be seen as success by a venture capitalist.

4.1.1 Hypothesis H1

Given the needs of venture capitalists, mere survival of a firm is not an indicator of entrepreneurial success.

4.1.2 Data Source and Methodology H1

To examine Hypothesis 1, all US based companies founded in 2008 in the software category group reported in the Crunchbase database were examined. Employment data were obtained

from Crunchbase for firms that had received venture capital funding and firms were clustered in accordance with the number of employees they currently have and the amount of capital obtained per employee. A cut-off in number of employees and capital per employee was determined in order to examine whether firms could be deemed as having been successful

4.1.3 Results H1

Of the 825 firms in the study, 281 of them received some sort of funding and they had received between one and over six rounds of funding as shown in Exhibit 20:

Exhibit 20 - Summary Funding Statistics by Round

Source: Crunchbase

Funding Rounds	Number
1	112
2	65
3	24
4	25
5	18
6	14
>6	23
Total Receiving funding	281
Receiving no funding	544
Total	825

The operating status of these companies was as shown in Exhibit 21: 776 were still active at the time of the investigation and 49 had been closed;

Exhibit 21 - Company Operating Status

Source: Crunchbase

Operating Status	Number
Active	776
Closed	49

IPO	5
M&A	108
Leveraged Buyout	5
Acquihire	1

Employment numbers of these firms is in itself an interesting marker of success as all of the firms are the same age. The Crunchbase database showed employment levels of firms as shown in Exhibit 22:

Exhibit 22 - Number of Employees

Source: Crunchbase

Number of Employees	Number
1-10	182
11-50	294
51-100	96
101-250	57
251-500	28
501-1000	0
1001-5000	10
5001-10000	1
10000+	2
Unknown	106
Total	776

Of the 825 firms, 210 of them are known to have received over $5.5 billion of venture capital investment. The average amount of funding to these 210 firms was over $26 million. The top ten firms were as shown in Exhibit 23:

Exhibit 23 - Leading Fund Raisers

Source: Crunchbase

Organization Name	Total Funding Amount
2U Inc.	426,875,000
Health Catalyst	377,000,000
Asana	213,200,000

Sentient Technologies	174,380,450
Phononic	164,900,000
Sonatype	154,707,328
Turbonomic	149,500,000
LogicMonitor	142,949,998
Virtustream	129,642,925
XebiaLabs	121,500,000

After having received a venture capital investment, companies will invest in operations and attempt to grow so that they can one day earn a sufficient return to reward venture capitalists for their investment. As discussed in section 2.5.6 a sufficient return has been deemed to be an exit multiple greater than or equal to 5 times the amount invested by the venture capitalist. There are two conditions then in which survival of a firm, while necessary, may be insufficient to meet the needs of venture capitalists and for which there should be no conclusion made that survival is an indicator of success:

1. When firms receive venture capital investment but fail to grow then they will be unable to earn a return for their investors.

   Of the 210 companies receiving investments, 34 of them, after 10 years, still had between 1 and 10 employees. It can be assumed from the employment data that the firms have either survived but not prospered or that they have not survived and the data is slow to catch up with reality. In either case, while the firms may have survived, it is probable but not provable they have failed to earn a return sufficient to meet the goals of their investors and should not be seen as successful.

   It could be argued that the 84 firms with between 11 and 50 employees may not also have succeeded as they are too small to warrant concluding they were successful but they will be considered as potentially successful depending on how much capital was used to fuel their growth.

Given the lack of data though on the actual returns earned one may assume that an insufficient return has been obtained but this cannot be proven from the amount of data available.

2. The second scenario occurs when firms grow but use so much capital in their growth and they will fail to earn a return for their investors. Data is available to determine usage of capital per employee and this data can be compared with data on public firms to determine appropriate cut-offs for success.

   To determine how much capital is too much capital to earn a sufficient return, one needs to establish the relationship between capital per employee and return on capital. In order to establish the relationship between these two items, data was collected on all software initial public offerings between 2013 and 2018. The population selected consisted of 58 IPOs. The data in Exhibit 24 shows the relationship between capital per employee and return on capital.

Exhibit 24 - Relationship Between Return on Capital and Capital per Employee

Source: Crunchbase

Return of Capital	**Capital per Employee $000**
<3 times	663
3-5 times	334
5-8 times	303
>8 times	224

Exhibit 24 shows that the lower the capital per employee, the higher the return of capital which will be experienced by a venture capitalist. This data shows where capital per employee is above $334,000, venture capitalists have earned a return which is less than our cut-off return of 5 times capital invested.

Of the 210 companies in the sample, employment data was available for 174 firms and the record of capital per employee is as shown in Exhibit 25:

Exhibit 25 - Capital per Employee

Source: Crunchbase

Capital/Employee $000	Number
>500	29
400-500	10
300-400	9
200-300	20
100-200	36
<100	70
Total	174

One can use the data in Exhibit 25 to infer an approximate cut-off in terms of capital per employee beyond which a venture capitalist would not call an investment successful. The analysis of Exhibit 24 shows that a level of below $334,000 in capital per employee is reasonable to infer success however the data for this subset of firms is less granular. As a result, the level of $400,000 per employee has been utilized in an attempt to be conservative about inferring failure or success. Using a level of $400 thousand per employee, 39 of these investments should be seen as having used too much capital to be recorded as successful.

4.1.4 Conclusion H1

While necessary, firm survival is not sufficient to conclude that it has been successful as from the sample of 210 firms, 34 of these firms have survived but may not have not grown enough to earn a sufficient return and 39 firms have used too much capital to fuel growth. Thus, the hypothesis has been proven and it has been concluded that survival is not an indicator of success for venture capital backed firms.

4.2 Research on Receipt of Venture Capital Funding as a Performance Event

Speigel's (2016) attempt to understand what leads to the success of startups distinguishes between successful and unsuccessful startups based upon whether they have raised a series of funding from venture capitalists known as an A Round. According to Speigel, only 40% of

early stage internet startups are able to secure series A funding. It could then be extrapolated from Speigel's assertion, that a firm which receives any round of funding including or beyond a series A round is a successful firm. In order to examine whether there is a link between funding levels and performance one can pose three questions:

- Can a firm be codified as having 'good' performance if it does not raise any venture capital?
- Is there any way raising an A round can be seen as 'good' performance? Is there any indication of 'good' performance that can be determined with raising any later round of venture capital?

4.2.1 Hypothesis H2

There are three sub-hypotheses that flow from the questions posed above:

- H2.1 – Firms can be codified as having 'good' performance even when they do not raise venture capital.
- H2.2 – Raising an A Round is not necessarily an indicator of 'good' performance.
- H2.3 – There is no round, the receipt of which can necessarily be coded as indicating 'good' performance.

4.2.2 Methodology H2

To examine Hypotheses 2.1 to 2.3, the data used in Hypothesis 1 of this thesis was returned to, and data from the US software industry from 2008 recorded in Crunchbase was employed. Funding and employment data were obtained from Crunchbase for all firms and firms were clustered in accordance with the last round of funding received and the number of employees they currently have. A cut-off in number of employees and funding round received was determined in order to examine whether firms could be deemed as having been successful.

4.2.3 Results H2

Of the 825 firms in the study, 776 were still active at the time of the investigation and 49 had been closed. Of the 49 which were closed, 31 of them had obtained funding. Of the ones still

open, 245 had received some sort of funding and they had received between one and over six rounds of funding. The funding status of the companies was as shown in Exhibit 26:

Exhibit 26 - Summary Funding Statistics

Source: Crunchbase

Last Funding Round	Open	Closed	Total
Angel Funding	7	4	11
Convertible Note	4	0	4
Debt Financing	29	6	35
Equity Crowdfunding	1	0	1
Non-equity Assistance	1	0	1
Post-IPO Equity	1	0	1
Private Equity	20	0	20
Secondary Market	1	0	1
Seed	42	7	49
Series A	22	4	26
Series B	17	1	18
Series C	17	1	18
Series D	4	0	4
Series E	3	0	3
Series F	1	0	1
Series G	2	0	2
Venture – Series Unknown	73	8	81
Total Receiving Funding	245	31	276
Unknown	531	18	549
	776	49	825

The first thing to be noted from the data in Exhibit 26 is that only 276 companies of the 825 or 33% had received funding of any sort, While Speigel (2016) had claimed that 40% of internet startups received funding based on interviews in 2013 and 2014.

Hypothesis 2.1 - *Firms can be codified as having good performance even when they do not raise venture capital.*

To examine whether it is possible for a firm to have 'good' performance without raising venture capital, this thesis segregated those firms without venture capital

funding from those with funding. In total, of the 825 firms in the sample (including firms which have closed), 276 of them received funding of some sort. From the remaining firms, 31 which had received no venture capital funding and had closed were taken out. This resulted in 531 active firms to examine with no venture capital funding.

In order to codify a firm as having good performance this thesis looked at the number of employees the firm had. Of the 531 active firms, there was employment data available for 454 of the firms.

Exhibit 27 - Employment Data

Source: Crunchbase

Number of Employees	**Number of firms**
1 - 10	136
11 - 50	210
51 - 100	61
101 – 250	28
251 – 500	13
501 – 1000	6
Total	454

To determine whether performance had been 'good' it was assumed the number of employees at the launch of the firm was 2 and the number of employees at the end of the 10-year period was equal to the midpoint of the employment range. Both of these assumptions can be debated, particularly the assumption that the number of employees at the start of the firm was 2. While the OECD definition of high growth (OECD 2007) requires an annual growth of 20% or greater over three years from a base of 10 employees, the definition is a general one. The number 2 was selected as this thesis is looking at entrepreneurial firms, not solo businesses so determined that the starting point for measurement had to be two employees. It was also selected as one cannot infer the point at which a firm may have had 10 employees but we can assume that two employees existed in the first year due to the nature of startups in

the software industry. As an alternate measurement, it was assumed firms had 10 employees in the first year so it could be determined whether the OECD threshold had truly been passed. Finally, the compound annual growth rate (CAGR) in employment was calculated. As the Exhibit 28 shows, any firm with 11 – 50 employees or more, experienced a CAGR of greater than 30% using the assumption of 2 employees in the first year and any firm with above 50 employees obtained a CAGR of greater than 20%.

Exhibit 28 - Compound Annual Growth Rates

Source: Crunchbase

Number of Employees	CAGR Assuming 2 Employees in the first year	CAGR Assuming 10 Employees in the first year
1 - 10	10%	-7%
11 - 50	31%	12%
51 - 100	44%	22%
101 – 250	56%	33%
251 – 500	69%	44%
501 – 1000	81%	54%

As 20% is the annual growth level the OECD uses to separate high growth from low growth firms (OECD 2007), one must conclude that all firms which had over 50 employees after 10 years of business and perhaps many who had between 11 and 50 employees should be seen as having 'good' performance.

From the data in Exhibit 28, it can be concluded that H2.1 has been proven and firms can be coded as having had good performance even if they do not raise venture capital.

Hypothesis 2.2 – *Raising an A Round is not necessarily an indicator of 'good' performance.*

To examine Hypothesis 2.2, this thesis looked at the 158 firms founded in 2008 for which data was available which had raised at least an A round of capital. All firms in the sample which had received IPO funding or had been acquired were eliminated

from the examination of Hypothesis 2.2 as they will be examined specifically elsewhere.

Exhibit 29 - 'A' Round Summary Statistics

Source: Crunchbase

Status	Number
Closed	13
10 or fewer employees	14
11 or more employees	131
Total	158

Of the 158 companies, 13 of them had been closed and closure was presumed to be 'bad' performance. In addition, 14 of them had 10 or fewer employees and in accordance with hypothesis 2.1, having 10 or fewer employees was deemed to be bad performance. From the 158 companies identified 131 companies had received at least an A round of funding, had not closed and had greater than 10 employees.

As was stated when reviewing firm survival as an indicator of success, after having received a venture capital investment, companies will invest in operations and attempt to grow so they can one day earn a sufficient return to reward venture capitalists for their investment. When they grow but use so much capital in their growth and fail to earn a return for their investors, they should be seen as a failure.

As stated in Hypothesis 1, the lower the capital per employee, the higher the return of capital to be earned by a venture capitalist. Of the 131 companies remaining in the sample, the record of capital per employee is as shown in Exhibit 30:

Exhibit 30 - 'A' Round Capital per Employee

Source: Crunchbase

Capital/Employee $000	Number
>500	30
400-500	9
300-400	9
200-300	19
100-200	27
<100	37
Total	131

The findings in H1 indicate an appropriate cut-off of below $400,000 of capital per employee as an indicator of success. Using a level of $400 thousand as a cut off, 39 of the investments summarized in Exhibit 30 should be seen as having used too much capital to be recorded as good performers. Overall then 66 out of the 158 companies (13 closed, 14 with fewer than 10 employees and 39 with too much capital) or 42% of the sample which had received at least an A round of venture capital financing had performance that would be not deemed as 'good' and one can conclude that the sub-hypothesis 2.2 has been proven and raising an A round is not necessarily an indicator of 'good' performance.

Hypothesis 2.3 – *There is no round, the receipt of which can necessarily be coded as indicating 'good' performance.*

Having concluded that receipt of an A round of funding is insufficient to record a company as having good performance one can look to see if there is any evidence whether any round of capital, having been received, indicates good performance. For the purposes of Hypothesis 2.3, firms were categorized based upon which type of funding they had received beyond A rounds and the results recorded as shown in Exhibit 31:

Exhibit 31 - Subsequent Round Funding Statistics

Source: Crunchbase

Capital/Employee $000	Number	Capital/Employee Over $500K	%
B Round	17	4	24%
C Round	17	8	47%
D, E, F, or G Rounds	15	4	27%
Unknown Round Beyond A	39	8	21%
Total	88	24	

From the data in Exhibit 31, it can also be seen that between 21% and 47% of firms receiving specified rounds of funding ended up with performance which should be deemed to be poor. This is too great a percentage for one to be able to reach a conclusion broadly that firms reaching any of these stages has had good performance. On this basis, the hypothesis 2.3 has been proven and there is no round, the receipt of which can necessarily be coded as indicating 'good' performance.

4.2.4 Conclusion H2

It has been seen from this section that firms which do not receive venture capital can be deemed to have had good performance and there is no round of funding which would indicate good performance. Fundamentally, a firm can waste all of its funding and end up closed so any receipt of funding should be an event which is indicative of performance. The corollary that lack of receipt of funding should be deemed to be poor performance is also theoretically flawed when a firm can have such a good product and market it may not need funding. This analysis has demonstrated there should be no relationship between the existence or lack of funding in terms performance.

While the discussion of Hypothesis 2 has not directly addressed the issue of success, choosing to address performance instead of success, the same logic should flow for success as it does for performance. If it cannot be deemed that an event is indicative of good performance, neither should it be indicative of success. Performance and success cannot be tied to an event such as funding.

4.3 Research on Mergers and Acquisitions as Performance Events

A number of researchers in the area of entrepreneurship have moved from growth as a measure of success towards identification of exits. Kraussel (2014) concluded that success could be determined when a VC exited an investment before ten years from the anniversary of the investment through IPO or M&A. Nahata (2014) coded VC investments as successful if VCs exit from them via either IPOs or acquisitions. The hypothesis to be tested is:

4.3.1 Research Hypothesis - H3

An M&A transaction is not necessarily a valid condition for the determination of success.

4.3.2 Methodology - H3

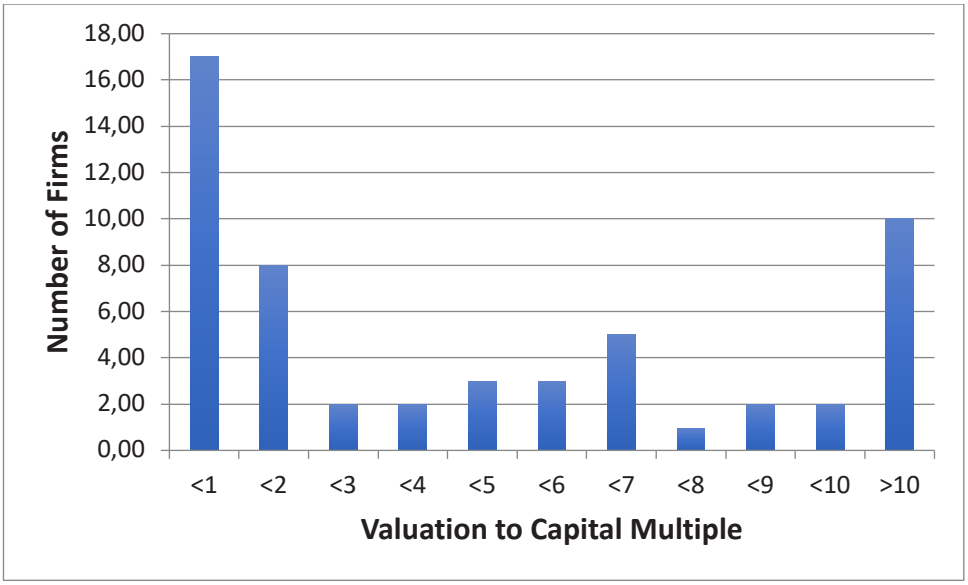
In order to examine whether it is possible to code a firm as having been successful based on the exit through a merger or acquisition, all companies listed on CB Insights in the Internet Sector (software and e-commerce) which had received more than $1 million of capital and had been sold for over $1 million at any time were examined. In total 56 firms were examined. Merger and Acquisition valuation data were obtained for these firms and firms were clustered in accordance with the valuation to capital multiple (VCM). VCM is measured as company valuation divided by capital invested. A cut-off in VCM was used in order to examine whether firms could be deemed as having been successful.

4.3.3 Results - H3

What was determined (Exhibit 32) was 17 out of the 56 firms in the study or 30% received less from the sale than the value of the capital invested in them. The 30% receiving less than the capital invested in them must be seen conclusively as failures. A further 8 firms or 14% received back more than 1 times but less than two times the value of their capital input. As was seen in the case of IPOs, these exits should be seen as not successful as well as they would not have paid back enough capital to warrant the investment in the first place given the risk reward ratio. While a small return was earned, in total a return of less than 2 times capital would fail to earn a sufficient return to be seen by the venture capitalists as having been successful.

Exhibit 32 - Number of Exits by Valuation to Capital Multiple

Source CB Insights



If the metrics determined in the discussion of Codification of Success (section 3.6) indicating an exit has to be for more than 5 times the amount invested are applied, only 23 of the firms covered in Hypothesis 3 or 41% of them produced a return greater than the minimum required by a venture capitalist.

4.3.4 Conclusion - H3

Based upon results one would have to conclude that Hypothesis 3 has been proven. The mere fact a firm and its venture capitalists exit their investment through an M&A transaction does not necessarily mean the firm should be coded as having been successful.

A merger or acquisition of a venture capital backed firm can be seen as a performance event. One can do research to determine further those factors which lead to performance through merger or acquisition and those factors which result in failure to achieve this level of performance. However, it is not acceptable to codify a firm as having been successful when only 41% of firms covered in Hypothesis 3 had an exit equal to over 5 times the amount invested.

4.4 Research on Initial Public Offerings as Performance Events

Following on the heels of evaluating an M&A event as indicative of success, one can turn to looking at IPO's as indicative of success as suggested by Kraussel (2014) (who imposed a ten-year limit on the exit) and Nahata (2014) among others.

4.4.1 Hypotheses H4

This research into whether IPOs are indicative of success has two hypotheses:

H 4.1 An IPO is a valid condition for the determination of success.

H4.2 The timing of the IPO is unimportant.

4.4.2 Methodology H4

To validate Hypotheses 4.1 and 4.2, 58 companies in the US software sector which went public from 2013 to 2018 were examined. The businesses examined are listed in Exhibit 17 along with the year they were founded and the year they went public. To determine whether the companies were successful, the ratio of pre-IPO valuation to capital multiple (VCM) in the company was calculated. This A cut-off in VCM was used in order to examine whether firms could be deemed as having been successful and for timing, the correlation between the length of time to go public and the VCM was calculated. Correlation was determined through the use of the following formula:

$$r = \frac{\frac{1}{n-1}\Sigma\left(X_{1i}-\bar{X}_1\right)\left(X_{2i}-\bar{X}_2\right)}{s_{x_1}s_{x_2}}$$

4.4.2.1 *Hypothesis 4.1*

An IPO is a valid condition for the determination of success

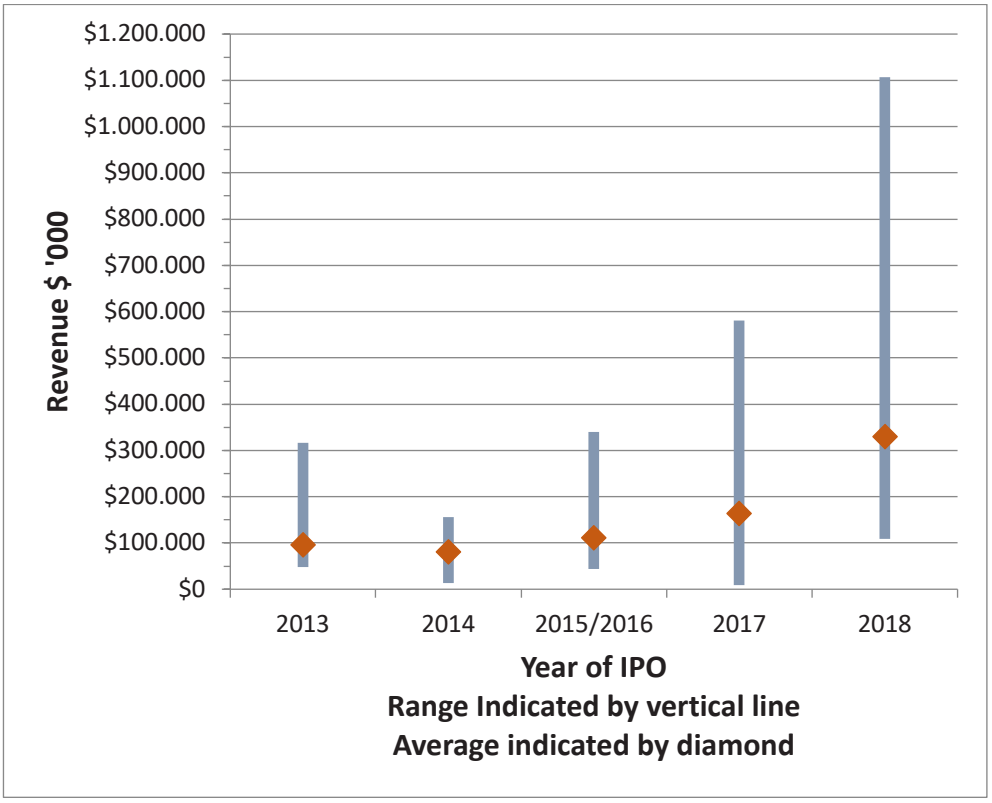
The analysis of the 58 software companies revealed a number of trends. Over the six years studied, the average revenue needed to go public has increased on average from about $95 million to over $330 million (see diamond markers in Exhibit 33). However,

the range of revenues among companies going public has increased dramatically (refer to blue bars in Exhibit 33). While there are three examples in the study of firms going public with less than $40 million in revenue, revenue of close to or above $50 million was typically needed in 2013 and 2014. The minimum revenue to go public increased to about $80 million in 2017, and surpassed $100 million in 2018. Thus, over the six years studied, the minimum revenue required to go public has increased from under $50 million to over $100 million.

Topping the list of companies with successful IPOs was Dropbox, which went public in 2018 with revenue of over $1.1 billion in the prior year. The next biggest business was SolarWinds with revenue of $728 million in 2017 followed by a handful of firms with over $500 million in revenue.

Exhibit 33 - Revenue Range Prior to IPO

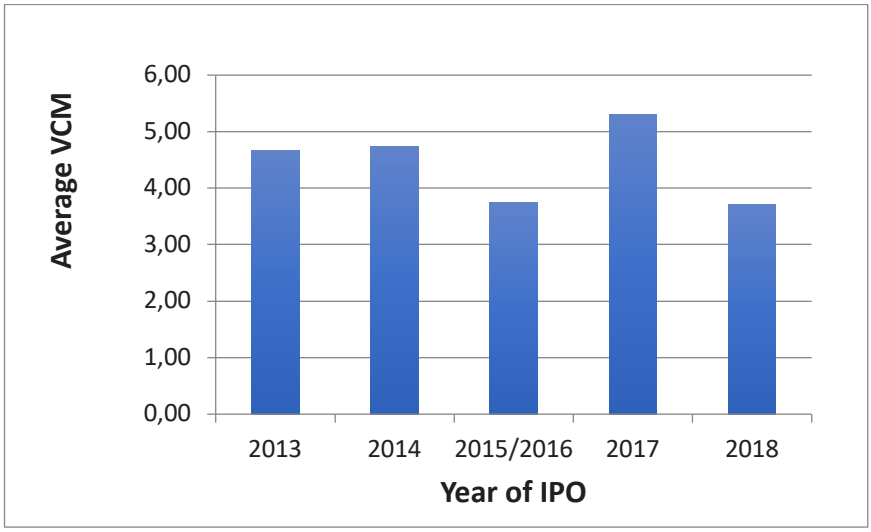
Source Edgar



At the same time as revenue ranges were increasing, VCMs (i.e. pre-IPO valuations of firms divided by the pre-IPO amount of capital invested) actually fell (refer to Exhibit 34). In 2013 and 2014, the average firm was sold at a multiple of 4.7 times the capital invested (VCM). By 2018, VCMs had declined to 3.7 times.

Exhibit 34 - Average VCM at IPO

Source Edgar

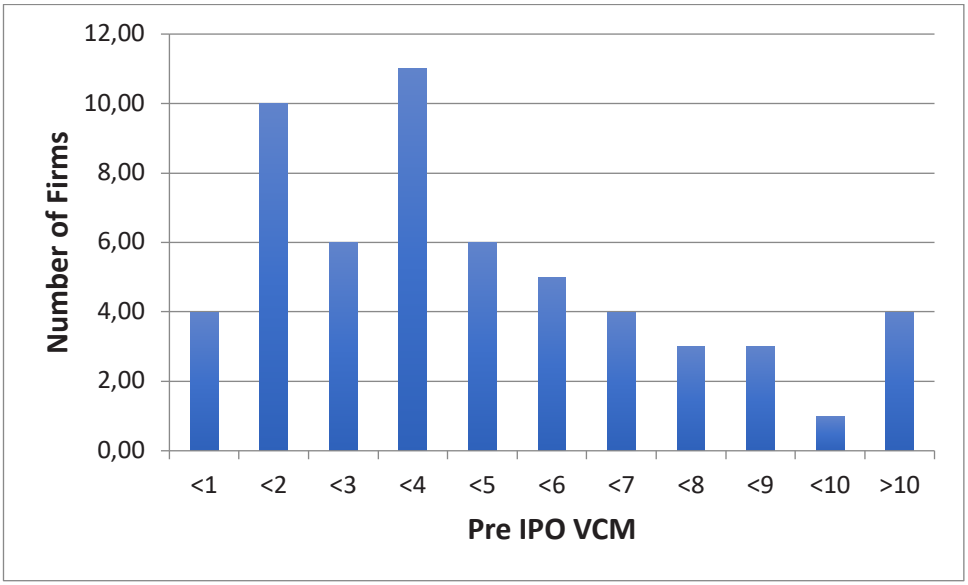


What is key though is the distribution of results in terms of VCMs. Exhibit 35 shows there were 4 firms returning a pre-IPO valuation less than the amount of capital invested. There were a further 10 firms returning a valuation of less than 2 times the amount of capital invested. While a small return was earned, in total a return of less than 2 times capital would fail to earn a sufficient return to be seen by the venture capitalists as having been successful.

Finally, if one sets the bar for earning a sufficient return as obtaining an exit for equal to or greater than 5 times the amount invested, only 26 of the 58 firms or 44% could be codified as being successful (Exhibit 35). Within the firms studied, there is an uneven distribution of timing of investments. Certain VCs would have invested at a lower price early in the history of fundraising. Certain other VCs may have contributed late stage capital and would have a different risk profile due to late stage investing. It is entirely possible a three times exits would be sufficient to earn a return satisfactory to certain limited partners.

Exhibit 35 - Pre IPO VCM

Source Edgar



4.4.2.2 Hypothesis 4.2 The timing of the IPO is unimportant.

Hypothesis 4.2 arises out of the claim made by Kraussel (2014) wherein he concluded that success could be determined when a VC exited an investment before ten years from the anniversary of the investment through IPO or M&A. Kraussel's statement is too broad of a statement to start with as some investors invest in Seed rounds and others in much later rounds potentially many years later. Putting an arbitrary limit is unworkable in the first regard as it belies an understanding of the nature of these investments. It is worthwhile to test however, if time matters, by measuring to see if the number of years between the founding of a company and the exit through IPO has any bearing on the return and thus the coding of a firm as having been successful.

In order to test the hypothesis 4.2., dates were determined for founding and IPO and the difference was used in order to calculate the numbers of years pre-IPO. Starting in 2015 and 2016 there was a large influx of private capital into US-based later stage companies as VCs determined they could earn superior returns by investing more money in later rounds, keeping companies private longer. The infusion of capital delayed IPOs for some companies which would have gone public in 2017 and 2018.

The impact of the infusion of capital was a change which motivated companies now choose to go public later in their development than they used to. Exhibit 36 shows how the number of years from inception to IPO has increased. Each of the data points represent the average age of companies launching an IPO in any particular year. While companies used to go public when they were between eight and 10 years old, the increased availability of later stage venture capital has enabled firms to stay private longer. The recent trend is for companies to undertake an IPO at an average age of 11 to 13 years from inception.

Exhibit 36 - Number of Years to IPO

Source Edgar

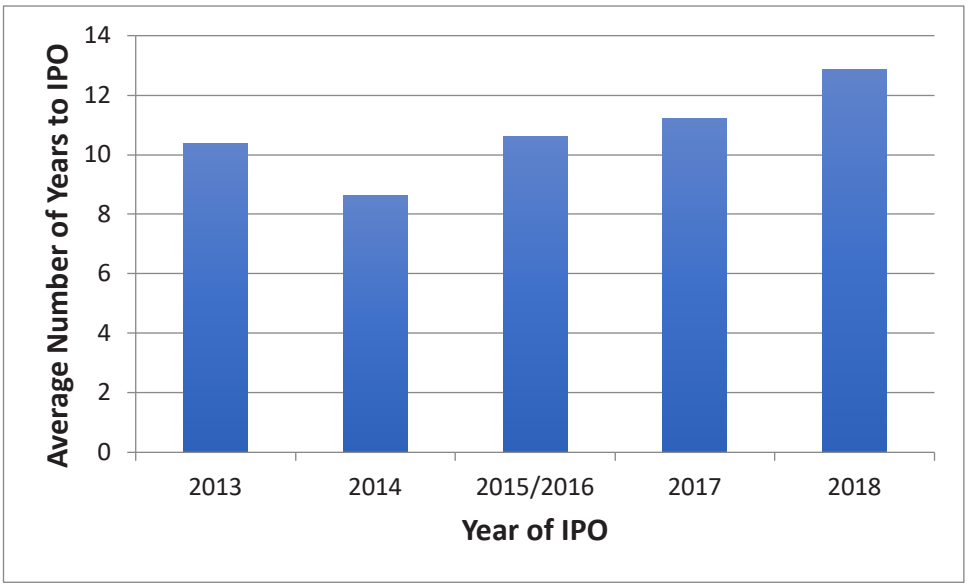


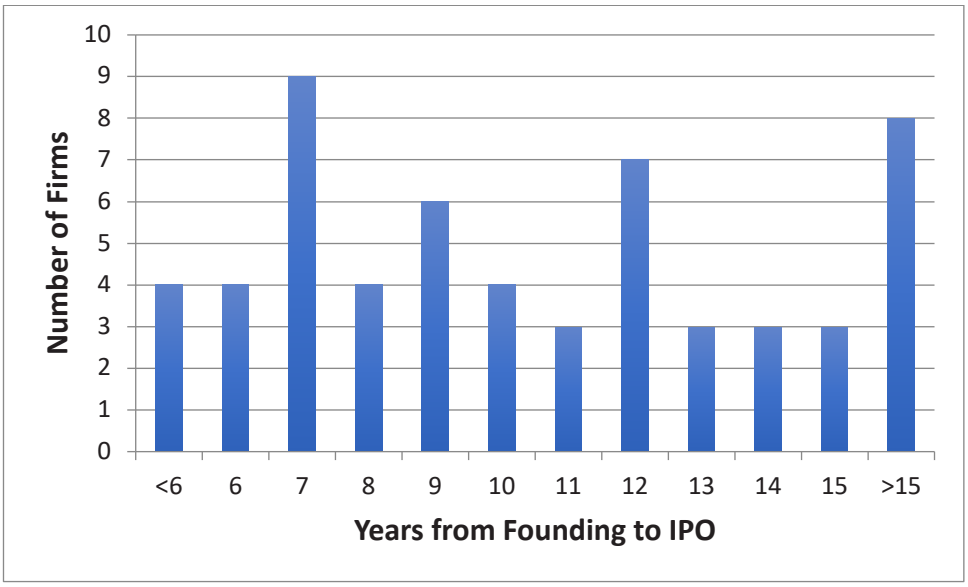
Exhibit 37 shows there is a very large range in the number of years between founding and an IPO, some of which may have been as a result of delays in going public as a firm grew. The data in Exhibit 37 would lead one to believe it doesn't matter how long a firm has been in existence before its IPO.

Further examination of the data shows a very slight negative correlation of -0.18 between the length of time to go public and the exit multiple achieved in doing so.

Based upon the low degree of correlation, it must be concluded that stipulating a time limit for a public offering to code a firm has being successful is invalid.

Exhibit 37 - Years from Founding to IPO

Source Edgar



4.4.3 Conclusion H4

Based upon results it can be concluded :

1. Hypothesis 4.1 has been disproved and one needs to conclude the mere fact a firm and its venture capitalists exit their investment through an IPO does not necessarily mean the firm should be coded as having been successful.
2. Hypothesis 4.2 has been proven and it has been concluded the timing of the IPO in terms of the number of years from founding to IPO is unimportant.

What can be said though is on average, an IPO was not sufficient to codify a firm as having necessarily been successful. An IPO is a necessary condition for success but not necessarily successful. To be more specific as to codifiers of success, researchers should stipulate the rate of return as measured by a metric such as the VCM in choosing firms which have exhibited success.

5 Research Results on Performance and Success Metrics

This second section of research results examines the use of performance metrics as indicators of success. In order to meet the fourth objective of this thesis which has been to test whether any of the existing definitions of success accurately align with the measurement of success established in Section 3.

Instead of using performance events as indicators of success, researchers have also used performance metrics. Choices for performance metrics used include:

- Employee Growth Rates (Davidsson, 2009)
- Revenue Growth Rates (Davidsson, 2009)
- Profitability (Davidsson, 2009)
- Productivity (Krejci, 2015)

5.1 Researching Employee Growth Rates as a Measure of Success

One consistent emphasis in the research has been the identification of growth as a primary indicator of business success (Davidsson, 2009).

5.1.1 Hypothesis H5

Employee growth is not a codifier of success.

5.1.2 Methodology H5

Hypothesis 5, examines the results of 58 US based software companies which went public between the years 2013 and 2018. The data was obtained from CB Insights. The firms covered are listed in Exhibit 17 along with the year they were founded and the year they went public. To determine whether employee growth is related to the valuation to capital multiplier (VCM), the coefficient of correlation between the two was determined through the use of the following formula:

$$r = \frac{\frac{1}{n-1}\Sigma\left(X_{1i}-\bar{X}_1\right)\left(X_{2i}-\bar{X}_2\right)}{s_{x_1}s_{x_2}}$$

5.1.3 Results H5

The Exhibit 38 shows the individual companies and their results.

Exhibit 38 - Employee CAGR and VCM

Source CB Insights and Prospectuses

Company	Employee CAGR	VCM	Company	Employee CAGR	VCM
Twitter	174%	13.2	Appian	39%	11.4
Dropbox	86%	6.6	The Trade Desk	112%	8.6
SolarWinds	46%	1.4	SendGrid	94%	6.0
DocuSign	60%	5.3	Benefitfocus	59%	3.6
Pivotal Software	317%	1.7	Zendesk	127%	5.9
MuleSoft	73%	7.5	Rapid7	45%	2.4
Anaplan	69%	5.5	Varonis Systems	88%	8.6
Pluralsight	55%	3.2	Domo	111%	0.6
Cloudera	108%	2.0	Rubicon Project	109%	5.4
Zscaler	83%	7.7	Xoom	43%	3.4
Box	99%	3.4	2U	157%	3.7
Avalara	60%	3.5	Care.com	110%	2.6
Okta	115%	5.0	Telaria	83%	2.3
SmartSheet	58%	9.4	Marketo	111%	3.1
SurveyMonkey	37%	1.8	Marin Software	115%	3.0
Zuora	67%	4.5	Everyday Health	59%	1.6
Gogo	30%	1.6	Instructure	131%	3.3
Castlight Health	129%	6.4	AppFolio	79%	5.0
TrueCar	78%	4.2	E2open	54%	1.0
Carbon Black	47%	3.2	Yodlee	49%	0.7
GreenSky	65%	-2.6	Five9	51%	2.9
SecureWorks	50%	1.4	Rally Software	54%	3.3
New Relic	154%	8.4	YuMe	78%	2.9
Rocket Fuel	189%	12.8	Elevate Credit	546%	2.0
Yext	69%	4.8	Xactly	67%	1.8
Coupa Software	77%	4.0	Veritone	174%	7.3

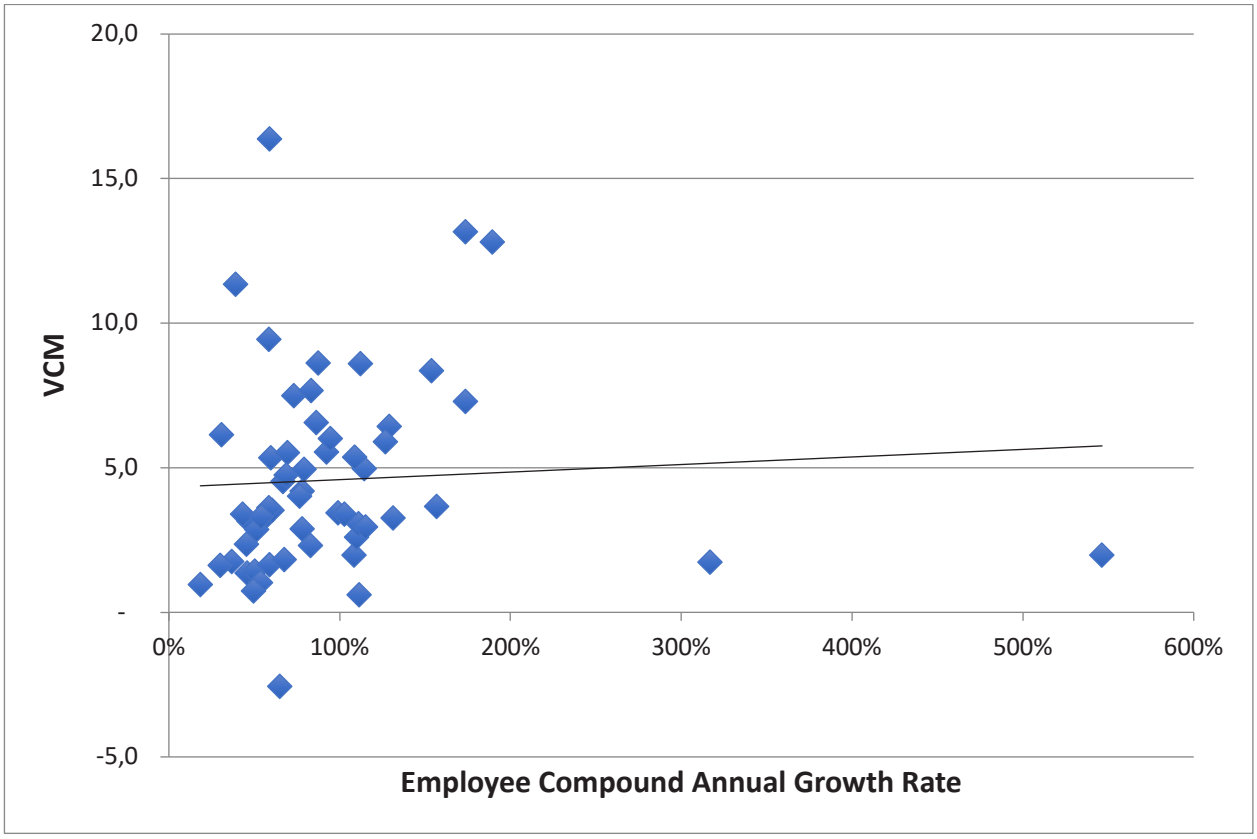
Cvent	59%	16.4	TubeMogul	103%	3.4
Alteryx	31%	6.2	SST	18%	1.0
HubSpot	92%	5.6			

A scan of the numbers and the graph itself in Exhibit 39 shows there is little relationship between employee growth rate and the return earned by investors and this was confirmed through calculation of the correlation between these two factors. The correlation between the two factors is only 0.06 showing that there is virtually no relationship between how fast a company grows as measured by the number of employees and the return earned by investors.

As a result of the low correlation, one must conclude the hypothesis has been proven and employee growth is not a codifier of success.

Exhibit 39 - VCM versus Employee CAGR

Source CB Insights and Prospectuses



5.1.4 Conclusion H5

Based upon the data, it has been concluded employee growth is not a codifier of success and thus the hypothesis is proven. Employee growth rates may make a very good metric for measuring performance although they do not make a good one for codifying a venture as having been successful.

5.2 Researching the Relationship between Growth and Valuation

A consensus is emerging in the literature that revenue growth is preferred over employment growth as the more relevant growth indicator (Davidsson et al, 2009). If revenue growth is preferred, then one must ask several related questions:

- Is there a relationship between revenue growth and valuation?

- Is there a relationship between revenue growth and valuation to capital multiple (VCM) for venture capitalists?
- What growth rates are required for private companies?
- What growth rates are required for companies to go public?

The questions posed above need to be asked against a background such as the one proposed by the OECD and others which sets the bar for designating a company as high growth at 20%. Four interrelated hypotheses have been examined.

5.2.1 Hypothesis- H6

There is a positive relationship between revenue growth and company valuation.

5.2.2 Methodology – H6

To examine the relationship between growth and valuation, revenue results and public market valuations were obtained for 180 public software companies whose revenue in 2016 was over $100 million. These data were obtained from publicly available sources on the internet being Google Finance and Yahoo Finance. To undertake the analysis of the companies, the valuation of the firm was divided by the revenue earned, thus calculating a revenue multiple. From the data one can determine whether increases in growth has an increased effect on valuation by causing the revenue multiple to increase. To determine whether the capital multiplier is related to revenue growth, the coefficient of correlation between the two was determined through the use of the following formula:

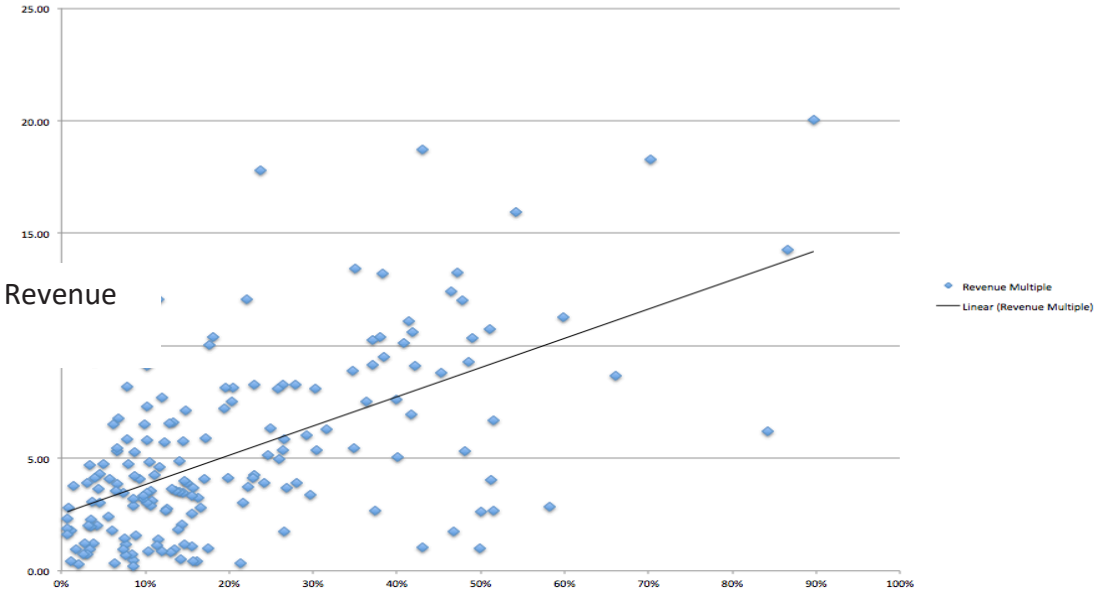
$$r = \frac{\frac{1}{n-1}\Sigma\left(X_{1i}-\bar{X}_1\right)\left(X_{2i}-\bar{X}_2\right)}{s_{x_1}s_{x_2}}$$

5.2.3 Results – H6

Exhibit 40 is a graph which shows the relationship between the growth rates of companies and their associated revenue multiple with a correlation coefficient of 0.58.

Exhibit 40 - Public Software Company Revenue Multiples

Source: Google Finance



Revenue

Growth Rate

Data for private companies is more difficult to obtain, but Thomasz Tunguz of Redpoint Ventures disclosed the results for 14 private mergers. The Exhibit 41 summarizes his findings:

Exhibit 41 - Private Software Company Multiples

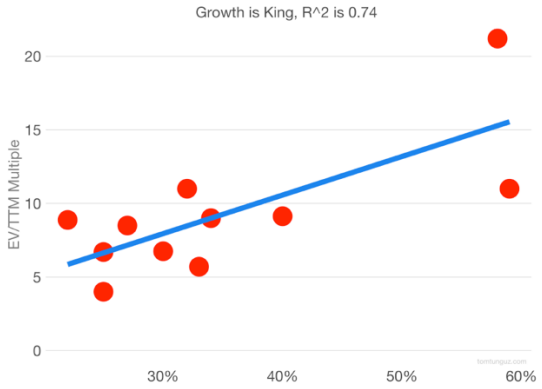
Source: Thomasz Tunguz (tomtunguz.com)

Transaction	Price	TTM Rev	Growth Rate	Gross Margin	Year of Sale	Enterprise Value	EV/TTM
Microsoft/Github*	7,500	300	50%		2018	7350	24.5
Salesforce/Mulesoft	6,500	297	58%	73%	2018	6296	21.2
Workday/Adaptiveinsights	1,550	107	30%	74%	2018	1520	14.2
SAP/Concur	8,300	546	32%	63%	2014	5988	11
SAP/SuccessFactors	3,764	328	59%	66%	2011	3599	11
Salesforce/Demandware	2,800	274	40%	71%	2016	2502	9.1
Oracle/Eloqua	957	96	34%	72%	2012	864	9
SAP/Callidus	2,400	253	22%	61%	2018	2247	8.9
SAP/Ariba	4,607	517	27%	66%	2012	4390	8.5
Microsoft/LinkedIn	26,500	3,615	30%	87%	2016	24385	6.8
Oracle/Responsys	1,770	194	25%	53%	2013	1291	6.7
Cisco/Broadsoft	2,288	362	10%	72%	2018	2137	5.9
Oracle/Taleo	1,921	315	33%	67%	2012	1805	5.7
IBM/Kenexa	1,397	333	25%	61%	2012	1332	4

Accompanying graph (Exhibit 42) shows the same relationships seen in the public company analysis of Exhibit 40:

Exhibit 42 - Revenue Multiples

Source: Thomasz Tunguz (tomtunguz.com)



Thomas Tunguz calculated the correlation coefficient, which, in the case of these private companies, is a healthy 0.68.

5.2.4 Conclusion - H6

It has been concluded based upon a correlation of 0.58 in the case of public companies and 0.68 in the case of private companies that Hypothesis 6 has been proven and there is a strong positive relationship between the revenue growth rate and the valuation of a company.

5.3 Researching the Relationship between Growth and VC Return

5.3.1 Hypothesis - H7

There is a positive relationship between revenue growth and return to VC investors

5.3.2 Methodology - H7

To understand the relationship between revenue growth and return to venture capital investors, the results of 58 US-based public companies which went public from 2013 to 2018 in the software sector. The businesses are listed in Exhibit 17. To determine whether investor return as measured by the valuation to capital multiple (VCM) is related to revenue growth, the coefficient of correlation between the two was determined through the use of the following formula:

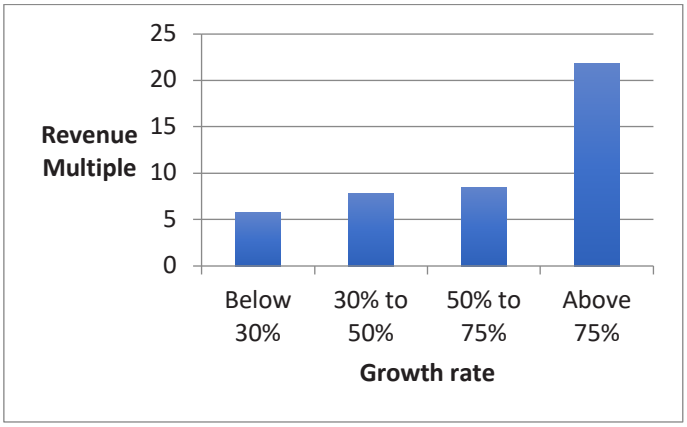
$$r = \frac{\frac{1}{n-1}\Sigma\left(X_{1i}-\bar{X}_1\right)\left(X_{2i}-\bar{X}_2\right)}{s_{x_1}s_{x_2}}$$

5.3.3 Results – H7

The Exhibit 43 shows that valuation to revenue multiples (VRM) increase with increased growth rates and thus confirms the relationship between growth and valuation. Higher growth brings a higher valuation.

Exhibit 43 - Growth Rates and Revenue Multiples

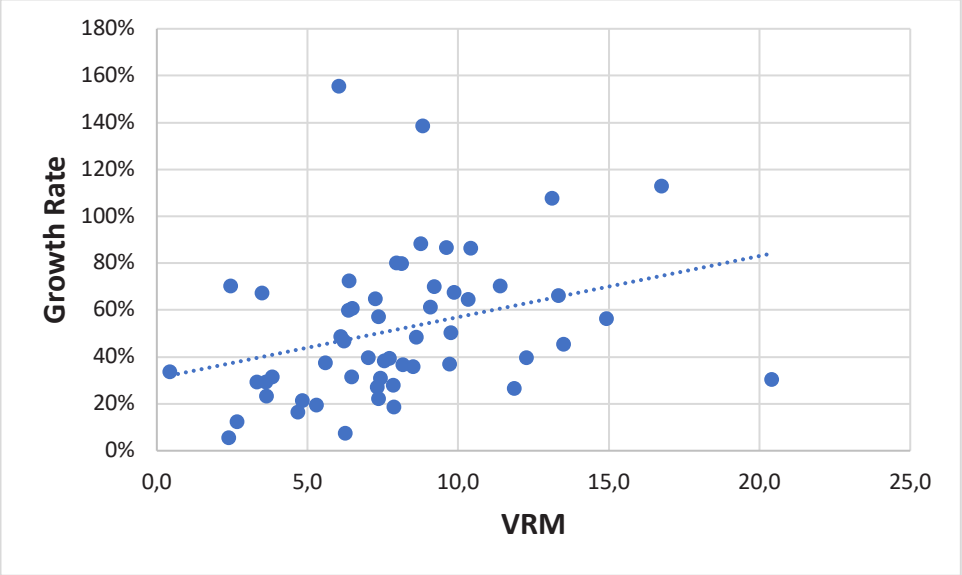
Source: Yahoo Finance November December 2018



There is a very direct impact of growth on valuation. For the firms studied in Hypothesis 7, the relationship between revenue growth and VRM was calculated. There is a correlation of 0.61 between the revenue growth rate of a firm and its VRM when going public. The relationship between revenue growth rate and VRM can be seen in Exhibit 44 showing increases in revenue in line with increases in valuation.

Exhibit 44 - The Impact of Growth on Valuation

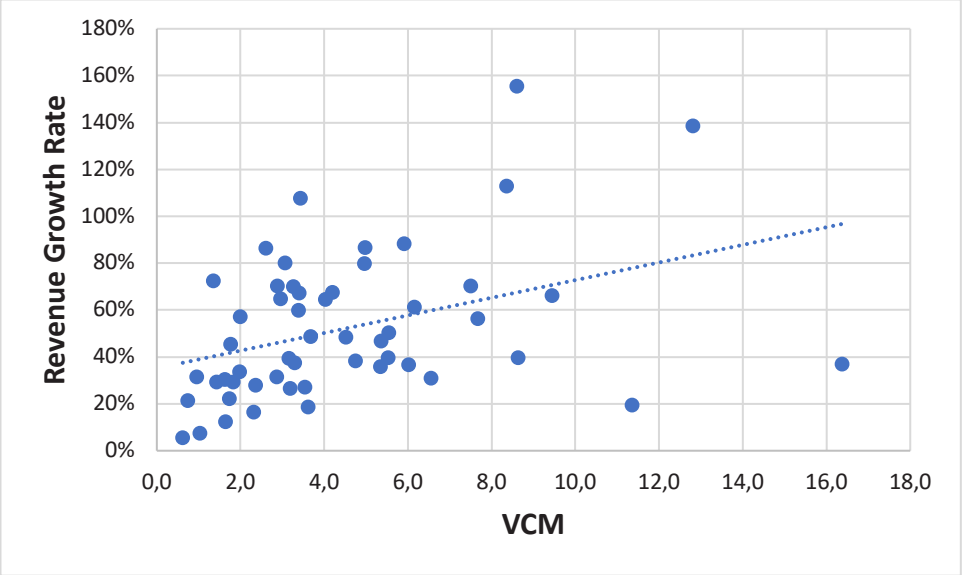
Source: Yahoo Finance



This thesis also sought to determine whether there is a relationship between the revenue growth rate of the firm prior to its IPO and the valuation to capital multiple (VCM). It was determined there was a correlation of 0.42 measured between the two variables. The relationship between the two can be seen in Exhibit 45:

Exhibit 45 - The Impact of Growth on Return of Capital

Source: Yahoo Finance



5.3.4 Conclusion - H7

Based on a correlation of 0.42, it has been concluded there is a strong positive relationship between the revenue growth rate and VCM.

5.4 Researching Private Company Growth Rates

5.4.1 Hypothesis - H8

Private Company Growth Rates is in excess of 20%.

5.4.2 Methodology – H8

In order to determine whether required growth rates are in excess of 20%, results of the survey by OpenView were examined. Out of total 402 surveyed companies, 75 had not yet received any venture capital backing and they were removed from the analysis. Growth rate data and valuation data were obtained and firms were clustered in accordance with size to determine what growth rates are being experienced and whether there were different growth rates for companies of different sizes.

5.4.3 Results – H8

In order to make the calculation of growth rates applicable to a stage of development, companies were divided into three pools depending upon the amount of annual recurring revenue they were recording (Exhibit 46). The three pools consist of:

- Companies with under $1 million annual recurring revenue
- Companies with between $1 million and $5 million annual recurring revenue
- Companies with over $5 million annual recurring revenue.

Exhibit 46 - Average SaaS Company Growth rates %

Source: Fanning & Poyar 2019

	% Under $1M	% $1M - $5M	% Over $5M
Number	87	107	134
Average	166.0	120.4	70.8
Median	100.0	89.2	49.5
Top Half	304.6	179.6	116.9
Bottom Half	27.5	60.1	24.8
Top Quartile	497.8	258.4	162.7
2nd Quartile	120.1	100.7	69.7
3rd Quartile	55.3	77.6	37.2
4th Quartile	0.9	43.2	12.0

As a company grows in size, the average growth rate declines. Thus, the growth rate required to be seen as successful should also decline as a firm grows in revenue.

It is interesting to note the difference between those companies who had received venture capital and those who had not. The average growth rate of companies under $1 million who had received no venture capital was only 109% versus companies in the sample who had received VC funding whose average growth rate was 166%. Similarly, the medium growth rate for those which received no VC money was 40% and for VC backed companies was 100%. The

difference between VC backed and non-VC backed growth rates shows the problems that can be created when mixing oranges with apples in the study of entrepreneurship. A researcher looking at firms in an industry may get different results for firms which had received venture capital than those who did not and combining the two in the same study may lead to a blended result with little meaning.

It is also possible to show hurdle rates (Exhibit 47) to put bands around growth rates so researchers can use hurdle rates in future research to compare practices and correlate them with different growth rates.

Exhibit 47 - Growth Hurdle Rates %

Source: Fanning & Poyar 2019

	Revenue Under $1M %	Revenue $1M - $5M %	Revenue Over $5M %
Mid-Point	100.0	90.0	112.5
Top Quartile	200.0	120.0	90.0
2nd Quartile	100.0	90.0	50.0
3rd Quartile	20.0	65.0	25.0
4th Quartile	-50.0	0.0	0.0

Clearly, the growth rates for venture capital backed firms are for the most part higher than 20%.

5.4.4 Conclusion - H8

Based on the data contained in Exhibits 46 and 47, the growth rate required for private companies to be seen as successful is in excess of 20% and the growth hurdle rate for success in fact depends on the size the companies are when they are measured.

The hurdle rates give some indication of the growth rates to be used to determine firm success. But as yet, there is no correlation between growth rates and the success of investors.

For that one can turn to look at growth rates of firms going public.

5.5 Researching Pre IPO Growth Rates

5.5.1 Hypothesis - H9

Pre IPO-Growth Rates required for venture backed companies going public is in excess of 20%.

5.5.2 Methodology – H9

To understand the growth rates of companies going public, the results of 58 companies which went public from 2013 to 2018 in the software sector in the US were examined. The firms covered were listed in Exhibit 17 along with the year they were founded and the year they went public. Growth rate data were observed to determine the actual growths rates experienced before going public.

5.5.3 Results – H9

Over the six years from 2013 to 2018, the average revenue needed to go public has increased on average from about $95 million to over $330 million (Exhibit 48 and see diamond markers in Exhibit 49). In addition, the range of revenues among companies going public has increased dramatically (refer to vertical bars in Exhibit 49). While there are three examples in the study of firms going public with less than $40 million in revenue, a level of close to or above $50 million was typically needed in 2013 and 2014. This level increased to about $80 million in 2017, and surpassed $100 million in 2018. Thus, over those six years, the minimum revenue required to go public has increased from under $50 million to over $100 million. This has occurred as VC firms have determined they can earn a greater return by investing more and keeping a company private longer.

Exhibit 48 - Average Revenue Prior to IPO

Source: Edgar

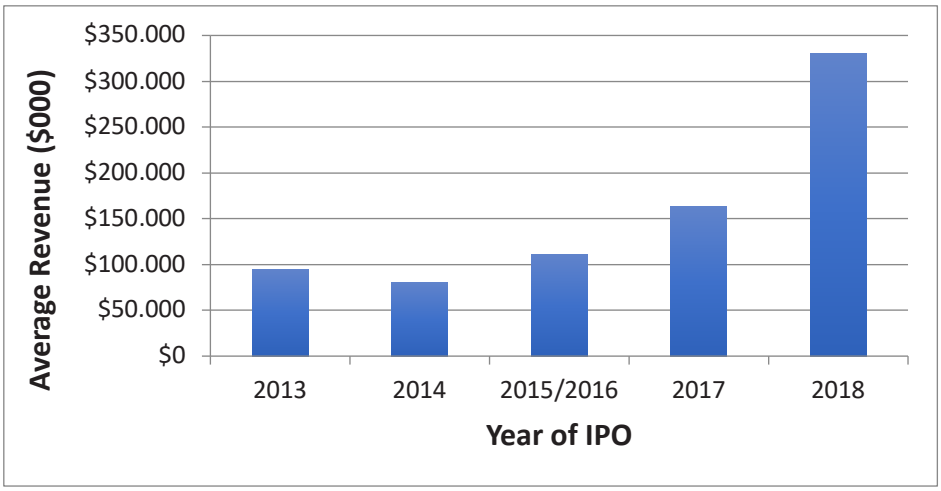
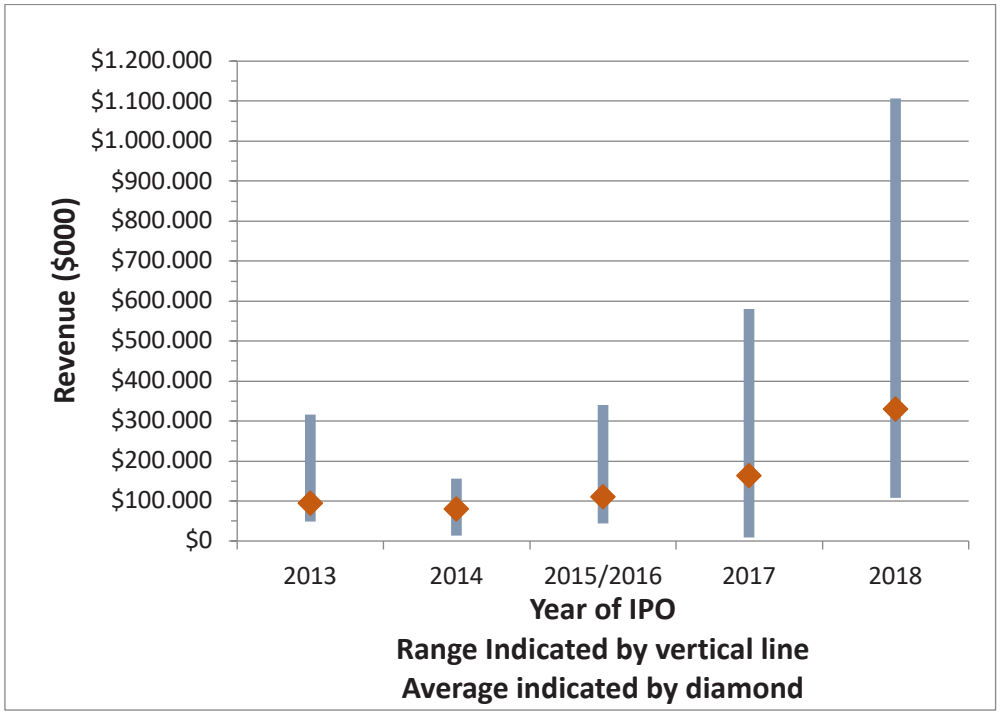


Exhibit 49 - Revenue Range Prior to IPO

Source: Edgar



At the same time, as the amount of revenue needed to go public increased, the expected growth rates have actually decreased. Exhibit 50 shows the average growth rates of businesses which had declared an IPO in the specific year (average growth per company is

calculated based on rates from the year prior to the IPO). The trend is not surprising given how difficult it is to maintain growth rates as a company grows. The trend exhibited follows the data seen in Hypothesis 3 where it was shown that hurdle rates for revenue growth decline as the size of the firm increases.

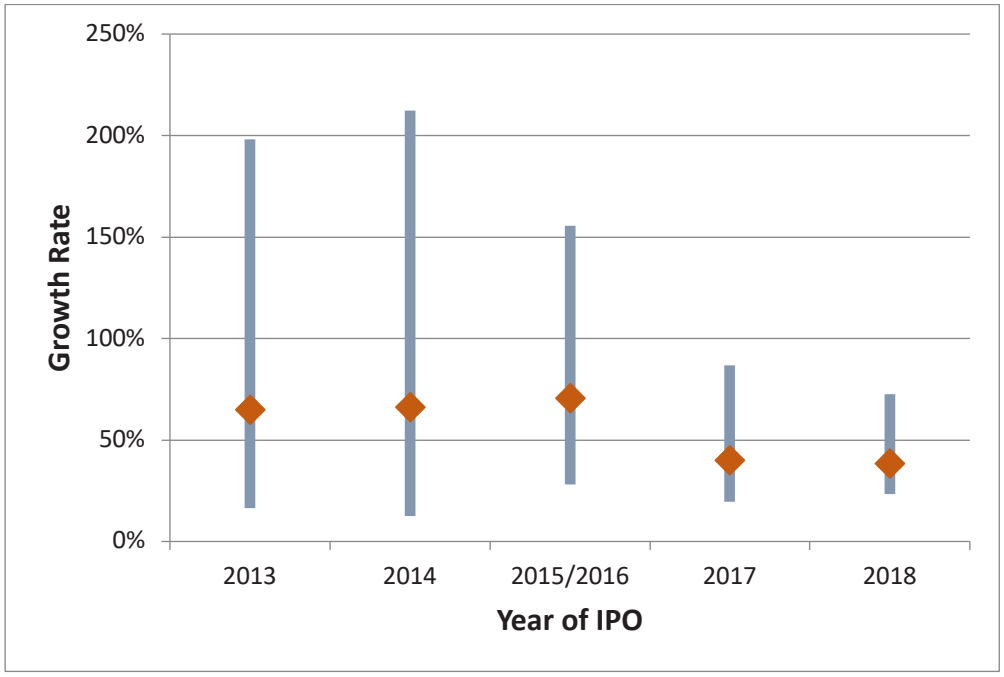
Exhibit 50 - Average Growth Rates Prior to IPO

Source: Edgar

In addition, the range of growth rates for companies going public has decreased (refer to vertical bars in Exhibit 51). The low end of expected growth rates for IPOs has increased somewhat from 15% to above 20%, the top end of the range of expected growth rates has declined from approximately 200% to about 75%.

Exhibit 51 - Pre IPO Growth Rate Ranges

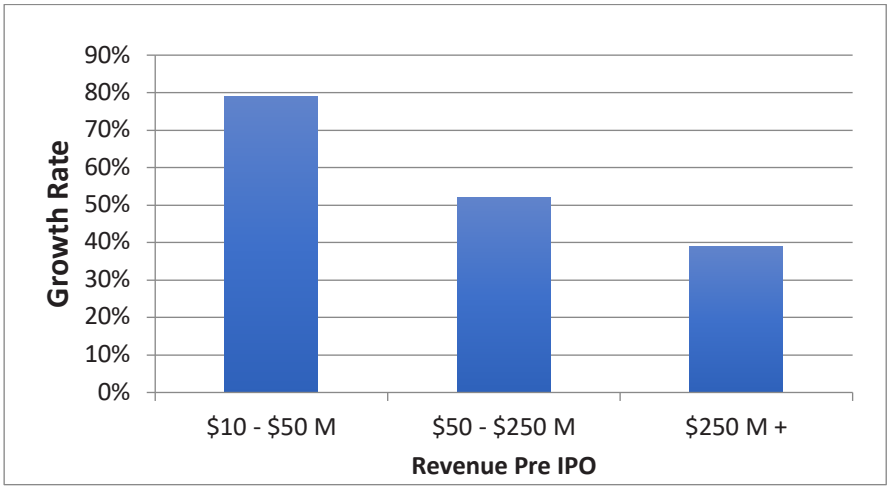
Source: Edgar



There were six companies in the study which grew more than 100% in the year before they went public. Most of the companies went public in 2014 and 2015 when revenue hurdles were lower. The relationship between average growth rate and revenue is also further confirmed in Exhibit 52, showing a declining rate of growth as companies grow, from an average 39% to 79% for the smallest firms.

Exhibit 52 - Revenue Growth Rates by Size

Source: Edgar



5.5.4 Conclusion – H9

Based on the data shown in Exhibit 52, growth rates required for venture backed companies going public to be seen as successful is in excess of 20% and in fact depends on the size they are when measured.

5.6 Researching Profitability as a Success Metric

Growth has also often not been seen to be a sign of sound development (Davidsson, 2009). Davidsson's research hypothesized that "firms which grow without first securing high levels of profitability tend to be less successful in subsequent periods compared to firms that first secure high profitability at low growth." (Davidson, 2009:388). Davidsson's assertion gives rise to the next hypothesis:

5.6.1 Hypothesis - H10

There is no relationship between firm profitability and valuation to capital multiple (VCM) for venture capital backed software companies.

5.6.2 Methodology – H10

The results of 58 companies which went public from 2013 to 2018 in the software sector in the US were examined to understand the relationship between profitability and VCM. The businesses examined were listed in Exhibit 17 along with the year they were founded and the year they went public. To determine whether the VCM is related to profitability, the coefficient of correlation between the two was determined through the use of the following formula:

$$r = \frac{\frac{1}{n-1}\Sigma\left(X_{1i}-\bar{X}_1\right)\left(X_{2i}-\bar{X}_2\right)}{s_{x_1}s_{x_2}}$$

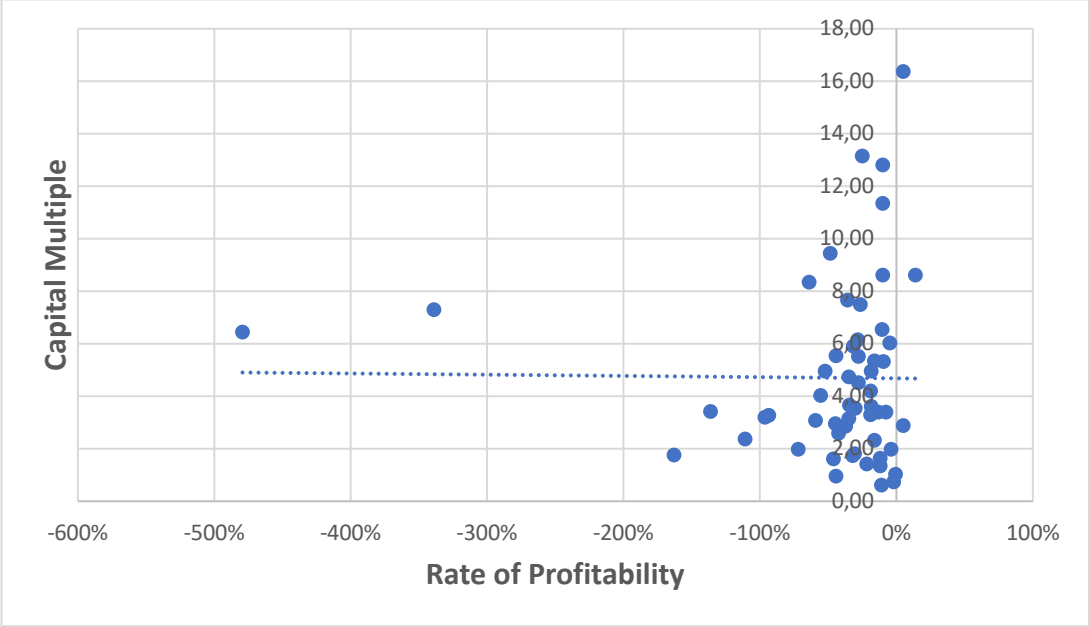
5.6.3 Results - H10

Of the 58 firms in the study, only 4 of them were profitable in the year before they went public. Profitability ranged from a high of 14% of revenue to a low of -479% of revenue. Five firms had losses in excess of 100% of revenue and seven had losses between 50% and 100% of revenue. The average rate of losses was equal to 47% of revenue.

Observing a loss rate of 47% enables one to conclude that profitability is not a requirement for going public, nor is it a requirement for success. The Exhibit 53 shows too, the lack of relationship between profitability and VCM. In fact, the correlation between the two factors is -0.01.

Exhibit 53 - The Relationship Between Exit Multiple and Profitability

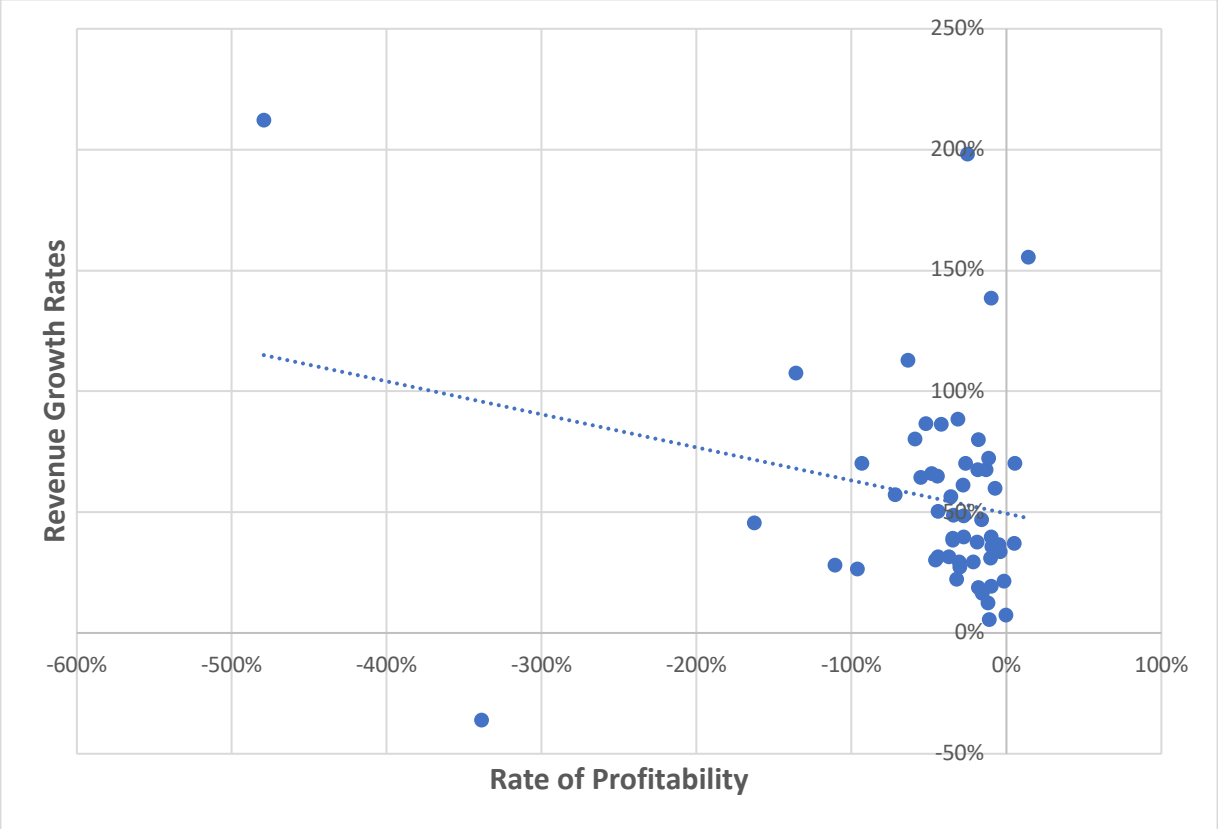
Source: Edgar



Data show there is no relationship between the profitability of a venture capital backed software company and whether or not it goes public. Hypothesis 7 shows there is a strong positive correlation between revenue growth rates and VCM to venture capitalists. What is interesting as a question is whether there is a relationship between revenue growth rates and profitability. To examine this factor, one can look at the relationship as shown in Exhibit 54.

Exhibit 54 - The Relationship Between Growth and Profitability

Source: Edgar



From the data shown in Exhibit 54 there appears to be an inverse relationship between profitability and revenue growth rates. In fact, there is a small but significant negative correlation between the two factors equal to -0.25. The correlation measured clearly shows larger losses leading to larger growth rates. The correlation between losses and growth rates should imply as well that the resultant larger growth rates should lead to larger returns of capital to venture capitalists.

5.6.4 Conclusion - H10

Based upon the inverse correlation measured between profits and growth rates of – 0.25 the hypothesis that there is no relationship between profitability and the return of capital for venture capital backed software companies has been proven. Thus profitability, while an excellent performance metric makes a very poor success metric for venture capital backed

software companies. Just because profitability is a poor success measure does not mean of course it is a poor performance measure. But the dynamic of venture capital requires high growth for high rates of return of capital and profitability stands in the way of the high growth rates required.

5.7 Researching Productivity as a Success Metric

Certain research has identified the ratio of earnings per employee as one indicator of success (Krejci, 2015). As has been seen, there are few earnings to speak of in venture backed technology companies but another proxy for earnings per employee would be revenue per employee. Revenue per employee is an excellent performance metric for measuring firm productivity but the question remains, would it make a good success metric.

5.7.1 Hypothesis - H11

There is no relationship between firm productivity as measured by revenue per employee and valuation capital multiple (VCM) for venture capital backed software companies.

5.7.2 Methodology - H11

To understand the relationship between productivity and return to venture capital investors, the results of 58 US-based software companies which went public from 2013 to 2018. The businesses are listed in Exhibit 17 along with the year they were founded and the year they went public. To determine whether the VCM is related to productivity, the coefficient of correlation between the two was determined through the use of the following formula:

$$r = \frac{\frac{1}{n-1}\Sigma\left(X_{1i}-\bar{X}_1\right)\left(X_{2i}-\bar{X}_2\right)}{s_{x_1}s_{x_2}}$$

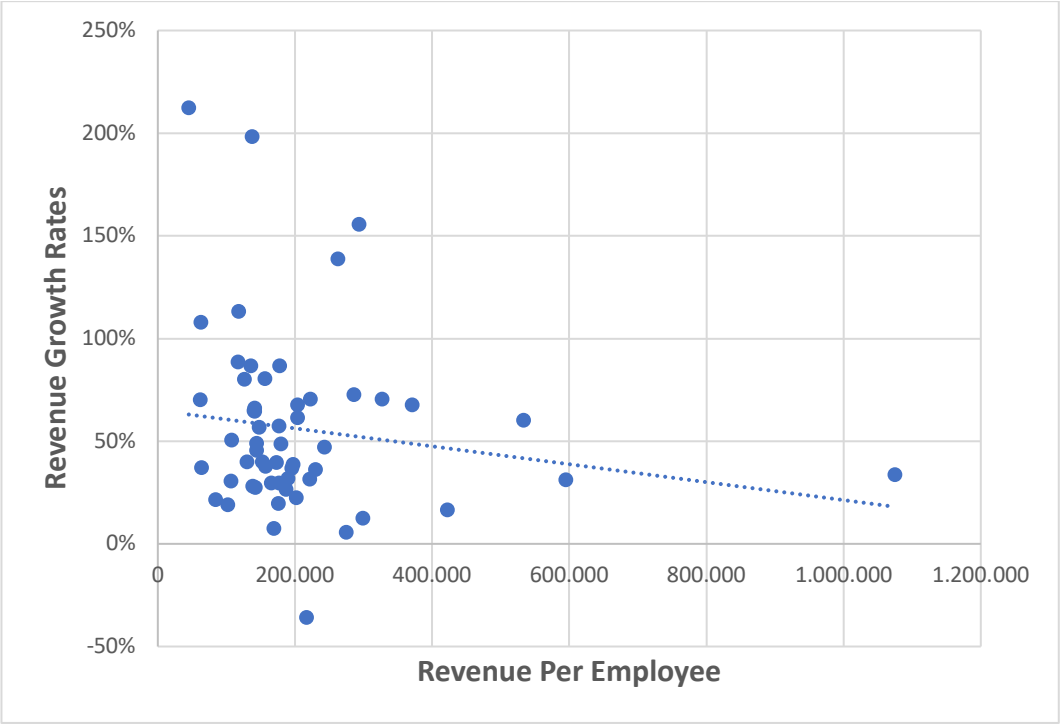
5.7.3 Results - H11

The average revenue per employee of the 58 firms in the study was $208,000 and the range was from $45,000 to over $1 million. Only three had revenue per employee greater than $500,000 and 37 had revenue per employee of less than $200,000.

What was most surprising from the data but perhaps shouldn't have been was the relationship between productivity and revenue growth. There was a slight negative correlation of -0.16 between the productivity and revenue growth indicating that higher revenue per employee was slightly correlated with lower growth levels. The relationship between these two factors can be seen in the Exhibit 55:

Exhibit 55 - Profitability and Revenue per Employee

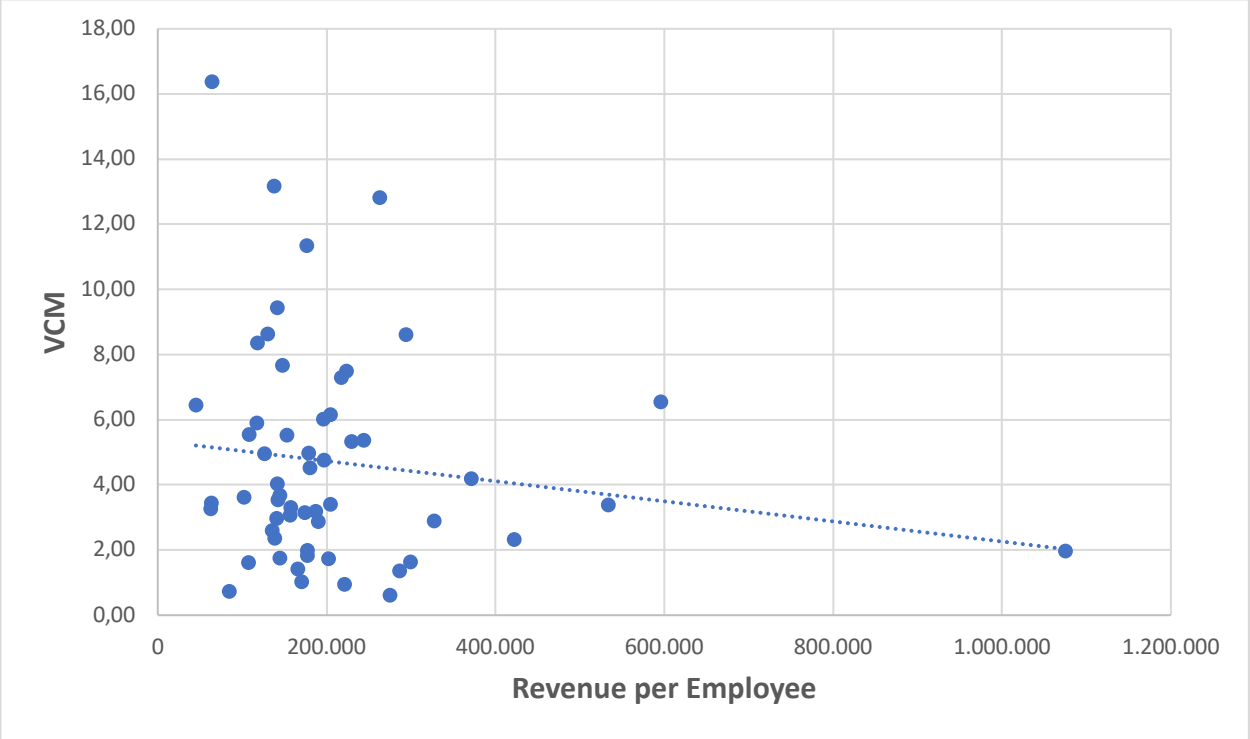
Source: Edgar



While there was a negative relationship between profitability and growth Hypothesis 11 shows there wasn't one between profitability and return to venture capitalists. The results of a similar calculation between productivity and return to venture capitalists shows a small negative correlation of -0.15 between the two factors (Exhibit 56).

Exhibit 56 - The Relationship Between Productivity and Return

Source: Edgar



Data shown in Exhibit 56 show a small negative relationship between revenue per employee and VCM. The intensity of relationship is so small however as to make it perhaps meaningless as an indicator of success and perhaps also not very useful as an indicator of performance.

5.7.4 Conclusion - H11

On the basis of the small negative correlation of -0.15, the hypothesis that there is no relationship between firm productivity as measured by revenue per employee and VCM for venture capital backed software companies has been disproven. However, the intensity of relationship is so small as to render it not valuable as a metric for either performance or success.

6 Discussion

For one type of entrepreneurial venture, the venture capital backed software company, the current methods of measuring success appear to be lacking. One must ask how the field of academic research into entrepreneurship has not identified the problems associated with measuring success and how has it not addressed the issue of stakeholders in major areas such as theory of the firm, the lifecycle of a venture / firm, and the meaning of success. Part of the failure may result from the focus in entrepreneurship which is on the entrepreneur and not on the firm itself or even the combination of the two into one entity. This ignores the part stakeholders have to play and the implications for the firm by having different types of stakeholders.

There have been numerous attempts to categorize research in the field of entrepreneurship. Some researchers have categorized by industry, others by the stage in the lifecycle and in fact there have been 19 different methods of classification identified, none of them relating to stakeholders (Morris et al, 2018). Ultimately, context matters most in the definition of success. Success would be defined differently at different stages of a company's life cycle. It would be defined differently perhaps in different cultures, for instance in countries which follow Islamic law or Sharia where interest is proscribed, success would be totally different than in the US. It is the contention of this thesis that the context which matters most in determining success in the US is that of the stakeholder. The discussion contained within this portion of the thesis will look at the benefits to using stakeholders as a method of classification for entrepreneurial ventures and identify the different potential classifications.

In addition to the disagreement as to classification, there is considerable disagreement as to the codification of success. The discussion will look at the ways firms have been classified as successful and what the impact would be to use a stakeholder perspective in this classification.

Finally, it will examine how a stakeholder perspective may change the way one looks at the lifecycle of a firm.

6.1 Discussion Regarding Differing Perspectives

This thesis has examined the impact of classifying ventures based on the type of stakeholders and has determined that in the case of venture capital stakeholders, there is a distinct meaning to success which may not be evident in the case of other stakeholders. While success determination is not the object of all research into entrepreneurship, it is beneficial to examine how classifying ventures by stakeholders instead of by current means may be beneficial. Reference is made here to the section entitled Stakeholders in Current Literature.

6.1.1 Discussion Regarding an industry Perspective on Research

Of the 11 industry specific research papers in Exhibit 3, there are a number that potentially could have benefitted from further categorization by stakeholder. While studies such as of the Spanish footwear industry (García-Villaverde et al, 2018), apparel retailers (Hwang and Chung, 2018), or German savings banks (Decker. 2018) may not have covered firms financed by venture capitalists, those involving manufacturing (Bruton et al, 2018; Agostino and Trivieri, 2018; St-Pierre et al, 2018) may include firms financed by venture capital.

In particular, research into Canadian manufacturing SMEs (St-Pierre et al, 2018) which examined how "domestic collaborations of small and medium-sized enterprises (SMEs) have a direct positive effect on their export intensity"(p.68) may have been directly affected by the presence or lack of presence of venture capitalists. It is possible the results could have been very different if venture capital financed firms whose need for export intensity is much stronger than others given required growth rates were separated from non-venture capital financed firms as their need for exporting may not be as strong.

In addition to manufacturing firms which may or may not be financed with venture capital, one study involved Spanish information and communications technology (ICT) firms (Bojica et al, 2018). The Bojica paper "explores the specific conditions under which key strategic alliances of small and medium-sized enterprises (SMEs) with commercial partners can become multiplex in knowledge exchange." (Bojica et al, 2018:294). The existence or lack of existence of key strategic alliances may be as a result of the stakeholders in firms and knowledge exchange may as well be directly influenced by stakeholders.

Finally, there are three papers covering biotechnology or the pharmaceutical industry (Hugh and Tan, 2018; Schierjott et al, 2018; Leppäaho et al, 2018). Developing such firms almost always requires the use of venture capital due to the large amounts of capital required for drug testing. The latter two papers deal with networks which may be directly influenced by the network of investors maintained by the venture capitalists who would have invested in the firms. In addition, the first paper's results as to corporate spinoffs could have been directly affected by the venture capitalists who invested in the originating firm.

In each case, there may be a role played by the venture capital stakeholders, if they existed, in the development of networks or alliances or the acquisition of knowledge. If such is the case, acknowledging the role of stakeholders in the results or determination of the affect the stakeholders had on the results would be beneficial to better understanding the phenomenon researched. In fact, it could be argued that failure to understand the role stakeholders have in the development of firms renders the research much less valuable.

6.1.2 Discussion Regarding Research with no Particular Perspective

Of the 10 research papers in Exhibit 4 with no perspective other than a general one, there are a number which potentially could have benefitted from further categorization by stakeholder.

> "We may truly be mixing apples with oranges. These ventures types differ on variables that are fundamental to the discipline of entrepreneurship, including entrepreneurial orientation, the liabilities of newness and smallness, types and uses of required resources, management and ownership structures, key success factors, primary stakeholders, and exit strategies. There is a clear need, then, when conducting empirical research, to more rigorously construct samples to reflect a given type of venture (Morris et al, 2018),

One research finding shows a significant relationship between small business loans and regional growth (Lee, 2018). By not taking into account the volume of venture capital or angel capital in a region, this research may fail to be discovering there may be other primary reasons for regional growth rather than just the volume of small business loans. It could be that

venture capital creates companies more deserving of small business loans and as a result, the two together contribute to regional growth.

Research by Siqueira et al (2018: p1) determined that "differences in capital structure derive from the process of prosocial organizing, which goes beyond the primary focus on financial preferences. Thus, for-profit social enterprises—and similar hybrid organizations, such as B corporations—may require theories adjusted to their context." At least the research identified the differences resulting from paying attention to one form of stakeholder, specifically in this case, society. However, the research on a general population of companies means no determination could be made as to whether other types of stakeholders would have an impact on firm structure.

Research on immigrant founders and export intensity has determined that "the presence of immigrant owners positively impacts export intensity, but negatively moderates the relationship between export intensity and financial performance." (Morgan et al, 2018: p 241). Lost from the Morgan analysis was the opportunity to determine whether there were other factors including the nature of the firm which could influence export intensity. For instance, immigrants may start proportionately more product oriented rather than service-oriented businesses, the former of which may have more export potential. Secondly, having started product rather than service businesses, it is possible they are more appropriate for venture capital investment and that is what is propelling export growth.

Role change by entrepreneurs (Mathias and Williams, 2018), perceived exit performance (Strese et al, 2018), the conceptualization of opportunity-oriented international entrepreneurship (Mainela et al, 2018) may all be affected by the existence of venture capital investors. Fundamentally, the requirements for high return by venture capitalists will have dramatic effects on the development of a company and failing to take this influence and the influence of other stakeholders into account can make the research meaningless. Essentially, some form of categorization is required to make sense of the phenomenon of entrepreneurship.

General theories of entrepreneurship are perhaps not viable. It is possible one may need different theories for different venture types (Morris et al, 2018). There is no evidence of any attempt to use stakeholders as a construct around which to do such research except, interestingly enough, it appears to be a practice yet to be identified. In order to produce a general theory, one must eliminate any specific situations which do not fit. But eliminating specifics may render the general theory meaningless. This is the situation in the study of entrepreneurship as the specifics are so different, one from the other, that general theories will fail to reflect reality. One must turn next to examine what then are the various types of categorization being advanced.

6.1.3 Discussion Regarding Categorization of Research on Entrepreneurship

Categorization has been attempted between small business and entrepreneurial ones, between entrepreneurial activities, based on growth, and in other ways. Numerous scholars have attempted to produce some form of classifications of ventures (Morris et al, 2018). Researchers have categorized ventures by their function to society (Parsons, 1956), by their aggressiveness (Cooper and Dunkelberg 1981) by their growth, capitalization, industrial sector etc. (Vesper 1990), by their technological orientation (Roberts 1991), by their growth orientation (Hisrich and Peters 1998), and by numerous other ways. Morris et all (2018) themselves propose there are four types of ventures; survival ventures, lifestyle ventures, managed growth ventures, and aggressive growth ventures.

Of the classification schemes outlined by Morris et al (2018) there has been no attempt to classify ventures based upon their stakeholders, an easily determined condition. Instead, what all of the classification schemes have in common is the use of classifications which are often not obvious thus require research to determine and most of all, are subject to interpretation with little guideline as to how to interpret.

At the most basic level is the attempt to differentiate between small businesses and entrepreneurial businesses. There is considerable overlap between the two types of firms (Carland & Carland 1984). The key for differentiation in this thesis is growth. Those keying on growth and meeting Schumpeter's definition of entrepreneurship through the use of

innovation to enhance growth and profitability are considered to be entrepreneurial while the others are small businesses. The attempt at classification in such a way leaves enormous grey zones. To what degree is innovation important? Does incremental innovation qualify or is the only acceptable type disruptive? And what is the difference between disruptive and incremental? What growth rates qualify? Is 20% enough but then what about a firm growing at 19%? The unclear categorization in research has gotten us to the trouble researchers are in.

Another approach has been to define entrepreneurial activity (Kunkel, 2001). His research posits 10 classes of entrepreneurial activity and again there are no clear distinctions between them to allow a researcher to divide firms by type and it is further not obvious externally what type a firm is, nor is it easy to ask when the differentiations are so indistinct. For instance, one category includes "Need-Driven Independent New Venturing – founding a high growth-potential, independent new venture started for the purpose of fulfilling a perceived market need." Another category is "Technology-Driven Independent New Venturing – founding a high growth-potential, independent new venture started for the purpose of commercializing or capitalizing on a particular technology." The distinction between the two types of businesses is particularly important for the types of ventures studied in this thesis. Arguably, one definition focuses on market driven firms and the other on technology driven firms. However, the difference between the two is not obvious. You need a market for a technology and a technology for a market so the differentiation between types is problematic. Similarly, differentiating between Income Substitution New Venturing and Hobby/Lifestyle New Venturing is similarly problematic.

A number of papers presented differentiate based upon growth (Ronstadt, 1982; Vesper, 1990; Sexton, Bowman- Upton, 1991; Hisrich and Peters ,1998). However, as has been seen, without research into growth levels, the use of arbitrary ones such as those proposed by the OECD result in the use of performance metrics potentially not indicative of good performance. In addition, does one differentiate between growth objectives or growth results?

In an attempt to reconcile many of the differing attempts at categorization, seminal research in the field proposed four types of ventures being Survival Ventures, Lifestyle Ventures,

Managed Growth Ventures and Aggressive Growth Ventures (Morris et al, 2018). The descriptions of each type appear reasonable however, one's ability to distinguish between different types of ventures is difficult as ventures can exist on the cusp between any two of the definitions.

Instead of murky boundaries which exist in other classification schemes, categorization by stakeholder is clean. It is often easy to determine the categorization without even having to ask a company. While this thesis only explored the category of venture capital stakeholders in order to make a point, there is a simple classification system based on stakeholders which could follow the line of who invested in the firm. While further research into the categorization schema would be needed, categorization by stakeholder could produce the following classifications of types of different stakeholders:

1. Public
2. Venture capital
3. Corporate venture capital
4. Angels
5. Friends
6. Family
7. Employees
8. Partnership
9. No Shareholders

In addition, another lens could be placed on firms as to whether they also see society as a stakeholder. This is an important lens as an entrepreneur must meet the needs of multiple stakeholders simultaneously to be successful in the long run. The entrepreneur cannot oppress employees or harm the environment simply in order to meet the needs of a specific external investor. As this thesis is not focussing on the subject of sustainability, it has presumed that entrepreneurs are acting in an atmosphere of enlightened value maximization and are meeting the needs of other than just the external investor stakeholder.

A classification scheme based on stakeholders would be clear, simple, easy to administer for research purposes and it would be aligned with stakeholder theory and with agency theory in a way the other classifications schemes are not. Using classifications, one can then do research to find the needs of each of the companies in each category. Given the needs, one can then determine what success is for companies in each category. The end result would be the ability to clearly define what success is for every company and thus be able to do research which aligns activities with success.

6.2 Categorization as Successful

In the end analysis, the categorization of an entrepreneurial venture as successful or not successful is extremely problematic. And yet it is very important to be able to make such a classification if one is to attempt to determine the factors responsible for making a firm successful.

What is key though is for researchers in the field of entrepreneurship to become more specific in their categorization of successful/not successful if research in entrepreneurship is to be advanced. In the same manner as shown here, researchers should have to fully explain what they consider to be success in any sub field they choose to do research and back it up with actual results if further research is to have any meaning.

As has been seen in the results of investigations into hypotheses eight and nine, the codification of success is dependent on the size of the enterprise. What is success for a $1 million firm is not the same as success for a firm of $250 million which may only be 10 years older. This caveat to the codification of success is likely applicable within other industries as well and is worthy of further study. Hypotheses eight and nine have introduced hurdle rates which are effectively value judgements which can be turned into parameters to guide future research. Future researchers may choose to accept the hurdle rates or reject them in favor of other levels of success.

From the analysis conducted in Hypotheses eight and nine, one can estimate a hurdle rate above which a firm approaching an IPO can be judged to have been successful. Given the averages seen in tests performed relating firm size to growth rates and capital returned one

could set the hurdle rates for success shown in Exhibit 57 to have been deemed to have occurred for analyzed US software companies with venture capital backing.

Exhibit 57 - Revenue Growth Hurdle Rates by Size

Revenue	Growth Rate %
Under $1M	100.0
$1M - $5M	80.0
$5M - $10M	60.0
$10M - $50M	50.0
$50M - $250M	40.0
Over $250M	30.0

Results also show that for at least one subset of firms, those being venture capital backed software companies, success has a very high bar. It is not sufficient to apply rules acceptable in other industries in order to determine whether a firm is successful. In fact, a small venture capital backed software company growing at 20% a year might be seen as successful if combined with other firms in a broader study. In terms of the parameters against which it is judged in public though, it is not fully a success.

Similarly, applying these parameters against a software company not backed by venture capital, one would be determining much too high a bar to codify whether or not a firm is successful. It may be that a venture backed company is a failure with a growth rate of 20% and yet a stupendous success at the same growth rate if it is not venture backed.

The same hurdle rates may be appropriate for other types of venture backed firms, say e-commerce, medical device or clean technology ventures for instance. However, before doing so, further research would be needed to determine whether the hurdle rates employed are appropriate.

Certainly, attempting to apply these hurdle rates for non-venture-backed companies in other industries would not be appropriate. As would using the rates that codify for success in other industries against the types of firms shown in this thesis. Fundamentally though, if one of the

purposes of studying entrepreneurial ventures is to better understand the growth of world-class companies then the growth rates determined are the ones to be looked for.

There are lists around the world which purport to praise the world's fastest growing firms. And yet frequently lists such as the Inc 500 for instance mix firms of different sizes and in different industries thus compounding the problem of not comparing apples to apples. Governments around the world are spending billions of dollars to stimulate the growth of firms hoping the stimulation will result in increases in wealth, GDP and tax revenue (Storey, 1994) without truly knowing what growth rates they should be expecting or what constitutes success in these programs. All of the resulting work would be much more valuable with a greater degree of understanding of the dynamics of growth, not through the production of generalized studies but from the very specific examination of actual results and the development of parameters which would enable us to differentiate between successful and less successful entrepreneurial growth records.

6.2.1 Discussion on Performance Events Codifying Success

It is perhaps too simplistic to codify a firm as being successful based upon the occurrence of a single event. Much research is more nuanced. There are many ways entrepreneurs view success and survival is only one of them (Wach et al, 2016; Ray and Trupin, 1989). There are few papers resorting to such a simplistic view of success as Spiegel (2016) does in stating that receipt of a round of venture capital is indicative of success. Similarly, the use of a merger or an initial public offering (Kraussel, 2014; Nahata, 2014) is not common.

What is more common is the use of multiple dimensions and measures to codify a firm as being successful. In 52 articles reviewed by Murphy (1996) only 19% used one measure of success and 41% examined only two dimensions. Furthermore, the dimensions typically used are not events but actual measures of efficiency, growth, profit, size, etc. (Murphy, 1996).

A number of researchers in the area of entrepreneurship have moved from growth as a measure of success towards identification of exits. Kraussel (2014) concluded that success could be determined when a VC exited an investment before ten years from the anniversary

of the investment through IPO or M&A. Nahata (2014) coded VC investments as successful if VCs exit from them via either IPOs or acquisitions.

There is a problem of coding a company as successful merely because there was an exit through M&A. Companies are sold for a number of reasons and M&A activity might have resulted from the sale due to market potential, the customer base, the product or even just the team. It is entirely possible shareholders did not see a return of their capital in some cases. Thus coding a company as successful just because it generates an exit shows a lack of understanding of the realities of the exit process.

As this thesis is examining the success of venture capital backed companies, it is important to realize that due to the nature of venture capital, it is necessary to have an exit at some point of time for the venture capitalist and thus the firm to be successful. The structure of funds themselves are built around liquidity for investors so a firm which does not exit cannot be seen as successful. A firm may only exit in three ways, through dissolution, sale or an IPO. Since a dissolution is by definition, not a successful exit, the only two potential successful exits are through M&A and IPO.

Given that firms can only exit through M&A or IPO, one cannot, in the case of venture backed companies determine success has been achieved using any other measures such as fund raising, employment, growth, and profitability. What matters is a positive exit through M&A or IPO. However, it is useful to determine whether they are both valid exits for the determination of success. To bring clarity regarding the codification of success based upon an M&A transaction, this thesis sought to examine data to determine whether either or both is valid.

Speigel (2016), in attempting to equate the receipt of venture capital funding with success, has confused success with performance as the references made do not justify equating success with performance. Burton et al. (2002) were not attempting to examine success, only what factors are likely to result in a firm obtaining financing. Davila et al (2003) do not equate raising a round with success, only with growth and in fact is measuring performance in a totally acceptable manner. Baum and Silverman (2004) similarly are measuring performance.

Given the needs of venture capitalists for exits from their investment at a profit, it is counterintuitive to think that raising a round of financing, no matter what round it is can be seen as success for a venture capitalist. Just because money has been put into a company shouldn't mean good performance has resulted. It is worthwhile however to examine whether receipt of venture capital can even be used as a codifier of performance.

6.2.2 Discussion Regarding Entrepreneur's Satisfaction Codifying Success

Success has also been seen through the lens of the entrepreneur and his or her level of satisfaction. Looking at the nine satisfaction indicators determined by Fisher et al (2014), one can see they are very difficult to measure almost all of them being subjective in nature. If one is to believe the researchers who put forth the premise that non-financial metrics or unmeasurable financial ones are effective ways to judge success then one runs into a bit of a problem. If personal satisfaction with growth, profitability, customer response, market position and a myriad of other factors is allowed to be the way success is measured then it follows logically and it is implied that everyone can become successful. All they have to do is lower their expectations for whatever metric one wants to use until such a time as they manage to exceed this metric and they are suddenly successful. Even if non-financial metrics are included along with financial ones, a situation will be created where all entrepreneurs, as long as they continue to run viable companies are seen as successful. It is equally possible to lower expectations for financial metrics and declare that success has been reached. Perhaps lowering expectations is the reason why mere business existence is seen as a metric for success.

One can take this sort of conclusion to its inevitable end, there can be no research on success except one which leads to lowering expectations so satisfaction is achieved. As well there can be no prescription for success other than one of lowering expectations. Effectively what will have been created is a Nirvana of Buddhist entrepreneurship where living in the moment and expecting little is the true recipe for success. And it follows that a researcher will be unable to produce any theory around the concept of success. Surely, it should be possible to do better and following the exhortations of other researchers, develop a more rigorous,

measurable definition of success, one used to develop a prescription for success and around which a set of theories can be built.

Because of measurement problems, a further level of differentiation is needed. It is fairly easy to define performance. For measuring performance, one can use all of the various financial measures which have been promulgated. Performance can be measured through:

- revenue,
- growth,
- profitability,
- profit growth,
- return on assets,
- return on investment,
- employment growth.

In fact, take your pick, any or all of those financial measures will be effective for measuring performance.

Personal satisfaction for the entrepreneur can be measured as well and it results in a separate category from performance. Personal satisfaction could include:

- fulfillment
- degree of creativity
- independence
- work/life balance.

By separating measurement of performance from measurement of satisfaction and separating these as well from measurement of success, a degree of rigor into research in the field of entrepreneurship might be introduced.

6.2.3 Discussion Regarding Other Performance Metrics Codifying Success

Once researchers begin to use performance measures to evaluate success, they are entirely inconsistent. Murphy's (1996) review of the literature from 1987 to 1993 shows 69 different

measure of performance. There are significant problems between studies as they are difficult to compare and inconsistent (Cooper et al, 1994). The inconsistency has been attributed to a wide variation in samples in terms of venture age, industry sector and business potential and prescriptions for success cannot be generalized. The inconsistency translates into difficulties in predicting or operationalizing success because of the different ways it is measured (Cooper et al, 1994).

Perhaps much of the difficulty is that success to an external stakeholder is much simpler to determine where such is not the case for the entrepreneur. By looking at success from a stakeholder perspective, one can rationalize measures to very few which really matter. Certainly, from tests performed, it is apparent that growth is one of the factors most important for venture capital stakeholders.

6.2.4 Discussion Regarding Profitability as a Success Metric

Davidsson's research (Davidsson, 2009) was done using two longitudinal data sets of small- and medium-sized enterprises (SMEs) from Sweden and Australia. As companies were likely founder owned companies, the findings are not likely applicable to venture backed companies.

The contradiction between growth and profit was furthered (Clarysse et al, 2011) through the identification of the contradiction between success as growth or profits and it further identified the necessity of driving growth by delaying profits to earn higher valuation. The Clarysse paper recognizes that: 'Although there is emerging recognition that new ventures may pursue different growth paths, how and why they achieve different growth paths has remained something of a theoretical black box."(Clarysse et al, 2011:153).

The contradiction between profit and growth was extended to public companies (Cho 2005) whose hypothesis was that "A firm's growth has a direct relationship with market value and an indirect relationship with market value through profitability." (p. 559).

In the general debate about success, some feel growth is not the only factor in performance but profitability must be considered as well. Research into Inc 500 companies showed (Markman and Gartner, 2002), that high growth rates in different cohorts do not match the profitability of the companies and as a result, growth has been overemphasized as an indicator or performance.

6.2.5 Discussion Regarding Productivity as a Success Metric

Certain research has identified the ratio of earnings per employee as one indicator of success (Krejci, 2015). As has been seen, there are few earnings to speak of in venture backed technology companies but another proxy for earnings would be revenue per employee. Revenue per employee is an excellent performance metric for measuring firm productivity but the question remains, would it make a good success metric.

6.2.6 Different Measures of Growth

In addition, some blame for the problem rests in the use of different measures for growth. As a result of usage of different measures of growth, studies lack comparability (Delmar 1997). Various researchers have used the number of employees, revenues, profits, assets. One problem with the different approaches is that items are not necessarily correlated with each other nor can there necessarily be co-linearity. Many researchers have chosen to measure growth in number of employees because this measure is most comparable between studies and does not change as rapidly as sales or valuation (Stam,, & Wennberg, 2009). However, whatever measure is used, it should in some way bear a relationship to financial success (Cassar, 2007) and employment growth does not necessarily tie into financial success.

6.2.7 What is a Good Growth rate?

If it is taken for given that sales growth is at least one valuable measure of success, then what the academic literature is lacking though is a measurement of what growth is required for success. Is growth of something at 1% a year satisfactory to code some venture as successful? Or is growth of 20% or even 100% a marker of success? Without a specific hurdle rate for the measurement of success, it is difficult to identify and perform research on what factors lead to success.

And then, even if a growth rate is mentioned which often it is not, there is no agreement as to what a good growth rate is. Stam et al (2011) define ambitious entrepreneurship as entrepreneurs expecting to grow their firms "considerably" although what considerably actually means is not defined. In one study actually defining a growth rate, there was an attempt to identify "superstar firms" and they were seen as the top 10% in terms of growth rate. The average growth rate of the firms was 250% (Stam & Wennberg, 2009).

The Global Entrepreneurship Monitor (GEM) defines high growth, when asking about job expectations, as a nascent entrepreneur who expects to have 20 employees (not including owners and contractors) working only for the business within 5 years (GEM 2019). The GEM study also demonstrates (p49) that less than 5% of employers expect to add 6 or more employees in the next five years. Hessels et al (2008) and Bosma & Schutjiens (2009) mirror this definition in concluding that medium growth rate is 6 or more employees and the high growth rate is 20 or more jobs.

Industry Canada and the US Bureau of Labor Statistics define high-growth firms as follows:

- a firm with fewer than 10 employees and growth of 8 or more employees over a three-year period; or
- a firm with 10 or more employees and growth at an average annualized rate of more than 20% over a three-year period.

The OECD considers a scale-up (company) is a company which has had an average annualized growth rate of at least 20% in the past 3 years with at least 10 employees in the beginning of the period of measurement (OECD 2007).

A report for the US Small Business Administration (Tracy, 2011) defined high impact companies as ones which had sales double over a 4-year period and a change of "an employment growth quantifier (product of its absolute and percentage employment change) of at least two." (p. 20)

But in all of the discussions about high-growth versus low-growth firms, there has been no actual examination through research of what actual growth rates are, so as to be able to relate the choice of growth rates to the rates actually experienced by firms.

6.2.8 Does the use of Growth Rates make Sense?

Using employee growth rates as a codifier of success, on the surface, seems to be another of those excellent performance metrics which doesn't make sense for codifying success. After all, a company may use substantial amounts of cash to hire lots of employees, burn through their capital and never create revenue growth or value for shareholders. The dot com bust of 2000 comes to mind when looking for examples of this phenomenon. During the 2000s there were countless companies which raised substantial amounts of money, hired many employees, never produced material amounts of revenue and eventually went out of business.

- Pets.com was founded in 1998 and had 320 employees by the time they started to wind down operations in November 2000. They had raised significant amounts of money, gone public but was eventually liquidated. (Wikipedia – Pets.com)
- Webvan was founded in 1996, raised 396 million from venture capitalists and raised a further $375 million in their IPO. At their peak they had 3,500 employees but had to declare bankruptcy in June 2001. (Wikipedia – Webvan)
- eToys was founded in 1997, went public in 1999 raising $166 million but by 2001 they had to lay off 700 of their 1,000 employees. (Wikipedia – eToys)

Many other companies just like them have experienced similar trajectories. In the year 2000, if a researcher had included these particular companies in a study, the researcher would have had to declare that these companies were among the most successful entrepreneurial ventures ever created. If the venture capitalists who had invested had exited their investments when the firms went public then they would be seen, for those investors, as having been successful but if the number of employees were reviewed in 2002, the companies would have to be recorded as failures as there were no employees left. Thus, success is not codified based on the number of employees but on the return for investors. To exhibit this

phenomenon more fully, it is possible to examine the return rates for investors over a wider class of investments.

6.2.9 But what type of industry?

A second differentiation worthy of segmentation is the industry studied. Companies with different startup requirements will experience different growth rates by virtue of the requirements for starting up. For instance, a manufacturing business will require construction of a plant before recording revenue. A pharmaceutical company will require drug approval, a medical device will require design and manufacturing where a software company requires less upfront development based on changes to software methodologies. It would be foolish to attempt to compare the growth profiles for each of company type. Just in the way some researchers have chosen to develop guidelines to help researchers select appropriate techniques for measuring growth (Weinzimmer, 1998), this thesis has focussed on the software industry for purposes of analysis. Venture backed software companies have been selected as the focus of research, not to develop generalized theories of growth but highly targeted theories of growth.

6.2.10 Different Populations

In particular, the use of samples from different populations has exacerbated the problem. Certainly, attempting to compare a study of family owned businesses in Africa to a group of venture-backed high technology companies in Silicon Valley would be like comparing apples and oranges as far as comparability would go (Shepherd, D. & Wiklund, J.,2009).

In examining entrepreneurial ambitions, Hermans et al (2015) clearly recognizes the subject of entrepreneurship “covers a very heterogeneous category of individuals and actions, ranging from lifestyle entrepreneurs in personal services such as hairdressing to the highly educated entrepreneur in biotechnology.”(p128).

6.2.11 Results versus Ambitions

Due to the problems associated with measuring growth, attempts have been made to measure entrepreneurial ambitions. Numerous studies have focussed on ambitions, each

choosing their own labels and applying their own measures (Verheul, & Van Mil, 2011). A number of studies have demonstrated that growth intentions are important predictors of firm growth (Davidsson, Delmar, & Wiklund, 2006; Stam & Wennberg, 2009). In studying ambitious entrepreneurs though, there is no general agreement as to a definition of the term. Hermans et al (2015) have defined an ambitious entrepreneur as "someone who engages in the entrepreneurial process with the aim to create as much value as possible." (p. 128). Such person "identifies and exploits opportunities to create new products, services, processes, and organizations with high aspirations to achieve entrepreneurial success, that is, to maximize value creation (beyond self-sufficiency)."(p. 129).

6.2.12 Can This Knowledge be Generalized?

Why after all would one want to generalize? Why is a general theory of value to a particular subset of entrepreneurs? Wouldn't it be better to develop a very defined theory relating specifically to a set of entrepreneurs, thereby increasing the accuracy and relevancy of the research?

It may not be possible to generalize knowledge about growth. The growth profile of any firm will be substantially influenced by the amount of capital available for growth. And the amount of capital will depend upon the sources of capital. Essentially then, who an entrepreneur chooses as stakeholder will influence growth rates. It would be entirely more reasonable to attempt not to develop a generalized theory of growth but to develop one oriented around a specific group of companies. Thus, one could develop a theory of growth for venture capital backed companies, one for angel backed companies and others for family businesses or social businesses. In this way, there should be less differentiation between results and some cohesiveness could be returned to the discipline of growth measurement. For the purpose of furthering growth measurement analysis, this thesis looks only at venture capital backed companies.

6.3 The Impact of Stakeholders on the Lifecycle of a Firm

Not only has the lack of a focus on stakeholders impoverished the research into success but it has also impacted research into the lifecycle of a firm. The lack of connection of the lifecycle

of a firm with that of the lifecycle of venture capital investments is problematic. Certainly, research into risk minimization (Grenadier & Malenko, 2011; Li, 2008; Tian, 2011) by venture capitalists crosses into an examination of the lifecycle of a firm as it pre-supposes the existence of stages through which a firm goes as it matures. In companies backed by venture capitalists, stages even have names and are tracked and discussed ad nauseum in the industry. Venture capital investments are categorized in the industry as being at stages including Pre-Seed, Seed, Series A, Series B etc .all the way through series G and potentially beyond (Crunchbase). Each stage of investment recognizes a stage in the growth of a firm and progression from one stage to another is external validation of success at the prior stage as it triggers a new round of investment. The final stage of venture capital involvement occurs when a firm exits through IPO or M&A or goes out of business.

One such categorization is referred to as the Marmer Stages (Marmer, M., Herrmann, B. L., Dogrultan, E., Berman, R., Eesley, C., & Blank, S. (2011). Loosely based on the stages proposed by Stephen Blank (2020) as a firm progresses through the stages of development as follows:

1. Discovery – Finding an opportunity
2. Validation – Testing the value proposition on the market
3. Efficiency – Perfecting the business model
4. Scale – Rapid Growth

Each stage is associated with a separate round of financing and firms successful at a stage are able to raise financing to be able to proceed to the next stage. A further examination of the stages and research into the measurement of success at each stage would enable further research to be done to provide guidance regarding factors which contribute to success at each stage. These factors may even relate to the general stages of development in the life cycle of a firm.

The lack of focus on the specifics of the life cycle of a venture capital financed firm is another example of the lack of differentiation between stakeholder types in research. In an attempt to generalize models where none might realistically exist, researchers have ignored the specifics of any one type of firm and lost an opportunity to benefit those firms directly. If the research is done, we might find an entirely new set of stages of development between say a

family enterprise, a venture capital financed firm, and a solo entrepreneur. Each of the stages which result from such an analysis may give rise to different measurements of success and different prescriptions for it.

7 Developing New Performance and Success Metrics

In addition to using a stakeholder perspective, new metrics are needed to measure performance so that research can be done on private firms and from them one can develop new theories about success. The final objective of this thesis is to develop and evaluate such new performance metrics. Three new metrics will be introduced and tested to determine whether they are indicators of performance or success.

- Financial Velocity as a Performance Metric
- Financial Velocity as a Success Metric
- Capital Efficiency as a Success Metric
- Growth Efficiency as a Success Metric

7.1 Introducing Financial Velocity as a Metric

Given the difficulty of obtaining data on revenue and valuations of companies to be able to determine whether or not a company is successful, a new measure is proposed for the evaluation of growth of early stage private venture capital backed companies. This measure is called Financial Velocity. Financial velocity was first used as a method of developing the Narwhal List, a list of the top performing Canadian technology companies (Plant, 2017). The concept of financial velocity enables researchers and companies to think easily and quickly about growth. Financial velocity measures the speed at which a company acquires and consumes capital to fuel its growth. It is defined simply as the amount of capital a company has raised divided by the number of years it has been in existence:

financial velocity = capital raised / years in existence

Velocity is measured over time and is expressed in millions of US dollars per year. It provides a simple and elegant tool to enable researchers, entrepreneurs, and investors to gauge the

financial attractiveness of young and capital-intensive firms. There are three situations to be tested:

- The use of financial velocity as a performance metric in private firm valuation
- The use of financial velocity on public firm valuations
- The use of financial velocity as a proxy for revenue velocity

7.1.1 Financial Velocity as a Performance Metric and Private Firm Valuation

The first test of financial velocity will be for its usage as a performance metric related to the valuation of private firms.

7.1.1.1 Hypothesis - H12

Financial Velocity and Private Firm Valuation: there is a positive relationship between financial velocity as measured by the capital raised divided by the number of years a firm has existed for venture capital backed software companies and the valuation of a private firm.

7.1.1.2 Methodology - H12

The test used looked at the results for 146 US based Unicorns in the CB Insights database as at December 31, 2018 for which financial velocity could be determined (Exhibit 58). To determine whether valuation of unicorns is related to financial velocity, the coefficient of correlation between the two was determined through the use of the following formula:

$$r = \frac{\frac{1}{n-1}\Sigma\left(X_{1i}-\bar{X}_1\right)\left(X_{2i}-\bar{X}_2\right)}{s_{x_1}s_{x_2}}$$

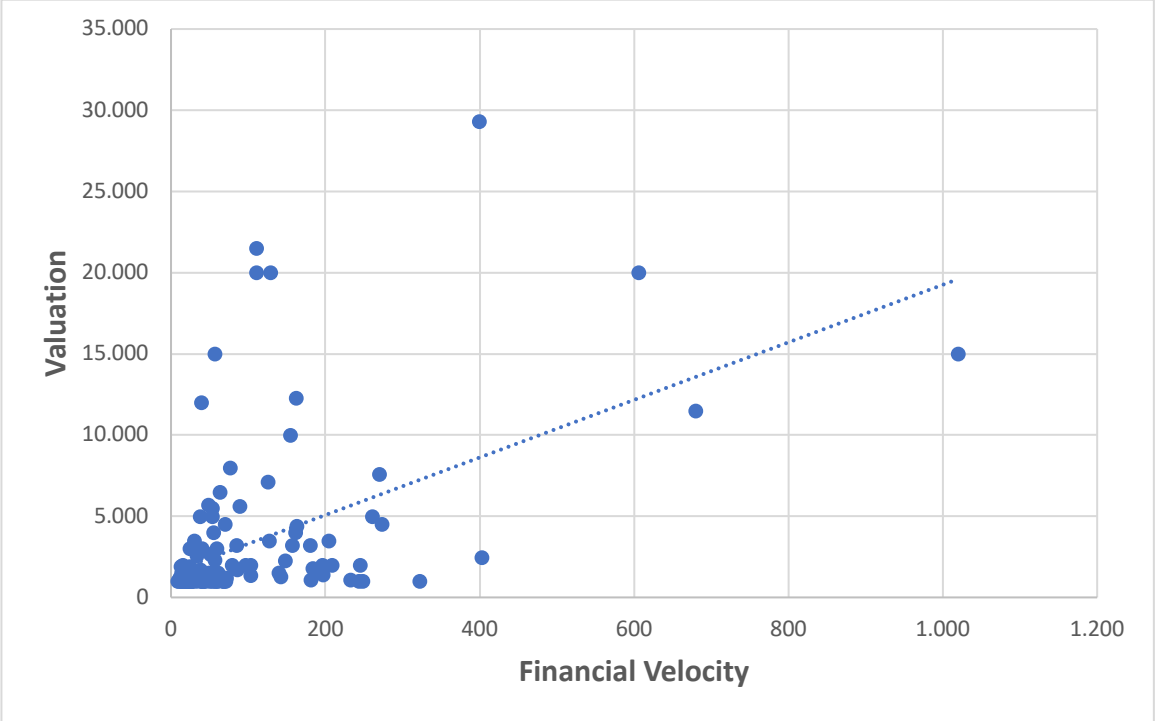
7.1.1.3 Results - H12

Exhibit 58 shows the relationship between financial velocity and valuation. There is a correlation of 0.51 between these two factors. To determine the effect that large valuations may have on the correlations, those 11 companies with a valuation of greater than $10 billion were also removed. The resulting correlation between financial velocity and valuation for private companies is 0.31. Albeit less of a correlation, there is still a moderate correlation between the factors and one should conclude there is a moderately strong positive

relationship between financial velocity and valuation for private venture capital backed software companies.

Exhibit 58 – Financial Velocity of US Based Unicorns

Source: CB Insights



7.1.1.4 Conclusion - H12

On the basis of a correlation of 0.31, the hypothesis that there is a positive relationship between financial velocity as measured by the capital raised divided by the number of years a firm has existed for venture capital backed software companies and the valuation of a private firm has been proven.

7.1.2 Financial Velocity and Pre-IPO Valuation

One must now turn to test the validity of a similar hypothesis for firms as they go public.

7.1.2.1 Hypothesis - H13

Financial velocity and Pre-IPO Valuation: there is a positive relationship between financial velocity as measured by the capital raised divided by the number of years a firm has existed for venture capital backed software companies and the valuation of a firm going public.

7.1.2.2 Methodology - H13

To understand the relationship between financial velocity and the valuation of firms as they go public, the results of 58 companies which went public from 2013 to 2018 in the software sector in the US were examined. The businesses are listed in Exhibit 17 along with the year they were founded and the year they went public. To determine whether valuation of public companies is related to financial velocity, the coefficient of correlation between the two was determined through the use of the following formula:

$$r = \frac{\frac{1}{n-1}\Sigma\left(X_{1i}-\bar{X}_1\right)\left(X_{2i}-\bar{X}_2\right)}{s_{x_1}s_{x_2}}$$

7.1.2.3 Results - H13

Collecting data on companies as they go public enables a check on their financial velocity when they were private (because one now has access to revenue numbers for the two or three years before their public offering as disclosure of financial data is required as part of an IPO). When financial data were analyzed for the firms in the study, a dramatic increase in financial velocities for businesses with an IPO in 2018 (Exhibit 59) was noticed.

Exhibit 59 - Financial Velocity of Firms Going Public

Source: CB Insights

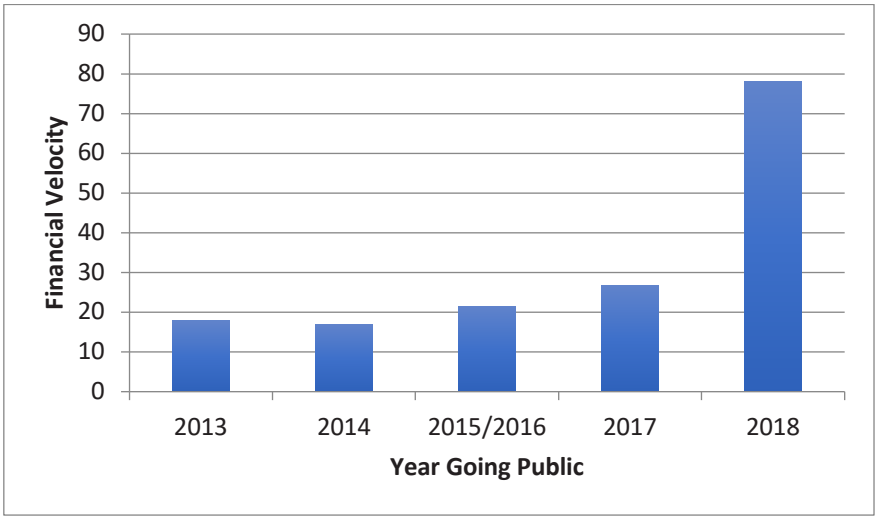
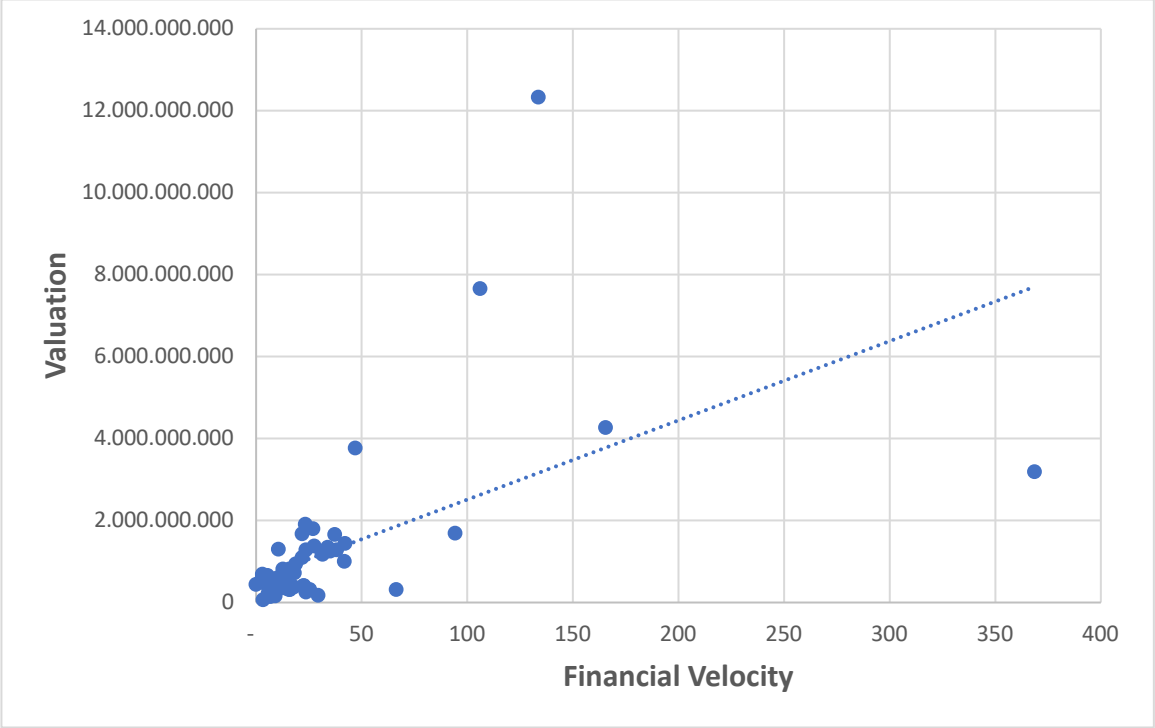


Exhibit 59 shows a fundamental change in the practice of financing companies. While raising $160 million to $200 million over eight to ten years and driving revenue of $75 million to go public was once sufficient, firms now raise $730 million (on average) to drive $330 million of revenue in under 13 years. Firms have become less capitally efficient in recent years meaning their ratio of capital to revenue has increased. Financial velocity of firms going public used to be typically $20 million per year, but financial velocity has now increased to almost $80 million per year.

Finally, the correlation between financial velocity and valuation was measured. Exhibit 60 shows the relationship between the two factors. Overall there is a correlation of 0.55 between financial velocity and pre-IPO value of a firm.

Exhibit 60 - The Relationship Between Financial Velocity and Pre-IPO Valuation

Source: Edgar



Based upon the close correlation between these two factors it has been concluded that Financial Velocity serves as a good proxy for the valuation of a private venture capital backed technology company as it is going public.

7.1.2.4 Conclusion - H13

With a correlation of 0.55, the hypothesis that there is a positive relationship between financial velocity as measured by the capital raised divided by the number of years a firm has existed for venture capital backed software companies and the valuation of a private firm as it is going public has been proven.

7.1.3 Financial Velocity and Revenue Velocity

As a further test of financial velocity as a performance metric, one needs to examine whether financial velocity is a potential substitute for revenue velocity. Essentially, is financial velocity also indicative of a company's revenue growth?

7.1.3.1 Hypothesis - H14

There is a positive relationship between financial velocity as measured by the capital raised divided by the number of years a firm has existed for venture capital backed software companies and the revenue velocity of them.

7.1.3.2 Methodology - H14

To understand the relationship between revenue velocity and financial velocity, the results of 58 companies which went public from 2013 to 2018 in the software sector in the US were examined. The businesses are listed in Exhibit 17 along with the year they were founded and the year they went public. For testing H14, "revenue velocity" defined as the revenue from the company's most recent year divided by years in existence, was computed. To determine whether revenue velocity is related to financial velocity, the coefficient of correlation between the two was determined through the use of the following formula:

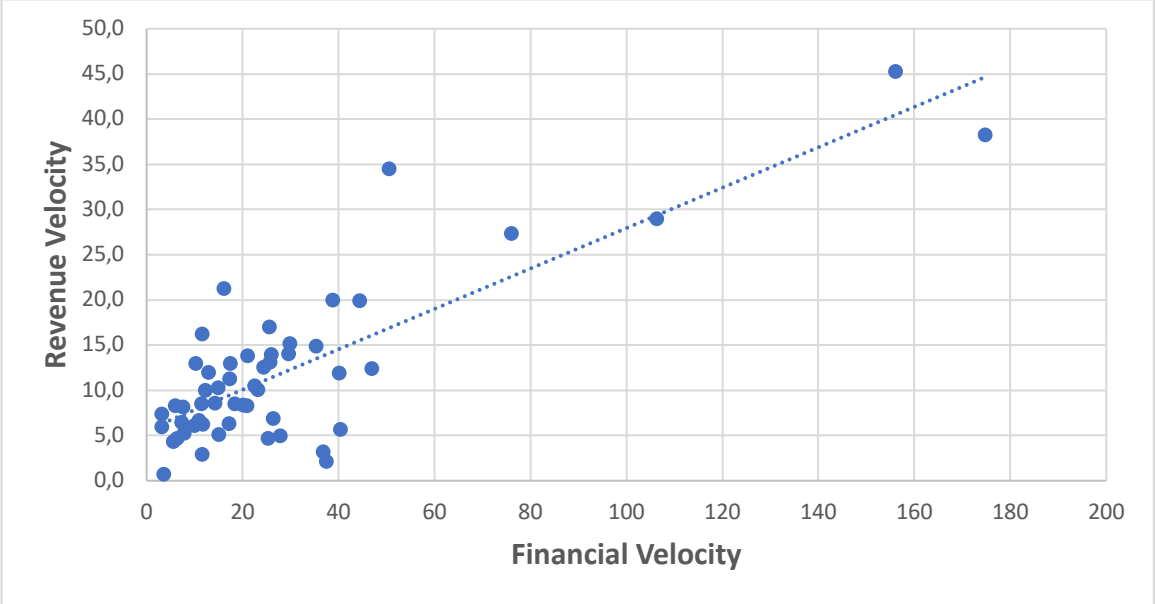
$$r = \frac{\frac{1}{n-1}\Sigma\left(X_{1i}-\bar{X}_1\right)\left(X_{2i}-\bar{X}_2\right)}{s_{x_1}s_{x_2}}$$

7.1.3.3 Results - H14

The analysis resulted in a correlation of 0.82 between financial velocity and revenue velocity, suggesting that financial velocity is a good proxy for the relative growth and size of private companies in the software sector (Exhibit 61).

Exhibit 61 - The Relationship Between Financial Velocity and Revenue Velocity

Source: Edgar



7.1.3.4 Conclusion – H14

With a correlation of 0.82, the hypothesis that there is a positive relationship between financial velocity as measured by the capital raised divided by the number of years a firm has existed for venture capital backed software companies and the revenue velocity of a firm as it is going public has been proven.

7.2 Evaluating Financial Velocity as a Success Metric

The analysis contained in Hypotheses 12 to 14 has shown that financial velocity of a venture capital backed software company is an effective performance metric as there is a reasonably high degree of relationship between it and:

- The valuation of private firms
- The valuation of public firms
- Revenue Velocity

Financial velocity is thus a new potential metric to be used in evaluating performance of private venture capital backed firms. It opens up a huge new source of data as measurement of financial velocity is based on publicly available data with thousands of new companies recording data on an annual basis. The question must remain though, is financial velocity an effective measurement of success. As has been shown, not all measurements of performance are effective measures of success. This section of the thesis will test whether financial velocity is an effective measure of **success** for:

1. Valuation of private firms
2. The valuation of firms as they go public

7.2.1 Financial Velocity as a Success Metric in the Valuation of Private Firms

To test the efficacy of financial velocity as a success metric one must first return to the data relating to firms which are private to determine any relationship with return to venture capitalists. While these firms have not experienced a liquidation event, it is not possible to measure the return earned by venture capitalists. However, with data on the valuation of them one could determine the hypothetical return at any point in time. The hypothetical return would be measured by the Valuation to Capital Multiple (VCM). VCM is the ratio of the firm's valuation to the amount of capital invested. Tests on Financial Velocity will involve two hypotheses (H15 and H16).

7.2.1.1 Hypothesis - H15

There is a positive relationship between financial velocity as measured by the capital raised divided by the number of years a firm has existed for venture capital backed software companies and the VCM .

7.2.1.2 Methodology - H15

The test employed looked at the results for 146 US based Unicorns in the CB Insights database as at December 31, 2018 for which financial velocity could be determined. An obvious outlier, Uber, was removed from the data so its $72 billion-dollar valuation would not distort results.

To determine whether the VCM is related to financial velocity, the coefficient of correlation between the two was determined through the use of the following formula:

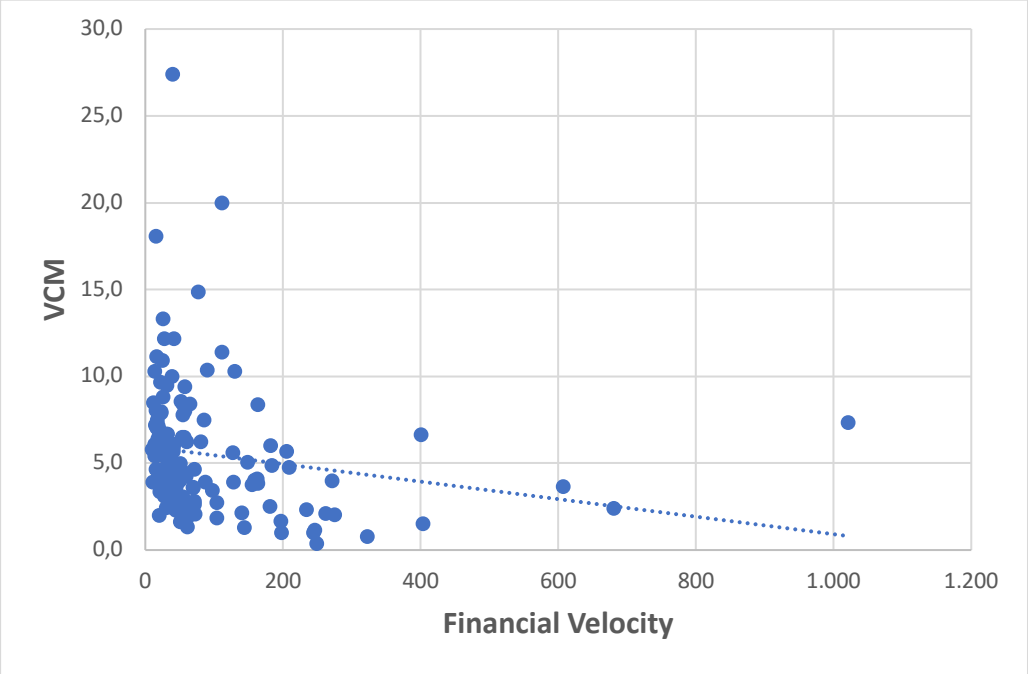
$$r = \frac{\frac{1}{n-1}\Sigma\left(X_{1i}-\bar{X}_1\right)\left(X_{2i}-\bar{X}_2\right)}{s_{x_1}s_{x_2}}$$

7.2.1.3 Results - H15

When the financial velocity of firms was compared with the VCM as shown in Exhibit 62, there was found to be a very slight negative relationship of -0.14. Removing statistical outliers did not materially change the determination arrived at.

Exhibit 62 - The Relationship Between Financial Velocity and VCM for Private Firms

Source: CB Insights



7.2.1.4 Conclusion - H15

With a correlation of -0.14, the hypothesis that there is a positive relationship between financial velocity for venture capital backed private companies and the VCM has not been proven.

7.2.2 Financial Velocity as a Success Metric in the Valuation of Public Firms

To further test the efficacy of financial velocity as a success metric one next must return to the data relating to firms as they go public to determine any relationship with return to venture capitalists. It is possible to calculate the rate of return earned by a venture capitalist on the date the firm went public as going public is a liquidation event which enables a valid calculation. The measurement will be the same as the one used to calculate the VCM and it will be referred to as such.

7.2.2.1 Hypothesis – H16

There is a positive relationship between financial velocity as measured by the capital raised divided by the number of years a firm has existed for venture capital backed software companies and the valuation to capital multiple (VCM) upon issuance of a public offering.

7.2.2.2 Methodology - H16

To understand the relationship between financial velocity and the VCM of firms as they go public, the results of 58 companies which went public from 2013 to 2018 in the software sector in the US were examined. The businesses are listed in Exhibit 17 along with the year they were founded and the year they went public. To determine whether the VCM is related to financial velocity, the coefficient of correlation between the two was determined through the use of the following formula:

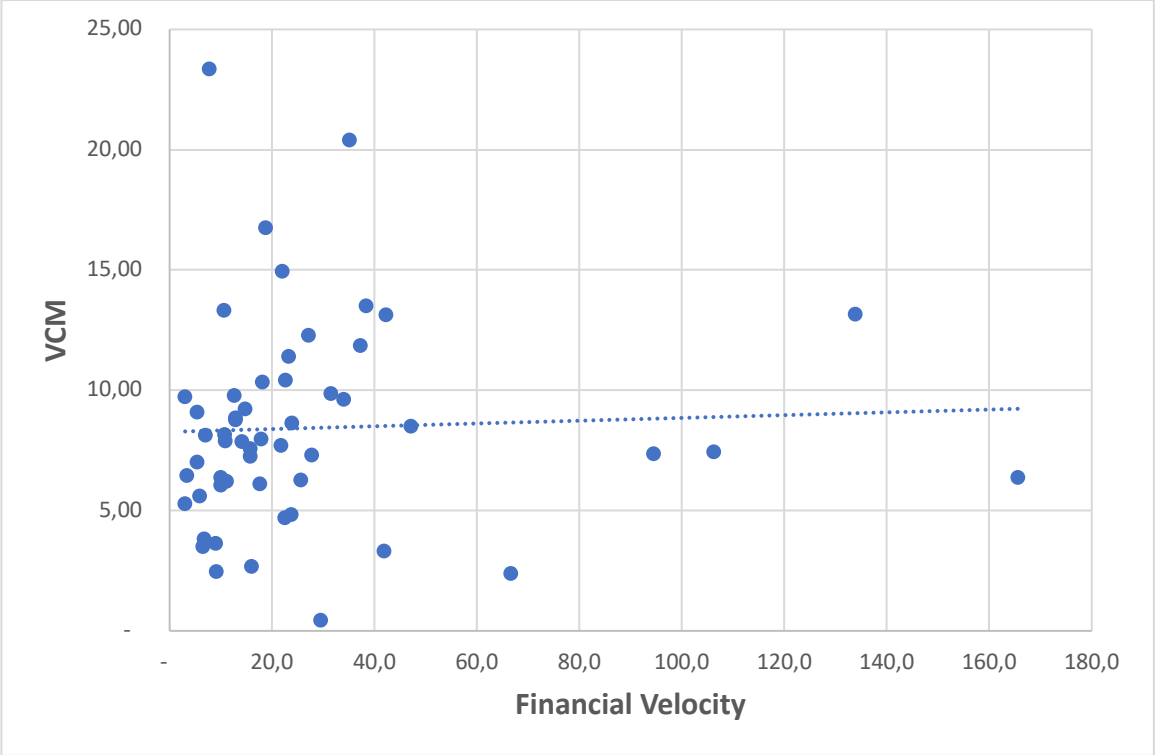
$$r = \frac{\frac{1}{n-1}\Sigma\left(X_{1i}-\bar{X}_1\right)\left(X_{2i}-\bar{X}_2\right)}{s_{x_1}s_{x_2}}$$

7.2.2.3 Results - H16

As the results of Exhibit 63 show, there is weak relationship between financial velocity and VCM. In fact, there is a correlation of only 0.04 between the two factors.

Exhibit 63 - The Relationship Between Financial Velocity and VCM for Private Firms as they IPO

Source: CB Insights



7.2.2.4 Conclusion - H16

Based on the low correlation of 0.04 these, the testing done has not proven the hypothesis that there is a positive relationship between financial velocity for venture capital backed companies as they go public and the VCM.

7.3 Introducing Capital Efficiency as a Success Metric

Capital efficiency is measured by the value of capital injected into a company and the revenue the company records. Theoretically, the less capital required to generate revenue for any rate of growth, the greater the return will be for venture capital investors.

7.3.1.1 Hypothesis - H17

Capital Efficiency: there is a positive relationship between capital efficiency as measured by the amount of capital invested to produce $1 of revenue for venture capital backed software

companies and return to venture capital investors as measured by the valuation to capital multiple (VCM).

7.3.1.2 Methodology- H17

To understand the relationship between capital efficiency and VCM, the results of 58 companies which went public from 2013 to 2018 in the software sector in the US was examined. These businesses are listed in Exhibit 17 along with the year they were founded and the year they went public. To determine whether the VCM is related to capital efficiency, the coefficient of correlation between the two was determined through the use of the following formula:

$$r = \frac{\frac{1}{n-1}\Sigma\left(X_{1i}-\bar{X}_1\right)\left(X_{2i}-\bar{X}_2\right)}{s_{x_1}s_{x_2}}$$

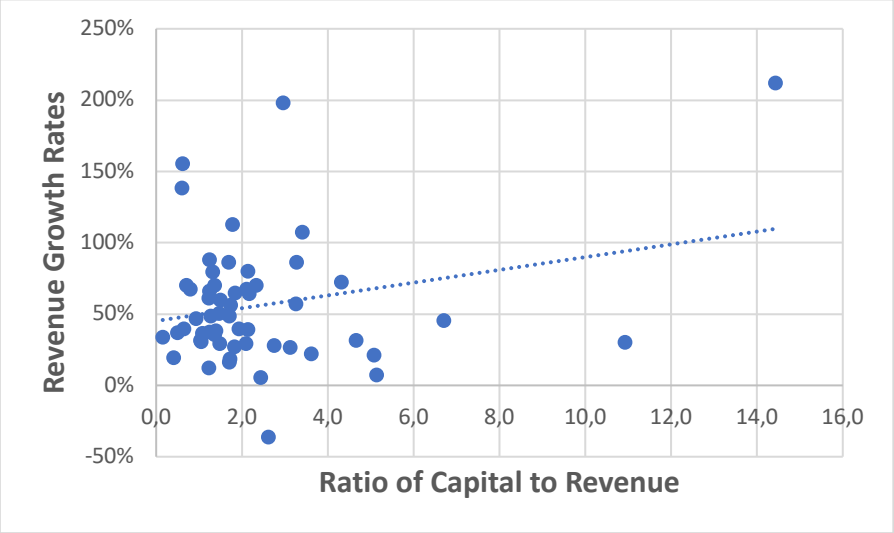
7.3.1.3 Results - H17

The average capital to revenue ratio of the 58 firms in the study was 2.39 (the median equals 1.7) and the range was from .2 to over 14. Only nine had a capital efficiency ratio below 1 and 13 had a ratio of greater than 3 times.

What was not surprising from the data was the relationship between efficiency and revenue growth. There was a moderate positive correlation of 0.25 between the two indicating that higher capital was moderately correlated with higher growth levels. The relationship between efficiency and revenue growth can be seen in the Exhibit 64:

Exhibit 64 - Efficiency and Revenue Growth

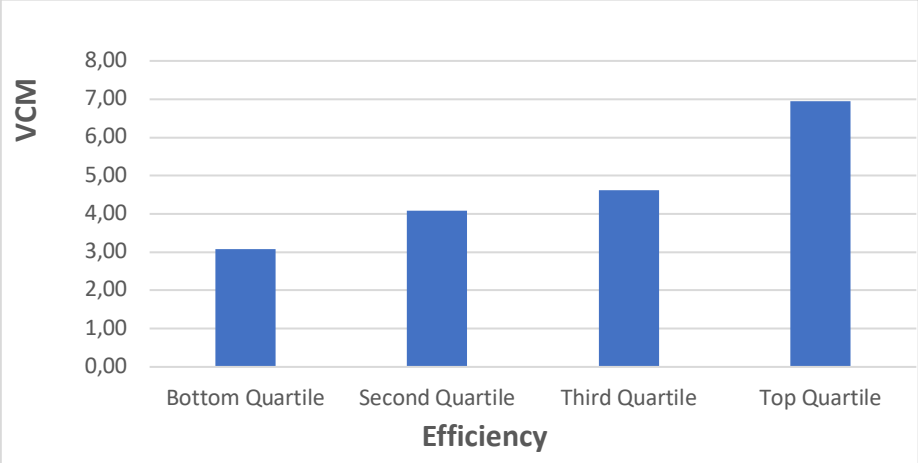
Source: Edgar



The Exhibit 65 shows the relationship between efficiency and VCM.

Exhibit 65 - The Relationship Between Efficiency and VCM

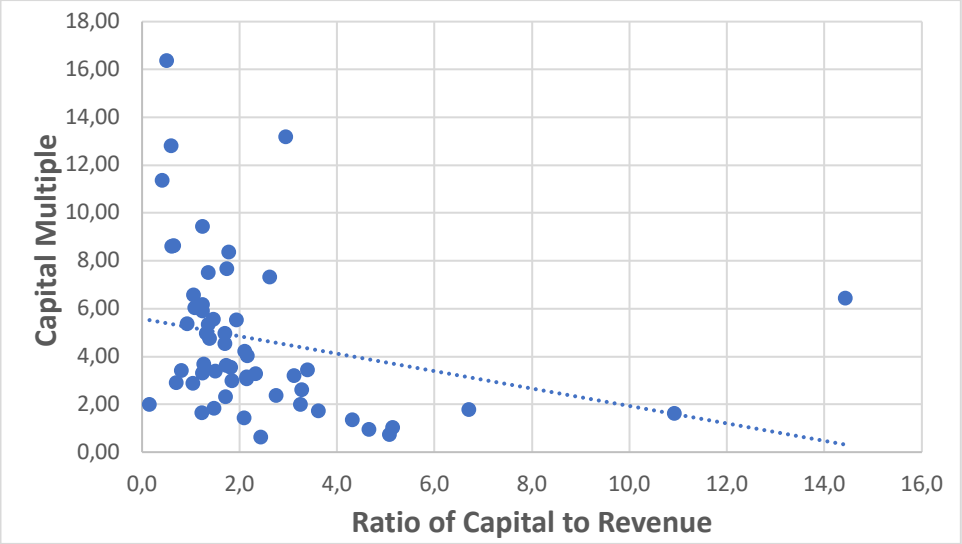
Source: Edgar



In looking at efficiency and return to venture capital shareholders there is a moderate negative correlation of -0.26 between the two factors (Exhibit 66):

Exhibit 66 - The Relationship Between Efficiency and Return

Source: Edgar



These data indicate that increasing efficiency (lower ratio) has a positive relationship to return to venture capital investors.

7.3.1.4 Conclusion - H17

Given the moderate negative correlation of -0.26, the hypothesis that there is **no** relationship between firm efficiency as measured by the ratio between capital and revenue and VCM for venture capital backed software companies has been disproven. However, the relationship is so small as to render it not valuable as a metric for either performance or success.

7.4 Introducing Growth Efficiency as a Success Metric

To modify the measurement of efficiency in order to take into account the countervailing forces of growth versus efficiency, a new metric entitled Growth Efficiency will be calculated. The Growth/Efficiency metric multiplies the firm's growth rate by its capital efficiency (ratio of capital to revenue.)

7.4.1.1 Hypothesis - H18

There is a positive relationship between growth efficiency and return to venture capital investors as measured by the valuation to capital multiple (VCM).

7.4.1.2 Methodology - H18

To understand the relationship between efficiency and return to venture capital investors, the results of 58 companies which went public from 2013 to 2018 in the software sector in the US was examined. These businesses are listed in Exhibit 17 along with the year they were founded and the year they went public. To determine whether the VCM is related to growth efficiency, the coefficient of correlation between the two was determined through the use of the following formula:

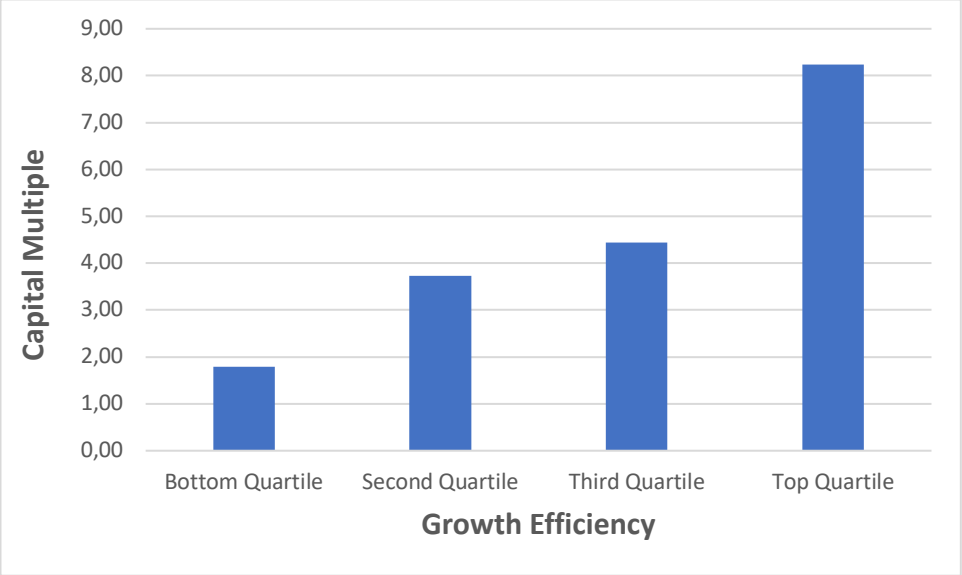
$$r = \frac{\frac{1}{n-1}\Sigma\left(X_{1i}-\bar{X}_1\right)\left(X_{2i}-\bar{X}_2\right)}{s_{x_1}s_{x_2}}$$

7.4.1.3 Results - H18

The 67 shows the VCM for each quartile of growth efficiency.

Exhibit 67 - Growth Efficiency Measured by Quartile

Source: Edgar

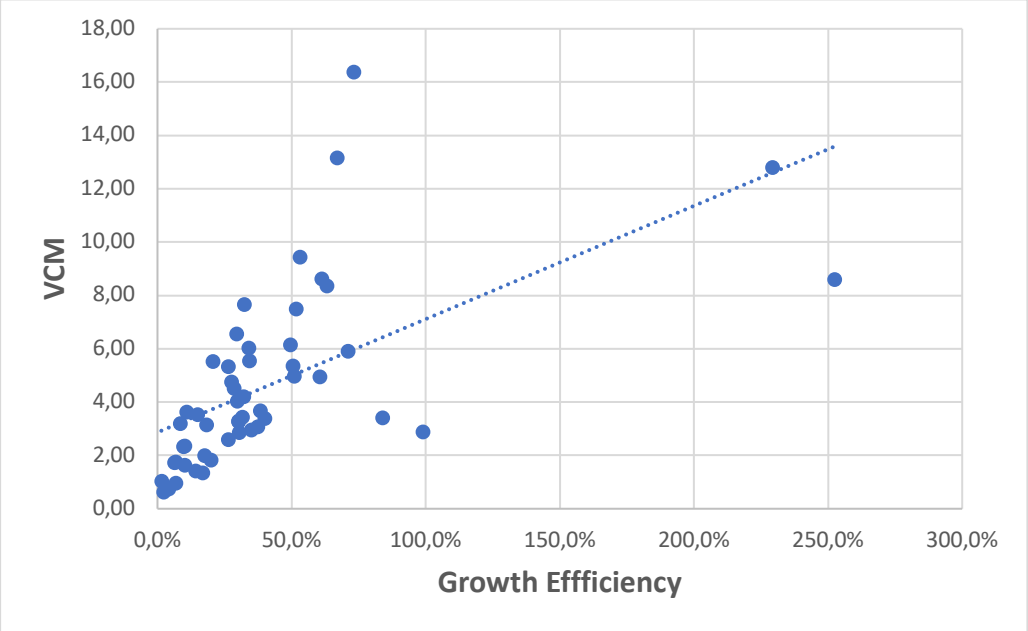


For the firms remaining in the sample, there was a negative relationship between return (VCM) and capital efficiency with a correlation of -0.49. There was also a strong positive relationship between VCM and growth rates with a correlation of .55. When combined to measure growth efficiency, there was a strong correlation of 0.60 (Exhibit 68)

This new Growth/Efficiency metric creates the first strong measurement of success which is not dependent on company size.

Exhibit 68 - Growth Efficiency

Source: Edgar



7.4.1.4 Conclusion - H18

Based on a strong correlation of 0.60, the hypothesis that there is a relationship between growth efficiency as measured by multiplying the firm's growth rate by its capital efficiency (ratio of capital to revenue) and VCM for venture capital backed software companies has been proven.

Limitations for Growth Efficiency as a metric lies in the (non) availability of data – it can only be used when someone has access to financial data from a company and when there is an exit event producing a valuation or some documentation of valuation. Given that access to financial data is problematic for researchers, a new metric which can be used to evaluate success in private companies, ones for which very little data is available, is needed.

8 New Metrics Discussion

In addition to using a stakeholder perspective, new metrics are needed to measure performance so it is easier to include private firms and develop new theories about success. Metrics introduced include:

- Financial Velocity
- Capital Efficiency
- Growth Efficiency

8.1 Discussing Financial Velocity as a Metric

Given the difficulty of obtaining data on revenue and valuations of companies to be able to determine whether or not a company is successful, it is proposed that a new measure for the evaluation of growth of early stage private venture capital backed companies, Financial Velocity, be used. The concept of financial velocity enables researchers and companies to think easily and quickly about growth.

If a company has a ready and willing large market, then its growth may be limited by the capital it has available to fuel growth. The amount of capital required increases with business growth so a company that is scaling requires more and more capital to sustain its growth. In many cases, larger companies can be more profitable than ones which are smaller ones and they can accumulate retained earnings, which provides their capital.

To obtain a high financial velocity a company must raise more and more money over time. A firm can have a high velocity in its first year if it raises a significant amount of capital. In each year after, it must raise more and more capital to maintain a high velocity.

If a business does not raise any more capital—or raises too little—in any following year, its velocity will decline. Financial velocity may be useful as well when comparing firms founded in different years and also in comparing different company profiles.

Firms can also raise capital but not be able to grow their revenue. A firm may show strong growth using financial velocity as a proxy metric, however if it does not manage to increase revenue, the business may not be able to raise additional capital. In the long run then, any issues with using financial velocity will resolve themselves naturally as such businesses decline in financial velocity.

Data on capital acquired and firm age is readily available in databases such as CB Insights, Pitchbook and Crunchbase. These databases all collect worldwide data. If the measure of Financial Velocity is effective, it can be introduced as a tool to deal with many of the measurement problems for success of VC backed firms when they are private and when data is not available on revenue growth and valuation.

As the ultimate objective of a firm is to maximize its valuation and achieving a high growth rate is the way to maximize it, then one needs to ascertain whether Financial Velocity is a good proxy for the measurement of growth. Essentially, is financial velocity a valid performance metric?

In hypotheses 12, 13, 13 14, where financial velocity was tested as a performance metric, there were results sufficient to show it represents a satisfactory performance metric. In terms of its relation to valuation, results show a correlation of .51 with the valuation of private firms and a correlation of .55 with firms as they go public. The strongest correlation was with revenue velocity wherein it was determined there was a correlation of 0.82.

Until the development of financial velocity as a metric, there was only one variable which could be used as a performance metric for private venture backed firms and this was the amount of capital raised. It in itself was a poor metric as it did not account for the age of the firm. A 10-year-old company which had raised $100 million would be seen as having the same performance as a 3-year-old company which had raised the same amount of capital. The closest other possible variable was the number of employees which is available on LinkedIn. LinkedIn connects professionals worldwide with each other and by listing the firms for which they work enables a researcher to measure current employment at a firm. As information is voluntarily provided, numbers are prone to underreporting and in some cases exaggeration.

The LinkedIn employment number has the same issue as the amount of capital raised as a firm with 100 employees which is ten years old would be seen as having the same performance as a three-year-old firm with the same number of employees.

The implication of the findings is that financial velocity can be seen as a satisfactory investigative tool to use in the evaluation of private venture capital backed software companies. Research can now differentiate levels of performance between many firms and investigations can be made into factors which lead to satisfactory performance by relating firm choices as to markets, the nature of founders, strategic choices and a myriad of other issues.

As has been seen with other performance metrics, just because a metric is useful in measuring performance, it is not always useful in measuring success. This thesis has shown there is no correlation between financial velocity and the valuation multiple for venture backed software companies or for software firms as they are going public. As a result, it is ineffective as a measurement of success.

8.2 Discussing Capital Efficiency as a Success Metric

Venture Capital based software firms are often encouraged to be capitally efficient thinking that the more efficient the firm is, the better the return will be for venture capitalists. At the same time, growth of a firm is driven by investments of capital and the greater the capital the greater the growth.

What was not surprising from the data was the relationship between capital efficiency and revenue growth as higher amounts of capital (lower capital efficiency) was moderately correlated with higher growth levels. The greater the amount of capital invested to produce a dollar of revenue, the greater are the losses which can be incurred to drive revenue growth. It would then logically follow that the greater the capital per revenue dollar or the lower the capital efficiency (higher capital to revenue ratio) the higher the return to venture capital investors.

However, this is not the case. It does not follow that the lower the capital efficiency (higher capital to revenue ratio) the higher the return and in a miracle of conflicting objectives there is a balancing effect between capital efficiency and growth rates. These data indicate that increasing efficiency (lower ratio) has a positive relationship to return to venture capital investors. The relationship between the two shows the choices which an entrepreneur needs to make between the two performance ratios in order to maximize returns. On the one hand an entrepreneur must drive revenue growth high and thus produce higher returns which requires considerable amounts of capital. On the other hand, the entrepreneur must be efficient in the use of capital in order to bring better returns. The tight balancing of ratios renders neither a particularly good indicator of success. While revenue growth is perhaps a better measure of success given its higher degree of correlation with returns to investors, it really should be modified by the capital deployed to produce growth.

8.3 Discussing Growth Efficiency as a Two-Dimensional Metric

In examining performance **events**, it was determined that there was no event indicative of success for venture capital stakeholders. In looking at performance **metrics**, it was determined that while profitability and productivity were good performance metrics, they did not make good success metrics. And while growth is a good codifier of success, it needs to be modified by size of company and set at higher levels than is currently used in the literature.

But as has been seen, growth isn't the only factor and in fact it needs to be moderated in some way by how efficiently it has been generated. Numerous researchers have used two dimensions of performance such as growth and profits to determine whether or not a firm has been successful (Davidsson, 2009). What has not been reflected in the attempts is to combine two countervailing forces into one metric reflecting the complexity of creating a successful firm. For instance, if profit and growth were two dimensions that both matter in terms of performance (although research presented here shows profit is unimportant) then a metric combining the two would be valuable. As has been seen here, greater profit leads to lower growth so a metric combining the two would reflect the countervailing nature of the two of them. Such a metric could multiply the rate of profit by the rate of growth thereby balancing the two factors.

Growth efficiency, as presented in this thesis, is just such a two-dimensional metric. It reflects the fact that growth leads to a greater revenue multiple but using too much capital will reduce stakeholder returns. This metric rewards companies for balancing the two forces and this fact is shown in the degree of correlation there is between growth efficiency and return to venture capital shareholders. It works in the absence of data on valuation and could be potentially very effective as a planning tool for firms to assess different strategic alternatives.

9 Conclusions

Investigations into topics for this thesis began with an attempt to uncover factors that led to the success of venture backed companies. Research into the topic of success stalled when it became apparent there was no universally accepted definition of success. Further research revealed that the entire topic of performance and success was fraught with sloppy research. Thus, an attempt has been made in this thesis to determine exactly what constitutes success.

9.1 Who gets to determine whether a firm has been successful?

The first issue to address is who. Who gets to determine whether a firm is successful or not? Is it the entrepreneur or some other stakeholder? Using stakeholder theory and agency theory it has been determined that while performance and satisfaction can be judged internally by the firm and the entrepreneur, success is something that can only be judged by a stakeholder. In order to examine the topic of success, one type of stakeholder, a venture capital investor, has been used. To further simplify the analysis, research was done only on software companies in the United States, a group for which substantial amounts of data is available. While internal financial data on firms is not available until they undertake an IPO, there are a number of publicly available databases which record capital acquired and employee data and proxies for growth have been employed to make up for the lack of internal data.

9.2 What results are indicative of success for a venture capitalist?

Research into return rates for venture capital investments in the software industry determined that if the average company exit by a venture capitalist produces a multiple of 5

times the amount of invested capital, a venture capitalist will earn a 14.8% return, placing it just above the median return for all venture capital firms. On this basis an exit multiple of greater than 5 times should be seen as a success and anything below 5 times should be seen as not successful.

9.3 Are there events in the development of a firm indicative of success?

Numerous research papers use events in the development of a firm to determine whether or not a firm is successful. Research was conducted in order to determine whether any of the events produced results which corresponded with the five times exit hurdle rate discovered. The events proposed include:

Survival of the firm

While necessary, firm survival is not sufficient to conclude a firm has been successful as many firms survive but either they have not grown enough to earn a sufficient return or have used too much capital to fuel growth. Thus, survival is not an indicator of success for venture capital backed firms. While not an indicator of success, it is a necessary condition, just not sufficient. Firm survival is an area though, where it may be possible to conduct more research in case there are situations where there are factors which improve the potential for survival as a precursor to success.

Receipt of Venture Capital Funding

One can conclude from the research that raising an A round is not necessarily an indicator of 'good' performance. While this thesis focussed on venture capital stakeholders and thus obtaining an A round was a condition to be included in it, it is another condition which is necessary but not sufficient for success and an area in which it may be possible to conduct further research to correlate firm conditions with being able to obtain an A Round.

Exit through an M&A Transaction

Research has also indicated that a merger or acquisition is not necessarily indicative of success. But again, either an M&A event or an IPO is necessary but not sufficient.

Exit through an Initial Public Offering

In the final test of conditions indicating success, an IPO was found not to be a sufficient indicator. In all cases though, the IPO event resulted in liquidity for the shareholder and contributed to a positive return but many in insufficient amounts.

Examination of these four events show that events in the development or exit of a firm are not necessarily indicative of success by the firm and should not be used as codifiers of success. They are however, all necessary if not sufficient for success and worthy of investigation as necessary conditions for success on their own merits.

9.4 Are there performance metrics indicative of success?

While events may not be good indicators of success, a number of performance metrics have been proposed as measures. Research was conducted in order to determine whether any of the performance measures examined indicated results which corresponded with the five times exit hurdle rate discovered. Performance metrics proposed include:

Employee Growth

The research has shown there is no relationship between employee growth rate and the return earned by investors. While not an indicator of success, it may be useful as an indicator of performance and thus useful for other types of research. It also may be one of a number of ingredients contributing to success while not having a high degree of correlation.

Revenue Growth

This thesis has determined there is a moderately strong relationship between revenue growth and the return earned by venture capitalists. However, there is no one hurdle rate in terms of revenue growth which would codify a firm as being successful. Growth rates required for private US based software companies to be seen as successful are greatly in excess of 20% and in fact depends on the size they are when measured. Revenue growth can be a useful indicator though of performance even if it is not useful in research into success.

Profits

There appears to be an inverse relationship between profitability and revenue growth rates. The negative correlation shows larger losses on balance lead to larger growth rates. It should imply as well that the resultant larger growth rates should lead to larger returns of capital to venture capitalists although as previously seen, this does not prove out to be the case at the point of time a firm undertakes an IPO. From the research it can be concluded that profitability is not a requirement for going public, nor is it a requirement for success. It makes however, an excellent measure of performance.

Productivity

According to the data, increasing productivity as measured by revenue per employee has a small negative correlation to revenue growth and to return to venture capital investors thus invalidating it as a measure of success and perhaps even a good one of performance.

Overall, this thesis shows that indicators of performance are for the most part not good as indicators of success. The only one where there is a potential for indication of success is revenue growth and yet even then, the correlation between return to venture capitalists and revenue growth is only moderate.

9.5 Are there new metrics that can determine success?

Given that growth is an imperfect metric for success as high growth can come at a high cost in terms of capital required, thus reducing the return of a venture capitalist, an attempt has been made to develop new metrics for success as follows:

Financial Velocity

Financial velocity of a venture capital backed software company is an effective performance metric as there is a reasonably high degree of relationship between it and:

- Valuation of private firms
- The valuation of firms as they go public
- Revenue velocity of firms as they go public

Financial velocity is thus a new potential metric to be used in evaluating performance of private venture capital backed firms. It opens up a huge new source of data as measurement of financial velocity is based on publicly available data with thousands of new companies recording data on an annual basis. Based on the low correlation between financial velocity and return to venture capital investors, it remains a poor metric for success. It is however the only metric which can be used to measure performance of private software companies where financial data is unavailable.

Capital Efficiency

Research indicates that increasing efficiency (lower capital to revenue ratio) has a positive relationship to return to venture capital investors. However, lower amounts of capital reduce the growth rate of a firm. An entrepreneur must make a choice between the two performance ratios in order to maximize returns. While revenue growth is perhaps a better measure of success given its higher degree of correlation with returns to investors, it really should be modified by the capital deployed to produce growth as too much capital may boost growth but lower returns too much to make increased capital worthwhile.

Growth Efficiency

It has been determined that there is a relationship between growth efficiency as measured by multiplying the firm's growth rate by its capital efficiency (ratio of capital to revenue) and return of capital for venture capital backed software companies.

Growth efficiency can only be used when someone has access to financial data from a company and when there is an exit event which produces a valuation or some documentation of valuation. As access to financial data is problematic for researchers, this new metric can be used to evaluate success in private companies, ones for which very little data is available is needed. Conclusions regarding the applicability of growth efficiency led to the examination of financial velocity as a metric for the evaluation of private companies when financial data is not available.

10 Impact on Academic Research

Connecting this research to the general field of studies in entrepreneurship, one can see the manner in which it has contributed as well as the limitations and potential for future research.

10.1 Contributions of this thesis to the field of entrepreneurship research

This thesis has made a number of contributions to the field on entrepreneurship research which can be summarized as follows:

1. It has demonstrated how stakeholder theory can be used as a system for classification of entrepreneurship research into easily recognized, discrete buckets within which answers can be found for questions which have long remained unresolved.
2. It has shown that success must be judged, not by the entrepreneur or the firm but by the stakeholder, in this thesis being the venture capital investor.
3. It has calculated a hurdle rate in terms of results for venture capital investors above which success can be deemed to exist.
4. It has demonstrated how performance events do not equate to success in the stakeholder's eyes.

5. It has shown how performance metrics such as employee growth, profitability and productivity are not effective measures of success.
6. It has demonstrated how revenue growth can be a good metric of performance if differing rates are used based on the size of the firm and there is some potential to use revenue growth as a measure of success.
7. It has introduced new metrics which use publicly available data and thereby get around the problems associated with data availability for research.
8. These new metrics improve on the ability of users to understand how to measure success.
9. It has introduced a metric entitled financial velocity which can be used to measure performance when valuation and financial data for a firm are unavailable.
10. Capital efficiency is another metric which was introduced. It must be balanced with revenue growth to be useful.
11. It has introduced a new metric entitled growth efficiency which has a high degree of correlation of return to shareholders. It can be used when valuation data for a firm is unavailable but where financial data is available.
12. Ultimately, having a better understanding of the efficacy of particular metrics for measuring performance and success as well as new metrics, will add to the ability of firms and investors to make better decisions.

10.2 Limitations

This thesis presented a very narrow view of success as it picked a single industry in one country with a single type of investor. While the industry/investor/country combination is the largest of any potential combinations which could have been selected, whether the findings can be extended to other industry/investor/country combinations remains to be seen.

10.2.1 Software Industry

This thesis sought to examine the software industry only. The selection of the software industry aligns with Schumpeter's definition of entrepreneurship, as it is an industry in the process of creating new products, new markets, and new business models. Other aligned industries which would meet a similar definition were not examined. Industries such as

medical devices, pharmaceuticals, clean technologies and consumer hardware all bear the same characteristics of innovation and market disruption and have venture capitalists as backers. The extension of this thesis to those industries would be a valuable exercise.

10.2.2 United States Geography

Similarly, this thesis was restricted to companies started in the United States. While the US is the largest country in terms of the creation of venture backed software companies, there are many other countries in the world including China, the United Kingdom, Germany, France, and Canada where there is significant software development industry. Each jurisdiction could be examined to extend the theses presented here.

10.2.3 Time Span

The time span covered in the public data was restricted to companies going public from 2013 to 2018. Similarly, the data on private companies was captured in 2018. The period from 2013 to 2018 was one of relative financial stability with stock markets not experiencing significant adverse events. There was structural change noted during the period selected as the trend of companies raising more money privately began to affect when companies went public. It would be beneficial to extend this thesis to examine how success might be measured differently in less liquid markets, in ones with less venture capital availability, and where the stock market might not be as healthy.

10.2.4 Limited Public Companies

While the number of data points for unicorns and public markets is small, it was not a sample; in fact, it was the entire population of companies which fit the criteria selected for examination. With only 58 public companies available for examination, the population is small. Expanding the size of the population may result in different findings and could be accomplished simply through the extension of the research to other venture backed industries in other countries with a wider time span.

10.2.5 Limited Data on Private Companies

Examination of performance and success is still limited by the lack of availability of data on private companies. Certainly, data such as is available through the Openview survey cited in this thesis enables certain conclusions to be reached. There may be lack of consistency in the numbers as the data is self-reported. It is also not comprehensive data as it only examines certain data points. Having access to a broader database of private company results would improve an understanding of the issues examined here.

There are also issues in data availability between countries. For instance, the reporting of all capital obtained is mandated by law in the US but not in Canada. As a result, the capitalization data from the US may be more complete than data from other countries. In addition, employee data will be more complete in the US and other English speaking countries because of the higher use of LinkedIn by employees. Lower LinkedIn usage in certain countries may make the comparison between countries difficult.

Another issue in the use of private company data is the accuracy of valuation data. The valuation of private companies for investment in by venture capitalists is done by the venture capitalists themselves. It is subject to negotiation and may reflect the complexity of the terms and conditions of the instruments used for investments. As such, the valuations used may not adequately reflect the valuation arrived at in an open market for common shares. Given that private company valuations will always remain somewhat problematic, the use of valuations obtained as a company is in the process of going public or when it is sold will result in much higher quality evaluations of success.

10.2.6 Venture Backed Companies

The purpose of this thesis was not to develop a comprehensive and general theory about success, only use the topic of success to demonstrate that consideration of stakeholder needs is essential to being able to define and measure success. Having examined success from the perspective of one stakeholder, it would be valuable to extend the research to other types of stakeholders as well. Within the investor class, other stakeholders worthy of examination could include, angel investors, friends and family, and corporate investors. Extending to other

types of stakeholders including customers, employees, and society, as a whole would further enrich the conversation. As global goals change to encompass the well-being of people and the planet, understanding the needs of society as a stakeholder will enable the development of proper indicators or performance and success for individuals, businesses and other institutions.

10.3 Future Research

While the limitations discussed above give rise to opportunities for further research, there are a number of other ways this research can be extended to enable a better understanding of performance and success.

10.3.1 Survey of Venture Capitalists

This thesis used publicly available return rates and built a model based on other public data in order to be able to develop a hurdle rate to define success for venture capital investors. A valuable further piece of research would be to survey venture capitalists in order to determine how they view and define success. Further segmenting the population into seed, Series A and later stage investors would undoubtedly uncover different hurdle rates of success, perhaps based on different risk profiles and the needs of the limited partners from whom they receive capital.

10.3.2 Comprehensive Survey of Performance and Success

Having differentiated between performance, satisfaction, and success it would now be possible to survey entrepreneurs and properly ask them how they see each. How do they measure each of them and is there alignment between measures when made by the entrepreneurs versus when it is made by stakeholders? Relating performance and success with satisfaction would be another valuable addition to the academic discussion. In fact, there is a whole rich body of work to be developed through the proper definition and categorization of the issues identified.

10.3.3 New Performance Metrics

This thesis sought to develop new performance metrics to further enable the development of theory and introduced growth efficiency and financial velocity as two new measures. Having discovered through metrics that there is a trade-off between growth and capital efficiency driving investment return, there are other new metrics which can be developed to measure efficiency as one item and determine how other measures of efficiency impact growth and return.

10.3.4 A More Detailed Calculation of Success

The measurement of success was done in this thesis using publicly available data. It would be valuable to use actual data from venture capitalists, on a fund by fund basis to examine the actual experience they have had in driving successful payouts to limited partners. Is there a different model for seed versus late series investors for example? Do different holding times affect risk and required return rates so that the actual experience of success needs to be modified based on investor type or investment type?

10.3.5 More work on Performance Hurdles

This thesis explored the different growth rates experienced at different stages of a company's development. Hurdle rates could be further defined if performance data could be correlated to success in obtaining the next round of financing. While there may always be a desire to simplify hurdle rates for defining growth performance, it would be useful to drive further into available data in order to develop an overall size agnostic metric.

10.3.6 A New Perspective on the Lifecycle of venture Capital Backed Firms

The lack of connection of the life cycle of a firm with the life cycle of venture capital investments is an opportunity for future research. Determining what venture capitalists consider success at each stage and correlating the development of firms to other life cycle research would present multiple opportunities to gain a new perspective on the development of firms.

10.3.7 Sustainability

This thesis has focussed on investor value maximization and not dealt with the impact that adopting enlightened value maximization as an objective would have on the research. Future research could focus on measurements of success combining the needs of other stakeholders. Research could also look at how a balance must be achieved between the needs of other stakeholders and how this impacts on definitions and measurements of success.

10.3.8 Research on What Drives Success

Firms and investors need new ways to look at situations and new ways to make decisions. Having carefully defined what success means and having developed new measures of performance and success, it is now possible to turn properly to the original intent of this thesis and join a large conversation in academic publications on what factors are most associated with driving success.

Biography – Charles Plant

Charles Plant is a serial entrepreneur, financial strategist, and fractional CFO. As founder of The Narwhal Project, he is conducting research in order to understand what it takes to create a world class technology company. Aside from over 35 research papers he has written a book that is available on Amazon entitled *Triggers and Barriers: A Customer Perspective on Innovation* and has another two books in progress..

He was co-founder and CEO for 15 years of Synamics, a telecommunications software firm. He has been co-founder of four, Board Chair at four and CFO of 12 emerging technology companies. He has worked on numerous financing and M&A transactions in investment banking, on the management committee and CFO of three venture capital firms, and as an advisor at a number of incubators. Charles has also served as an advisor to national, provincial and city governments on innovation policy.

As an educator, Charles spent seven years on the faculty of York's Schulich School of Business teaching in the MBA program and has taught innovation and entrepreneurship at the University of Toronto. He has an MBA in marketing, is a CPA/CA.

References

1. Achtenhagen, L., Naldi, L., & Melin, L. (2010). "Business growth"—Do practitioners and scholars really talk about the same thing?. *Entrepreneurship theory and practice*, *34*(2), 289-316.

2. Adizes, I. (1979). Organizational passages—diagnosing and treating lifecycle problems of organizations. *Organizational dynamics*, *8*(1), 3-25.

3. Agle, B. R., Mitchell, R. K., & Sonnenfeld, J. A. (1999). Who matter to CEOs? An investigation of stakeholder attributes and salience corporate performance, and CEO values. Academy of Management Journal, 42(5), 507-525. doi: 10.2307/256973

4. Agostino, M. & Trivieri, F., (2018). Who benefits from longer lending relationships? An analysis on European SMEs. *Journal of Small Business Management*, *56*(2), pp.274-293.

5. Ahmad, N.H., Wilson, C. & Kummerow, L., (2011). Assessing the dimensionality of business success: The perspectives of Malaysian SME owner-managers. *Journal of Asia-Pacific Business*, *12*(3), pp.207-224.

6. Angel, P., Jenkins, A. & Stephens, A., (2018). Understanding entrepreneurial success: A phenomenographic approach. International Small Business Journal, 36(6), pp.611-636.

7. Anglin, A.H., Short, J.C., Drover, W., Stevenson, R.M., McKenny, A.F. & Allison, T.H., (2018). The power of positivity? The influence of positive psychological capital language on crowdfunding performance. *Journal of Business Venturing*, *33*(4), pp.470-492.

8. Anglin, A.H., Wolfe, M.T., Short, J.C., McKenny, A.F. & Pidduck, R.J., (2018). Narcissistic rhetoric and crowdfunding performance: A social role theory perspective. *Journal of Business Venturing*, *33*(6), pp.780-812.

9. Arcot, S. 2014. Participating convertible preferred stock in venture capital exits. *Journal of Business Venturing*, 29: 72-87.

10. Arnold, D. G. (2016). Corporate responsibility, democracy, and climate change. *Midwest studies in philosophy*, *40*, 252-261.

11. Aupperle, K.E., Carroll, A.B. & Hatfield, J.D., (1985). An empirical examination of the relationship between corporate social responsibility and profitability. *Academy of management Journal*, *28*(2), pp.446-463.

12. Ball, E., Chiu, H.H., & Smith, R. (2011) Can Vcs time the market? An analysis of exit choice for venture-backed firms. Rev Financ Stud 24:3105–3138

13. Barabási, A.L., (2018). *The formula: The universal laws of success*. Hachette UK.

14. Barringer, B.R., Jones, F.F. & Neubaum, D.O., (2005). A quantitative content analysis of the characteristics of rapid-growth firms and their founders. Journal of business venturing, 20(5), pp.663-687.

15. Basu, S. (1999), Corporate Purpose: Why it Matters More than Strategy, New York: Garland Pub.; http://search.lib.virginia.edu/catalog/u3519762.

16. Baum, J.A. & Silverman, B.S., (2004). Picking winners or building them? Alliance, intellectual, and human capital as selection criteria in venture financing and performance of biotechnology startups. Journal of business venturing, 19(3), pp.411-436.

17. Belot, F. & Serve, S., (2018). Earnings Quality in Private SMEs: Do CEO Demographics Matter?. *Journal of Small Business Management*, *56*, pp.323-344.

18. Bengtsson, O. (2011). Covenants in venture capital contracts. *Management Science*, 57: 1926-1943.

19. Berman, S. L., Wicks, A. C., Kotha, S., & Jones, T. M. (1999.) Does stakeholder orientation matter? The relationship between stakeholder management models and firm financial performance. Academy of Management Journal, 42: 488–506. http://dx.doi. org/10.2307/256972.

20. Blank, S. (2020). *The four steps to the epiphany: successful strategies for products that win*. John Wiley & Sons.

21. Bojica, A.M., Estrada, I. & Mar fuentes-fuentes, M.D., (2018). In good company: when small and medium-sized enterprises acquire multiplex knowledge from key commercial partners. *Journal of Small Business Management*, *56*(2), pp.294-311.

22. Bojica, A.M., Ruiz Jiménez, J.M., Ruiz Nava, J.A.. & Fuentes-Fuentes, M.M., (2018), Bricolage and growth in social entrepreneurship organisations, Entrepreneurship and Regional Development, Volume 30, Issue 3 - 4, Pages: 362-389

23. Bosma, N., & Schutjens, V. (2009). Determinants of early stage entrepreneurial activity in European regions Distinguishing low and high ambition entrepreneurship. Making the difference in local, regional and national economies: Frontiers in European entrepreneurship research, pp. 4980 - Book

24. Bosma, N., Wennekers, S., Guerrero, M., Ernesto Amorós, J., Martiarena, A., & Singer S., (2013) Special Report on Entrepreneurial Employee Activity, Global Entreprneurship Monitor.

25. Bruton, G. D., Fried, V. H., & Manigart, S. (2005). Institutional Influences on the Worldwide Expansion of Venture Capital. Entrepreneurship Theory and Practice 29, no. 6: 737- 60.

26. Bruton, G.D., Su, Z. & Filatotchev, I., (2018). New venture performance in transition economies from different institutional perspectives. *Journal of Small Business Management*, *56*(3), pp.374-391.

27. Burton, M.D., Sørensen, J.B. & Beckman, C.M., (2002). Coming from good stock: Career histories and new venture formation. In Social structure and organizations revisited (pp. 229-262). Emerald Group Publishing Limited.

28. Canada, (2012), Key Small Business Statistics, Industry Canada Small Business Branch

29. Canadian Urban Institute (2019), Mississauga Entrepreneurship and Innovation Study.

30. Carland, J. & Carland, J., (2004). Economic development: Changing the policy to support entrepreneurship. *Academy of Entrepreneurship Journal*, *10*(2), pp.104-114.

31. Carland, J.W., Hoy, F., Boulton, W.R. & Carland, J.A.C., (2007). Differentiating entrepreneurs from small business owners: A conceptualization. In *Entrepreneurship* (pp. 73-81). Springer, Berlin, Heidelberg.

32. Carroll, A.B., (1979). A three-dimensional conceptual model of corporate performance. *Academy of management review*, *4*(4), pp.497-505.

33. Cassar, G., (2007), Money, money, money? A longitudinal investigation of entrepreneur
34. career reasons, growth preferences and achieved growth, Entrepreneurship and
35. Regional Development 19, 89-107.

36. CB Insights https://www.cbinsights.com/research/venture-capital-funnel-2/ 2018

37. CB Insights 2020, The Venture Capital Funnel 1/17/2020

38. CB Insights www.cbinsights.com

39. Chakravarthy, B.S., (1986). Measuring strategic performance. *Strategic management journal*, *7*(5), pp.437-458.

40. Chander, G.N. & Hanks, S.H., (1993). Measuring the performance of emerging businesses: A validation study. *Journal of Business venturing*, *8*(5), pp.391-408.

41. Chandler, Alfred D., Jr. (1977). *The Visible Hand: The Managerial Revolution in American Business*. Cam- bridge and London: Harvard University Press.

42. Chirico, F., Salvato, C., Byrne, B., Akhter, N. & Arriaga Múzquiz, J., (2018). Commitment escalation to a failing family business. *Journal of Small Business Management*, *56*(3), pp.494-512.

43. Cho, H.J. & Pucik, V., (2005). Relationship between innovativeness, quality, growth, profitability, and market value. *Strategic management journal*, *26*(6), pp.555-575.

44. Choi, J., & Wang, H. (2009). Stakeholder relations and the persistence of corporate finan- cial performance. Strategic Management Journal, 30: 895–907.

45. Chong, H.G., (2008). Measuring performance of small-and-medium sized enterprises: the grounded theory approach. *Journal of Business and Public affairs*, *2*(1), pp.1-10.

46. Churchill, N.C. & Lewis, V.L., (1983). The five stages of small business growth. *Harvard Business Review,* 61(3), p.30-50.

47. Clarkson, M. B. E. (1995). A stakeholder framework for analyzing and evaluating corporate social performance. The Academy of Management Review, 20(1), 92-117. doi: 10.2307/258888

48. Clarysse, B., Bruneel, J. & Wright, M., (2011). Explaining growth paths of young technology-based firms: structuring resource portfolios in different competitive environments. *Strategic Entrepreneurship Journal*, *5*(2), pp.137-157.

49. Coad, A., Frankish, J., Roberts, R.G. & Storey, D.J., (2013). Growth paths and survival chances: An application of Gambler's Ruin theory. *Journal of Business Venturing*, *28*(5), pp.615-632.

50. Collins, J.C. & Porras, J.I. (1994), Built to Last: Successful Habits of Visionary Companies, New York: Harper Business.

51. Colombo, M.G. & Grilli, L., (2010). On growth drivers of high-tech start-ups: Exploring the role of founders' human capital and venture capital. *Journal of business venturing*, *25*(6), pp.610-626

52. Conger, M., McMullen, J.S., Bergman Jr, B.J. & York, J.G., (2018). Category membership, identity control, and the reevaluation of prosocial opportunities. *Journal of Business Venturing*, *33*(2), pp.179-206.

53. Connolly, T., Conlon, E. J., & Deutsch, S. J. (1980). Organizational effectiveness: A multiple-constituency approach. Academy of Management Review, 5: 211–17.

54. Cooper, A.C., Gimeno-Gascon, F.J. & Woo, C.Y., (1994). Initial human and financial capital as predictors of new venture performance. Journal of business venturing, 9(5), pp.371-395.

55. Croce, A., Guerini, M., & Ughetto, E., (2018), Angel Financing and the Performance of High-Tech Start-Ups, Journal of Small Business Management, Volume 56, Issue 2, Pages: 208-228

56. Crunchbase www.crunchbase.com

57. Cumming, D. (2008). Contracts and exits in venture capital finance. *The Review of Financial Studies*, 21: 1947-1982.

58. Currid-Halkett, E., (2010). *Starstruck: The business of celebrity*. Farrar, Straus and Giroux.

59. Da Cruz, J.V., (2018). Beyond financing: crowdfunding as an informational mechanism. *Journal of Business Venturing*, *33*(3), pp.371-393.

60. Damiani, M., Pompei, F. & Ricci, A., (2018). Family Firms and Labor Productivity: The Role of Enterprise-Level Bargaining in the Italian Economy. *Journal of Small Business Management*, *56*(4), pp.573-600.

61. Davidsson, P. & Wiklund, J. (2000). Conceptual and empirical challenges in the study of firm growth. In D.L. Sexton & H. Landström (Eds.), The Blackwell handbook of entrepreneurship (pp. 26–44). Oxford: Blackwell Publishers. (Book)

62. Davidsson, P., (2009). *The entrepreneurship research challenge*. Edward Elgar Publishing.

63. Davidsson, P., Delmar, F., & Wiklund, J. (2006). Entrepreneurship and the growth of firms. Cheltenham: Edward Elgar

64. Davidsson, P., Steffens, P. & Fitzsimmons, J., (2009). Growing profitable or growing from profits: putting the horse in front of the cart?. *Journal of business venturing*, *24*(4), pp.388-406.

65. Davila, A., Foster, G. & Gupta, M., (2003). Venture capital financing and the growth of startup firms. Journal of business venturing, 18(6), pp.689-708.

66. De Clercq, D., Fried, V. H., Lehtonen, O., & Sapienza, H. J. (2006). An entrepreneur's guide to the venture capital galaxy. Academy of Management Perspectives 20, no. 3: 90-112.

67. Decker, C., (2018). Stakeholders' impact on turnaround performance: The case of German savings banks. *Journal of Small Business Management*, *56*(4), pp.534-554.

68. Delmar, F. (1997). Measuring growth: Methodological considerations and empirical results. In R. Donckels & A. Miettinen (Eds.), Entrepreneurship and SME research: On its way to the next millennium (pp. 199–215). Hants, UK: Ashgate.

69. Dodge, H.R. & Robbins, J.E., (1992). An empirical investigation of the organizational life cycle. *Journal of Small Business Management*, 30(1), pp.27- 37.

70. Donaldson, T., & Preston, L.E. (1995). The stakeholder theory of the corporation: Concepts, evidence, and implications. Academy of Management Review, 20(1), 65-91.

71. Downs, A. (1967). The life cycle of bureaus. *Inside bureaucracy*, *296*, 309.

72. Driessen, J., Lin, T.C., & Phalippou, L., (2012) A new method to estimate risk and return of nontraded assets from cash flows: the case of private equity funds. J Financ Quant Anal 47:511–535

73. Drover, W., Busenitz, L., Matusik, S., Townsend, D., Anglin, A. & Dushnitsky, G., (2017). A review and road map of entrepreneurial equity financing research: venture

capital, corporate venture capital, angel investment, crowdfunding, and accelerators. *Journal of Management*, *43*(6), pp.1820-1853.

74. Dufour, Y., Steane, P. & Corriveau, A.M., (2018). From the organizational life- cycle to "ecocycle": a configurational approach to strategic thinking. *Asia-Pacific Journal of Business Administration*, 10(2-3), pp.171-183.

75. Duska, R.F. (1997), "The Why's of Business Revisited", Journal of Business Ethics, 16(12-13): 1401–1409.

76. Edgar, US Securities and Exchange Commission https://www.sec.gov/edgar.shtml

77. Elkington, J., (1999). Triple bottom-line reporting: Looking for balance. *AUSTRALIAN CPA*, *69*, pp.18-21.

78. Ellsworth, R.R. (2002), Leading with Purpose: The New Corporate Realities, Stanford: Stanford Business Books.

79. Fanning, S. & Poyar, K. (2018) Expansion SaaS Benchmarks, *Openview*
80. https://offers.openviewpartners.com/hubfs/OpenView_2018_Expansion_SaaS_Benchmarks_Report.pdf

81. Fayolle, A., Landstrom, H., Gartner, W. B., & Berglund, K. (2016). The institutionalization of entrepreneurship: Questioning the status quo and re-gaining hope for entrepreneurship research. *Entrepreneurship & Regional Development*, *28*(7-8), 477-486.

82. Feeser, H.R. & Willard, G.E., (1990). Founding strategy and performance: A comparison of high and low growth high tech firms. *Strategic management journal*, *11*(2), pp.87-98.

83. Ferreira, M.P., Reis, N.R. & Miranda, R., (2015). Thirty years of entrepreneurship research published in top journals: analysis of citations, co-citations and themes. *Journal of Global Entrepreneurship Research*, *5*(1), p.17.

84. Fisch, J. E., & Davidoff Solomon, S. (2020). Should Corporations Have a Purpose?. *U of Penn, Inst for Law & Econ Research Paper*, (20-22).

85. Fischer, E. & Reuber, A.R., (2003). Support for rapid-growth firms: a comparison of the views of founders, government policymakers, and private sector resource providers. *Journal of small business management*, *41*(4), pp.346-365.

86. Fisher, R., Maritz, A. & Lobo, A., (2014). Evaluating entrepreneurs' perception of success: Development of a measurement scale. *International Journal of Entrepreneurial Behavior & Research*, *20*(5), pp.478-492.

87. Flamholtz, E.G., (1990.) Toward a holistic model of organizational effectiveness and organizational development at different stages of growth. *Human Resource Development Quarterly*, 1(2), pp.109-127.

88. Flamholtz, E.G., (1995). Managing organizational transitions: Implications for corporate and human resource management. *European Management Journal*, 13(1), pp.39-51.

89. Fraiberger, S.P., Sinatra, R., Resch, M., Riedl, C. & Barabási, A.L., (2018). Quantifying reputation and success in art. Science, 362(6416), pp.825-829.

90. Franke, N., Gruber, M., Harhoff, D., & Henkel, J. (2006). What you are is what you like— similarity biases in venture capitalists' evaluations of start-up teams. Journal of Business Venturing 21, no. 6: 802-826.

91. Freeman, R. E. (1984). Strategic management: A stakeholder approach. Boston: Pitman.

92. Freeman, R. E., & Ginena, K. (2015). Rethinking the purpose of the corporation: Challenges from stakeholder theory. *Notizie di Politeia*, *31*(117), 9-18.

93. Freeman, R.E., (2010). Managing for stakeholders: Trade-offs or value creation. *Journal of business ethics*, *96*(1), pp.7-9.

94. Fukugawa, N., (2018). Division of labor between innovation intermediaries for SMEs: Productivity effects of interfirm organizations in Japan. *Journal of Small Business Management*, *56*, pp.297-322.

95. García-Villaverde, P.M., Parra-Requena, G. & Molina-Morales, F.X., (2018). Structural social capital and knowledge acquisition: implications of cluster membership. *Entrepreneurship & Regional Development*, *30*(5-6), pp.530-561.

96. Gartner, W.F (1990) What are we talking about when we talk about entrepreneurship? Journal of Business Venturing 5, 15-28 01990

97. Gast, J., Filser, M., Rigtering, J.C., Harms, R., Kraus, S. & Chang, M.L., (2018). Socioemotional wealth and innovativeness in small-and medium-sized family enterprises: A configuration approach. *Journal of Small Business Management*, *56*(sup1), pp.53-67.

98. Gedeon, S. (2010). What is entrepreneurship. *Entrepreneurial practice review*, *1*(3), 16-35.

99. GEM https://www.gemconsortium.org/wiki/1183

100. Gerba, Y.T. & Viswanadham, P., (2016). Performance measurement of small scale enterprises: Review of theoretical and empirical literature. *International Journal of Applied Research*, *2*(3), pp.531-535.

101. Gerschewski, S. & Xiao, S.S., (2015). Beyond financial indicators: An assessment of the measurement of performance for international new ventures. *International Business Review*, *24*(4), pp.615-629.

102. Gibb, A.A., (2000). SME policy, academic research and the growth of ignorance, mythical concepts, myths, assumptions, rituals and confusions. *International Small Business Journal*, *18*(3), pp.13-35.

103. Gifford, S., (1997). Limited attention and the role of the venture capitalist. Journal of Business Venturing 12 (6), 459e482.

104. Gompers, P. A., (1994). The Rise and Fall of Venture Capital. Business and Economic History 23, no. 2: 1-24.

105. Gompers, P. and Lerner, J., 2000. The determinants of corporate venture capital success: Organizational structure, incentives, and complementarities. In *Concentrated corporate ownership* (pp. 17-54). University of Chicago Press.

106. Gompers, P., Kovner, A. & Lerner, J., (2009). Specialization and success: Evidence from venture capital. Journal of Economics & Management Strategy, 18(3), pp.817-844.

107. Gompers, P., Kovner, A., Lerner, J., & Scharfstein, D., (2008). Venture capital investment cycles: The impact of public markets. Journal of Financial Economics, 87(1), pp.1-23.

108. Goodpaster, K., & Holloran, T. (1994). In defense of a paradox. Business Ethics Quarterly, 4: 423–30

109. Gorgievski, M.J., Ascalon, M.E., & Stephan, U., (2011). Small business owners' success criteria, a values approach to personal differences. *Journal of Small Business Management*, *49*(2), pp.207-232.

110. Gray, B., & Ariss, S.S., (1985). Politics and strategic change across organizational life cycles. *Academy of Management Review*, 10(4), pp.707-723.

111. Green, S ., (1996) *Broadway Musicals: Show by Show* (Milwaukee, WI: Hal Leonard Corp.)

112. Greiner, L. E., (1989). Evolution and revolution as organizations grow. In *Readings in strategic management* (pp. 373-387). Palgrave, London.

113. Grenadier, S. R., & Malenko, A., (2011). Real options signaling games with applications to corporate finance. *The* Review of Financial Studies, 24: 3993-4036.

114. Griffin, J.J., Mahon, J.F., (1997). The corporate social performance and corporate financial performance debate: Twenty-five years of incomparable research. *Business & society*, *36*(1), pp.5-31.

115. Grimes, M.G., Gehman, J. & Cao, K., (2018). Positively deviant: Identity work through B Corporation certification. *Journal of Business Venturing*, *33*(2), pp.130-148.

116. Guler, I., (2007). Throwing good money after bad? Political and institutional influences on sequential decision making in the venture capital industry. Administrative Science Quarterly, 52: 248-285.

117. Guo, B., Lou, Y., Pe´rez-Castrillo, D., (2015) Investment, duration, and exit strategies for corporate and independent venture capital-backed start-ups. J Econ Manag Strategy 24:415–455

118. Gupta, A.K., & Govindarajan, V., (1984). Business unit strategy, managerial characteristics, and business unit effectiveness at strategy implementation. *Academy of Management journal*, *27*(1), pp.25-41.

119. Haber, S., & Reichel, A., (2005). Identifying performance measures of small ventures—the case of the tourism industry. *Journal of small business management*, *43*(3), pp.257-286.

120. Hanks, S.H., (1990). The organization life cycle: Integrating content and process. *Journal of Small Business Strategy*, 1(1), pp.1-12.

121. Hanks, S.H., Watson, C.J., Jansen, E., & Chandler, G.N., (1994). Tightening the life-cycle construct: A taxonomic study of growth stage configurations in high-technology organizations. *Entrepreneurship Theory and Practice*, 18(2), pp.5-29.

122. Harrison, J.S., & Wicks, A.C., (2013). Stakeholder theory, value, and firm performance. *Business ethics quarterly*, *23*(1), pp.97-124.

123. Hart, O. (2011). Thinking about the firm: A review of Daniel Spulber's The Theory of the Firm. *Journal of Economic Literature*, *49*(1), 101-13.

124.

125. Haudenosaunee. www.haudenosauneeconfederacy.com/values/

126. Headd, B., & Kirchhoff, B., (2009). The growth, decline and survival of small businesses: An exploratory study of life cycles. *Journal of Small Business Management*, *47*(4), pp.531-550.

127. Hellmann, T., (2006). IPOs, acquisitions, and the use of convertible securities in venture capital. Journal of Financial Economics, 81: 649-679.

128. Hellmann, T., & Thiele, V. (2015). Friends or foes? The interrelationship between angel and venture capital markets. *Journal of Financial Economics*, 115: 639-653.

129. Heminway, J. M. (2017). Shareholder wealth maximization as a function of statutes, decisional law, and organic documents. *Wash. & Lee L. Rev.*, *74*, 939.

130. Hermans, J., Vanderstraeten, J., Van Witteloostuijn, A., Dejardin, M., Ramdani, D., & Stam, E., (2015). Ambitious entrepreneurship: A review of growth aspirations, intentions, and expectations. In *Entrepreneurial growth: Individual, firm, and region* (pp. 127-160). Emerald Group Publishing Limited

131. Hessels, J., Van Gelderen, M., & Thurik, R. (2008b). Entrepreneurial aspirations, motivations, and their drivers. Small Business Economics, 31, 323339.

132. Hill, C.W.L., & Jones, T.M., (1992). Stakeholder-agency theory. Journal of Management Studies, 29(2), 131-154.

133. Hillman, A.J., & Keim, G.D., (2001). Shareholder value, stakeholder management, and social issues: What's the bottom line? Strategic Management Journal, 22: 125–39.

134. Hisrich, R. D., & Peters, M. P., (1998). Entrepreneurship, 4th ed. Boston: McGraw-Hill/ Irwin.

135. Hitt, M. A., (1988). The measuring of organizational effectiveness: multiple domains and constituencies. Management International Review, 28(2), 28-40.

136. Hoban, J. P., (1978). Characteristics of Venture Capital Investments. Financial Review 13, no. 1: 104-106.

137. Hochberg, Y.V., Ljungqvist, A., & Lu, Y., (2007). Whom you know matters: Venture capital networks and investment performance. The Journal of Finance, 62(1), pp.251-301.

138. Hormiga, E., Batista-Canino, R.M., & Sánchez-Medina, A., (2011). The Impact of Relational Capital on the Success of New Business Start-Ups. *Journal of Small Business Management*, *49*(4), pp.617-638.

139. Huang, L., Wu, A., & Lee, M., (2017), The American Angel, Wharton Entrepreneurship and Angel Capital Association. P13

140. Hult, G.T.M., Ketchen, D.J., Griffith, D.A., Chabowski, B.R., Hamman, M.K., Dykes, B.J., Pollitte, W.A., & Cavusgil, S.T., (2008). An assessment of the measurement of performance in international business research. *Journal of International Business Studies*, *39*(6), pp.1064-1080.

141. Hwang, J., Chung, J.E., (2018). The roles of business ethics in conflict management in small retailer–supplier business relationships. *Journal of Small Business Management*, *56*(2), pp.348-368.

142. Industry Canada, Small Business Branch (2012) Key Small Business Statistics p5.

143. Ioniţă, D., (2013). Success and goals: An exploratory research in small enterprises. *Procedia Economics and Finance*, *6*, pp.503-511.

144. Islam, M., Fremeth, A. & Marcus, A., (2018). Signaling by early stage startups: US government research grants and venture capital funding. *Journal of Business Venturing*, *33*(1), pp.35-51.

145. Jawahar, I.M. & McLaughlin, G.L., (2001). Toward a descriptive stakeholder theory: An organizational life cycle approach. *Academy of Management Review*, 26(3), pp.397-414.

146. Jensen, M.C. & Meckling, W., (1976). *Theory of the firm: managerial behavior, agency costs and ownership structure En: Journal of Finance Economics*, *3*.

147. Jensen, M.C., (2001). Value maximization, stakeholder theory, and the corporate objective function. *Journal of applied corporate finance*, *14*(3), pp.8-21.

148. Jirásek, M., & Bílek, J. (2018). The organizational life cycle: Review and future agenda. *Quality Innovation Prosperity*, *22*(3), 01-18.

149. Johannisson, B. (2018), Disclosing everyday practices constituting social entrepreneuring – a case of necessity effectuation, Entrepreneurship and Regional Development, Volume 30, Issue 3 - 4, Pages: 390-406

150. Johnson, M.A., Stevenson, R.M. & Letwin, C.R., (2018). A woman's place is in the… startup! Crowdfunder judgments, implicit bias, and the stereotype content model. *Journal of Business Venturing*, *33*(6), pp.813-831.

151. Kaplan, R. S., & Norton, D. P. (1992). The balanced scorecard: measures that drive performance. Harvard Business Review, 70(1), 71-79.

152. Kaplan, S. N., & Schoar, A. (2005). Private Equity Performance: Returns, Persistence, and Capital Flows. Journal of Finance 60, no. 4: 1791-1823.

153. Kaplan, S. N., & Strömberg, P. E. (2004). Characteristics, contracts, and actions: Evidence from venture capitalist analyses. The Journal of Finance, 59: 2177-2210.

154. Katz, D., & Kahn, R. L. (1978). *The social psychology of organizations* (Vol. 2, p. 528). New York: Wiley

155. Katz, J. A. (2003). The chronology and intellectual trajectory of American entrepreneurship education: 1876–1999. *Journal of business venturing*, *18*(2), 283-300.

156. Kehoe & Kevin, R. (1994). The measure of success. American Nurseryman, pp.3, 73.

157. Kerr, W. R., Lerner, J., & Schoar, A. (2014). The consequences of entrepreneurial finance: Evidence from angel financings. The Review of Financial Studies, 27: 20-55.

158. Khan, Z.A. and Hussanie, I.,(2018) Shareholders Wealth Maximization: Objective of Financial Management Revisited. International Journal of Enhanced Research in Management & Computer Applications ISSN: 2319-7471, Volume 7 Issue 3, March-2018,

159. Kimberly, J. R. (1979). Issues in the creation of organizations: Initiation, innovation, and institutionalization. *Academy of management Journal*, *22*(3), 437-457.

160. Kirsch, D., Goldfarb, B., & Gera, A. (2009). Form or substance: The role of business plans in venture capital decision making. Strategic Management Journal, 30: 487-515.

161. Konon, A., Fritsch, M. & Kritikos, A.S., (2018). Business cycles and start-ups across industries: An empirical analysis of German regions. *Journal of Business Venturing*, *33*(6), pp.742-761.

162. Kräussl, R. & Krause, S., (2014). Has Europe been catching up? An industry level analysis of venture capital success over 1985–2009. *European Financial Management*, *20*(1), pp.179-205.

163. Krejcí, M., Strielkowski, W. & Čabelková, I., (2015). Factors that influence the success of small and medium enterprises in ICT: a case study from the Czech Republic. *Business: Theory and Practice*, *16*, p.304.

164. Kunkel, S.W., (2001). Toward a typology of entrepreneurial activities. *Academy of Entrepreneurship Journal*, *7*(1), pp.75-90.

165. La Rosa, F., Paternostro, S. & Picciotto, L., (2018). Exploring the determinants of anti-mafia entrepreneurial behaviour: an empirical study on southern Italian SMEs. *Entrepreneurship & Regional Development*, *30*(1-2), pp.81-117.

166. Landström, H., & Benner, M. (2010). Entrepreneurship research: a history of scholarly migration. *Historical foundations of entrepreneurship research*, 15-45.

167. Lankoski, L., & Smith, N. C. (2018). Alternative objective functions for firms. *Organization & Environment*, *31*(3), 242-262.

168. Larimo, J., Le Nguyen, H. & Ali, T., (2016). Performance measurement choices in international joint ventures: What factors drive them?. *Journal of Business Research*, *69*(2), pp.877-887.

169. Le Breton-Miller, I. & Miller, D., (2009). Agency vs. stewardship in public family firms: A social embeddedness reconciliation. *Entrepreneurship theory and practice*, *33*(6), pp.1169-1191.

170. Lee, Y.S., (2018). Government guaranteed small business loans and regional growth. *Journal of Business Venturing*, *33*(1), pp.70-83.

171. Leppäaho, T., Chetty, S. & Dimitratos, P., (2018). Network embeddedness in the internationalization of biotechnology entrepreneurs. *Entrepreneurship & Regional Development*, *30*(5-6), pp.562-584.

172. Lester, D.L., Parnell, J.A. & Carraher, S., (2003). Organizational life cycle: A five-stage empirical scale. *The International Journal of Organizational Analysis*, 11(4), pp.339-354.

173. Li, B., Ansell, J. & Harrison, T., (2015). Success and Performance: A UK SMEs Perspective.

174. Li, Y. (2008). Duration analysis of venture capital staging: A real options perspective. *Journal of Business Venturing*, 23: 497-512.

175. Li, Y., & Chi, T. (2013). Venture capitalists' decision to withdraw: The role of portfolio configuration from a real options lens. *Strategic Management Journal*, 34: 1351-1366.

176. Lindell, L. & Englund, E., (2016). What is a successful startup?: Exploring venture capitals' impact on entrepreneurs' view of success.

177. Lippitt, G. L., & Schmidt, W. H. (1967). Crises in a developing organization. *Harvard business review*.

178. Lyden, F. J. (1975). Using Parsons' functional analysis in the study of public organizations. *Administrative science quarterly*, 59-70.

179. MacMillan, I. C., Siegel, R., & Narasimha, P. B. S. (1985). The Criteria used by Venture Capitalists to Evaluate New Venture Proposals. Journal of Business Venturing 1, no. 1: 119-128.

180. MacMillan, I.C., Zemann, L., & Subbanarasimha, P.N., (1987). Criteria distinguishing successful from unsuccessful ventures in the venture screening process. Journal of Business Venturing 2 (2), 123e137.

181. Mainela, T., Puhakka, V. & Sipola, S., (2018). International entrepreneurship beyond individuals and firms: On the systemic nature of international opportunities. *Journal of Business Venturing*, *33*(4), pp.534-550.

182. Manigart, S., de Waele, K., Wright, M., Robbie, K., Desbrieres, P., Sapianza, H. J.,& Beekman, A. (2002). Determinants of required return in venture capital investments: a five-country study. Journal of Business Venturing 17, no. 4: 291-312.

183. Manigart, S., Lockett, A., Meuleman, M., Wright, M., Landström, H., Bruining, H., & Hommel, U. (2006). VCs' decision to syndicate. *Entrepreneurship Theory and Practice*, 30: 131-153.

184. March-Chorda, I., (2004). Success factors and barriers facing the innovative start-ups and their influence upon performance over time. *International Journal of Entrepreneurship and Innovation Management*, *4*(2-3), pp.228-247.

185. Markman, G.D. & Gartner, W.B., (2002). Is extraordinary growth profitable? A study of Inc. 500 high–growth companies. *Entrepreneurship theory and practice*, *27*(1), pp.65-75.

186. Marmer, M., Herrmann, B. L., Dogrultan, E., Berman, R., Eesley, C., & Blank, S. (2011). Startup genome report extra: Premature scaling. *Startup Genome*, *10*, 1-56.

187. Martin, A. Additional aspects of entrepreneurial history. In C. A. Kent, D. L. Sexton, & K. H. Vesper (Eds.), (1982) Encyclopedia of Entrepreneurship. Englewood Cliffs, N.J.: Prentice-Hall, 1982, 15–19.

188. Martin, J. D., & Petty, J. W. (1983). An Analysis of the Performance of Publicly Traded Venture Capital Companies. The Journal of Financial and Quantitative Analysis 18, no. 3: 401- 410.

189. Mathias, B.D. & Williams, D.W., (2018). Giving up the hats? Entrepreneurs' role transitions and venture growth. *Journal of Business Venturing*, *33*(3), pp.261-277.

190. Matthews, C.H., Moore, T.W. & Fialko, A.S., (1999). Succession in the family firm: A cognitive categorization perspective. *Family Business Review*, *12*(2), pp.159-170.

191. McGuire, J.B., Sundgren, A. & Schneeweis, T., (1988). Corporate social responsibility and firm financial performance. *Academy of management Journal*, *31*(4), pp.854-872.

192. McKelvie, A. & Wiklund, J., (2010). Advancing firm growth research: A focus on growth mode instead of growth rate. *Entrepreneurship theory and practice*, *34*(2), pp.261-288.

193. McMullen, J.S. (2018), Organizational hybrids as biological hybrids: Insights for research on the relationship between social enterprise and the entrepreneurial ecosystem, Journal of Business Venturing, Volume 33 - Issue 5, Pages 575-590

194. Meglio, O., Destri, A. M. L., & Capasso, A. (2017). Fostering dynamic growth in new ventures through venture capital: Conceptualizing venture capital capabilities. *Long Range Planning*, *50*(4), 518-530.

195. Meoli, M., Pandes, J.A., Robinson, M.J. & Vismara, S., (2018). Can Spending Time in the Minors Pay Off? An Examination of the Canadian Junior Public Equity Markets. *Journal of Small Business Management*, *56*(sup1), pp.88-107.

196. Metrick A, & Yasuda A (2011) Venture capital and other private equity: a survey. Eur Financ Manag 17:619–654

197. Meyer, M., Libaers, D., Thijs, B., Grant, K., Glänzel, W. & Debackere, K., (2014). Origin and emergence of entrepreneurship as a research field. *Scientometrics*, *98*(1), pp.473-485.

198. Miller, C.C., Washburn, N.T. & Glick, W.H., (2013). Perspective—The myth of firm performance. *Organization Science*, *24*(3), pp.948-964.

199. Mintzberg, H., (1984). Power and organization life cycles. *Academy of Management Review*, 9(2), pp.207-224

200. Mitchell, R., Agle, B. R., & Wood, D. J. 1997. Toward a theory of stakeholder identification and salience: Defining the principles of who and what really counts. Academy of Management Review, 22: 853–86.

201. Morgan, H.M., Sui, S. & Baum, M., (2018). Are SMEs with immigrant owners exceptional exporters?. *Journal of Business Venturing*, *33*(3), pp.241-260.

202. Moroz, P.W., Branzei, O., Parker, S.C. & Gamble, E.N., (2018). Imprinting with purpose: Prosocial opportunities and B Corp certification.

203. Morris, M.H., Neumeyer, X., Jang, Y. & Kuratko, D.F., (2018). Distinguishing types of entrepreneurial ventures: An identity-based perspective. *Journal of Small Business Management*, *56*(3), pp.453-474.

204. Moss, T.W., Renko, M., Block, E. & Meyskens, M., (2018). Funding the story of hybrid ventures: Crowdfunder lending preferences and linguistic hybridity. *Journal of Business Venturing*, *33*(5), pp.643-659.

205. Muñoz, P. & Cohen, B., (2018). Entrepreneurial narratives in sustainable venturing: Beyond people, profit, and planet. *Journal of Small Business Management*, *56*, pp.154-176.

206. Munoz, P., Cacciotti, G. & Cohen, B., (2018). The double-edged sword of purpose-driven behavior in sustainable venturing. *Journal of business venturing*, *33*(2), pp.149-178.

207. Murphy, G.B., Trailer, J.W. & Hill, R.C., (1996). Measuring performance in entrepreneurship research. *Journal of business research*, *36*(1), pp.15-23.

208. Nahata, R., (2008). Venture capital reputation and investment performance. *Journal of financial economics*, *90*(2), pp.127-151.

209. Nahata, R., Hazarika, S. & Tandon, K., (2014). Success in global venture capital investing: do institutional and cultural differences matter?. *Journal of Financial and Quantitative Analysis*, *49*(4), pp.1039-1070.

210. Nahata, R., Hazarika, S. & Tandon, K., (2014). Success in global venture capital investing: do institutional and cultural differences matter?. *Journal of Financial and Quantitative Analysis*, *49*(4), pp.1039-1070.

211. National Archives (2021) Code of Federal Regulations , Part 121 Small Business Size Regulations

212. National Venture Capital Association Yearbook – (2019), National Venture Capital Association.

213. New York Times https://www.nytimes.com/books/best-sellers/

214. NVCA, National venture Capital Association Yearbook – (2019), National Venture Capital Assocoation.

215. OECD (2002) High Growth SMEs and Employment, Organization for Economic Cooperation and Development.

216. OECD, (2005), OECD SME and Entrepreneurship Outlook: 2005, OECD Paris, page 17.

217. OECD (2007), Eurostat – OECD Manual on Business Demography Statistics OECD Organization for Economic Cooperation and Development http://www.oecd.org/sdd/39974588.pdf

218. Ozmel, U., Reuer, J.J., & Gulati, R., (2013a) Signals across multiple networks how venture capital and alliance networks affect interorganizational collaboration. Acad Manag J 56:852–866

219. Ozmel, U., Robinson, D.T., & Stuart, T.E. (2013b) Strategic alliances, venture capital, and exit decisions in early stage high-tech firms. J Financ Econ 107:655–670

220. Parry, K. W. (2014). The new discourse of moral capitalism. In *Proceedings of the Developing Leadership Capability Conference* (pp. 1-1). Lancaster University.

221. Pava, M.L. & Krausz, J., (1996). The association between corporate social-responsibility and financial performance: The paradox of social cost. *Journal of business Ethics*, *15*(3), pp.321-357.

222. Phalippou, L., & Gottschalg, O. (2009). The Performance of Private Equity Funds. The Review of Financial Studies 22, no. 4: 1747-1776.

223. Phillips, R., (2003). *Stakeholder theory and organizational ethics*. Berrett-Koehler Publishers.

224. Pitchbook Benchmarks Private Markets As of Q4 2018, 2018, Pitchbook

225. Plant, C. (2017) The Narwhal List: Measuring the Financial Velocity of Canada's Leading Technology Companies. The Impact Centre, University of Toronto. p 5.

226. Preqin (2016) 2016 Preqin global private equity and venture capital report. https://www.preqin.com/docs/samples/2016-Preqin-Global-Private-Equity-and-Venture-Capital-Report-Sample_Pages.pdf. Accessed 15 June 2017

227. Preston, L. E., & Sapienza, H. J. (1990). Stakeholder management and corporate per- formance. Journal of Behavioral Economics, 19: 361–75.

228. Qian, W. & Xing, K., (2018). Linking environmental and financial performance for privately owned firms: Some evidence from Australia. *Journal of Small Business Management*, *56*(2), pp.330-347.

229. Quinn, R. E., & Cameron, K. (1983). Organizational life cycles and shifting criteria of effectiveness: Some preliminary evidence. *Management science*, *29*(1), 33-51.

230. Quinn, R.E. & Cameron, K., (1983). Organizational life cycles and shifting criteria of effectiveness: Some preliminary evidence. *Management Science*, 29(1), pp.33-51.

231. Radicchi, F., (2012). Universality, limits and predictability of gold-medal performances at the Olympic Games. *PloS one*, *7*(7).

232. Radicchi, F., Fortunato, S. & Castellano, C., (2008). Universality of citation distributions: Toward an objective measure of scientific impact. *Proceedings of the National Academy of Sciences*, *105*(45), pp.17268-17272.

233. Rappaport, A., (1986). *Creating shareholder value: the new standard for business performance*. Free press.

234. Rasmussen, C.C., Ladegård, G. & Korhonen-Sande, S., (2018). Growth Intentions and Board Composition in High-Growth Firms. *Journal of Small Business Management*, *56*(4), pp.601-617.

235. Ray, D.M. & Trupin, D.V., (1989). Crossnational comparison of entrepreneurs perceptions of success. Entrepreneurship & Regional Development, 1(1), pp.113-127.

236. Razmus, W., & Laguna, M., (2018). Dimensions of entrepreneurial success: A multilevel study on stakeholders of micro-enterprises. *Frontiers in psychology*, *9*, p.791.

237. Reijonen, H. & Komppula, R., (2007). Perception of success and its effect on small firm performance. *Journal of Small Business and Enterprise Development*, *14*(4), pp.689-701.

238. Ronstadt, R., (1982). Entrepreneurship. Dover, MA: Lord Publishing.

239. Root Martinez, V. (2021). A More Equitable Corporate Purpose.

240. Rotch, W., (1968). The Pattern of Success in Venture Capital Financing. Financial Analysts Journal 24, no. 5: 141-147.

241. Sagar, A. D., & Najam, A. (1998). The human development index: a critical review. *Ecological economics*, *25*(3), 249-264.

242. Sahlman, W.A., (1990) The structure and governance of venture-capital organizations. J Financ Econ 27:473–521

243. Santisteban, J., & Mauricio, D., (2017). Systematic literature review of critical success factors of information technology startups. *Academy of Entrepreneurship Journal*.

244. Santos, J.B., & Brito, L.A.L., (2012). Toward a subjective measurement model for firm performance. *BAR-Brazilian Administration Review*, *9*(SPE), pp.95-117.

245. Sapienza, H. J., (1992). When do venture capitalists add value? *Journal of Business Venturing*, 7: 9-27.

246. Sapienza, H.J., & Gupta, A.K., (1994). Impact of agency risks and task uncertainty on venture capitalisteCEO interaction. Academy of Management Journal 37, 1618e1632.

247. Sarkar, S., (2018). Grassroots entrepreneurs and social change at the bottom of the pyramid: the role of bricolage. *Entrepreneurship & Regional Development*, *30*(3-4), pp.421-449.

248. Sassmannshausen, S.P. & Volkmann, C., (2018). The scientometrics of social entrepreneurship and its establishment as an academic field. *Journal of Small Business Management*, *56*(2), pp.251-273.

249. Scheaf, D.J., Davis, B.C., Webb, J.W., Coombs, J.E., Borns, J., & Holloway, G., (2018). Signals' flexibility and interaction with visual cues: Insights from crowdfunding. *Journal of Business Venturing*, *33*(6), pp.720-741.

250. Scherer, A. G., & Patzer, M. (2011). Where is the theory in stakeholder theory? A meta-anal- ysis of the pluralism in stakeholder theory. In R. A. Phillips, Stakeholder theory: Impact and prospects: 140–62. Cheltenham: Edward Elgar Publishing Ltd.

251. Schierjott, I., Brennecke, J., & Rank, O.N., (2018). Entrepreneurial Attitudes as Drivers of Managers' Boundary-Spanning Knowledge Ties in the Context of High-Tech Clusters. *Journal of Small Business Management*, *56*(sup1), pp.108-131.

252. Schumpeter, J.A., & Redvers, O.P.I.E., (1934). *Theorie der wirtschaftlichen Entwicklung. The Theory of Economic Development. An inquiry into profits, capital, credit, interest, and the business cycle... Translated... by Redvers Opie*.

253. Scott, B. R., (1971). Stages of corporate development-Part 1 (Case No 9-371-294). *Boston, MA: Intercollegiate Case Clearinghouse*

254. Scott, M., & Bruce, R., (1987). Five stages of growth in small business. *Long Range Planning*, 20(3), pp.45-52.

255. Sensoy, B.A., Wang, Y., & Weisbach, M.S., (2014) Limited partner performance and the maturing of the private equity industry. J Financ Econ 112:320–343

256. Sexton, D. L., & N. B. Bowman-Upton (1991). Entrepreneurship: Creativity and Growth. New York: Macmillan.

257. Shane, S., & Venkataraman, S., (2000). The promise of entrepreneurship as a field of research. *Academy of management review*, *25*(1), pp.217-226.

258. Sharma, A. K., (2015). Venture Capitalists' Investment decision criteria for new ventures: A Review. *Procedia-Social and Behavioral Sciences*, *189*, 465-470.

259. Sharma, G., Beveridge, A.J., & Haigh, N., (2018). A configural framework of practice change for B corporations. *Journal of Business Venturing*, *33*(2), pp.207-224.

260. Sharma, P., & Chrisman, J.J., (1999) Toward a Reconciliation of the Definitional Issues in the Field of Corporate Entrepreneurship, (1999) Entrepreneurship Theory and Practice

261. Shepherd, D. & Wiklund, J. (2009). Are we comparing apples with apples or apples with oranges? Appropriateness of knowledge accumulation across growth studies. Entrepreneurship Theory and Practice, 33, 105–123.

262. Shils, E., (1982). Commentary on internal corporate entrepreneurship. *Encyclopedia of entrepreneurship. Englewood Cliffs, NJ: Prentice-Hall*, pp.224-229.

263. Simas, R., (1987). *The Musicals No One Came to See: A Guidebook to Four Decades of Musical-comedy Casualties on Broadway, Off-Broadway, and in Out-of-town Try-out, 1943-1983* (Vol. 563). New York: Garland Pub.

264. Siqueira, A.C.O., Guenster, N., Vanacker, T., & Crucke, S., (2018). A longitudinal comparison of capital structure between young for-profit social and commercial enterprises. *Journal of Business Venturing*, *33*(2), pp.225-240.

265. Smith, K.G., Mitchell, T.R., & Summer, C.E., (1985). Top level management priorities in different stages of the organizational life cycle. *Academy of Management Journal*, 28(4), pp.799-820.

266. Sohl, J. (2015). *The angel investor market in 2015: A buyer's market*. Durham: Center for Venture Research, University of New Hampshire.

267. Sorensen, M., Wang, N., Yang, J., (2014) Valuing private equity. Rev Financ Stud 27:1977–2021

268. Spiegel, O., Abbassi, P., Zylka, M.P., Schlagwein, D., Fischbach, K., & Schoder, D., (2016). Business model development, founders' social capital and the success of early stage internet start-ups: a mixed-method study. *Information Systems Journal*, *26*(5), pp.421-449.

269. Spulber, D. F. (2009). The theory of the firm: Microeconomics with endogenous entrepreneurs, firms, markets, and organizations. Cambridge University Press

270. St-Pierre, J., Sakka, O., & Bahri, M., (2018). External Financing, Export Intensity and Inter-Organizational Collaborations: Evidence from Canadian SMEs. *Journal of Small Business Management*, *56*(sup1), pp.68-87.

271. Stam, E., & Wennberg, K. (2009). The roles of R&D in new firm growth. Small Business Economics, 33, 7789

272. Stam, E., Hartog, C., Van Stel, A., & Thurik, R. (2011). Ambitious entrepreneurship, highgrowth firms and macroeconomic growth. In M. Minniti (Ed.), The dynamics of entrepreneurship: Evidence from the global entrepreneurship monitor data (pp. 231250). Oxford, UK: Oxford University Press.

273. Stevenson, H. H., & Jarillo, J. C. (2007). A paradigm of entrepreneurship: Entrepreneurial management. In *Entrepreneurship* (pp. 155-170). Springer, Berlin, Heidelberg.

274. Storey, J., (1994). An introductory guide to cultural theory and popular culture.

275. Stout, L.A. (2012), The Shareholder Value Myth: How Putting Shareholders First Harms Investors, Corporations, and the Public, San Francisco, CA: Berrett-Koehler Publishers; http://www.aspresolver.com/aspresolver.asp?BIZP;2360233.

276. Strese, S., Gebhard, P., Feierabend, D., & Brettel, M., (2018). Entrepreneurs' perceived exit performance: Conceptualization and scale development. *Journal of Business Venturing*, *33*(3), pp.351-370.

277. Surepayroll (2012).Five Ways to Measure Success in Your Small Business. Retrieved March 12, 2012, from http://www.surepayroll.com/articles/small-business/how-to-measure-success-of-small-busine ss.asp,

278. Tasavori, M., Kwong, C., & Pruthi, S., (2018.) Resource bricolage and growth of product and market scope in social enterprises. *Entrepreneurship & Regional Development*, *30*(3-4), pp.336-361.

279. Teece, D. J. (2019). A capability theory of the firm: an economics and (strategic) management perspective. *New Zealand Economic Papers*, *53*(1), 1-43.

280. Tewari, PS; Skilling, D; Kumar, P; Wu, Z; (2013) Competitive Small and Medium Enterprises, A diagnostic to help design smart SME policy, The World Bank.

281. Tian, X., (2011). The causes and consequences of venture capital stage financing. *Journal of Financial Economics*, 101: 132-159.

282. Torbert, W. R. (1974). Pre-bureaucratic and post-bureaucratic stages of organization development. *Interpersonal development*, *5*(1), 1-25.

283. Tracy, S. (2011). Accelerating Job Creation in America: The Promise of High Impact Companies, Research report commissioned by theUSSmall Business Administration, No. 381

284. Tunguz, T. www.tomtunguz.com

285. Tykvová, T., (2018). Venture capital and private equity financing: an overview of recent literature and an agenda for future research. *Journal of Business Economics*, *88*(3-4), pp.325-362.

286. UK 2013, SMEs: the Key Enablers of Business Success and the Economic Rationale for Government Intervention, BIS Analysis Paper Number 2, UK Department for Business Innovation and Skills.

287. United Nations, Sustainable Development Goals https://sdgs.un.org/goals/goal8

288. Uzzi, B., (2008). A social network's changing statistical properties and the quality of human innovation. *Journal of Physics A: Mathematical and Theoretical*, *41*(22), p.224023.

289. Van de Rijt, A., Shor, E., Ward, C. & Skiena, S., (2013). Only 15 minutes? The social stratification of fame in printed media. *American Sociological Review*, *78*(2), pp.266-289.

290. Venkataraman, S., (2002). Stakeholder value equilibration and the entrepreneurial process. *The Ruffin Series of the Society for Business Ethics*, *3*, pp.45-57.

291. Venkataraman, S., 1997. *The distinctive domain of entrepreneurship research* (Vol. 3, pp. 119-38).

292. Venkatraman, N., & Ramanujam, V. (1986). Measurement of business performance in strategy research: a comparison of approaches. Academy of Management Review, 1(4), 801-814.

293. Verheul, I., & Van Mil, L. (2011). What determines the growth ambition of Dutch early-stage entrepreneurs? International Journal of Entrepreneurial Venturing, 3, 183207

294. Vernay, A.L., D'Ippolito, B. & Pinkse, J., (2018). Can the government create a vibrant cluster? Understanding the impact of cluster policy on the development of a cluster. *Entrepreneurship & Regional Development*, *30*(7-8), pp.901-919.

295. Vesper, K. H. (1990). New Venture Strategies. Englewood Cliffs, NJ: Prentice-Hall.

296. Vu, D.A., Bui, Q.H. & Pham, T.Q., (2012). Critical success factors for Vietnamese software companies: A framework for investigation. *development*, *3*(2).

297. Wach, D., Stephan, U. & Gorgievski, M., (2016). More than money: Developing an integrative multi-factorial measure of entrepreneurial success. *International Small Business Journal*, *34*(8), pp.1098-1121.

298. Waddock, S.A. & Graves, S.B., (1997). The corporate social performance–financial performance link. *Strategic management journal*, *18*(4), pp.303-319.

299. Walker, E. & Brown, A., (2004). What success factors are important to small business owners?. *International small business journal*, *22*(6), pp.577-594.

300. Wallace, J.S., (2003). Value maximization and stakeholder theory: Compatible or not?. *Journal of Applied Corporate Finance*, *15*(3), pp.120-127.

301. Wallmeroth, J., Wirtz, P., & Groh, A. P. (2018). Venture capital, angel financing, and crowdfunding of entrepreneurial ventures: A literature review. *Foundations and Trends® in Entrepreneurship*, *14*(1), 1-129.

302. Walsh, J.P., (2005). Book review essay: Taking stock of stakeholder Management.

303. Walthoff-Borm, X., Schwienbacher, A. and Vanacker, T., 2018. Equity crowdfunding: First resort or last resort?. *Journal of Business Venturing*, *33*(4), pp.513-533.

304. Warnick, B.J., Murnieks, C.Y., McMullen, J.S. & Brooks, W.T., (2018). Passion for entrepreneurship or passion for the product? A conjoint analysis of angel and VC decision-making. *Journal of Business Venturing*, *33*(3), pp.315-332.

305. Weinzimmer, L.G., Nystrom, P.C., & Freeman, S.J. (1998). Measuring organizational growth: Issues, consequences and guidelines. Journal of Management, 24, 235–263.

306. Wijbenga, F. H., Postma, T. J., & Stratling, R. (2007). The influence of the venture capitalist's governance activities on the entrepreneurial firm's control systems and performance. *Entrepreneurship Theory and Practice*, 31: 257-277.

307. Wikipedia – eToys, https://en.wikipedia.org/wiki/EToys.com

308. Wikipedia – Pets.com, https://en.wikipedia.org/wiki/Pets.com

309. Wikipedia – Webvan, https://en.wikipedia.org/wiki/Webvan

310. Wiklund, J., Patzelt, H., & Shepherd, D.A. (2009). Building an integrative model of small business growth. Small Business Economics, 32, 351–374.

311. Williamson, O. E. (1985). The economic institutions of capitalism. New York: Free Press.

312. Wong, W.K., Cheung, H.M. and Venuvinod, P.K., 2005. Assessing the Growth Potential of High-Technology Start-Ups: An Exploratory Study from Hong Kong. *Journal of Small Business & Entrepreneurship*, *18*(4), pp.453-470.

313. Wu, B.H. and Mazur, M., (2018). Managerial Incentives and Investment Policy in Family Firms: Evidence from a Structural Analysis. *Journal of Small Business Management*, *56*(4), pp.618-657.

314. Xie, X., O'neill, H. & Tan, J., (2018). Post-Entry Diversification in a Shifting Institutional Environment: How Strategy Patterns Differ for De Novo and Corporate Spin-Off Ventures. *Journal of Small Business Management*, *56*(sup1), pp.281-296.

315. Yoshikawa, T., Phan, P. H., & Linton, J. (2004). The relationship between governance structure and risk management approaches in Japanese venture capital firms. *Journal of Business Venturing*, 19: 831-849.

316. Yucesoy, B. & Barabási, A.L., (2016). Untangling performance from success. *EPJ Data Science*, *5*(1), p.17.

317. Yucesoy, B., Wang, X., Huang, J. & Barabási, A.L., (2018). Success in books: a big data approach to bestsellers. *EPJ Data Science*, *7*(1), p.7.

318. Zammuto, R. F. (1984). A comparison of multiple constituency models of organizational effectiveness. Academy of Management Review, 9(4), 606-616. doi:10.2307/258484

319. Zhang, Z. &d Reay, T., (2018). Managing the Yin and Yang of family capital: a study of Chinese immigrant entrepreneurs. *Entrepreneurship & Regional Development*, *30*(7-8), pp.722-748.

320. Zider, B., (1998). How venture capital works. *Harvard business review*, *76*(6), pp.131-139.