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Venture Capital Vs. Trade Credit Financing: Is There A Bias In Favor Of Venture Capital And What Is The Impact On Students?

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VENTURE CAPITAL VS. TRADE CREDIT FINANCING: IS THERE A BIAS IN FAVOR OF VENTURE CAPITAL AND WHAT IS THE IMPACT ON STUDENTS?

by

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This dissertation, submitted by Thomas Allen Clement in partial fulfillment of the requirements for the Degree of Doctor of Philosophy from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.

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Date

PERMISSION

Title	Venture Capital vs. Trade Credit Financing: Is There a Bias in Favor of Venture Capital and what is the Impact on Students?
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Thomas Allen Clement
November 1, 2013

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ABSTRACT

The purpose of this dissertation was to examine whether entrepreneurship education demonstrates a bias favoring venture capital (VC) financing while marginalizing trade credit financing. The effect of this perceived bias was also explored to determine the impact on students studying entrepreneurship.

In the history of entrepreneurial studies, literature revealed VC was a relatively new and rare source of financing that impacted a very small percentage of entrepreneurial ventures. In contrast, trade credit existed for thousands of years and was shown to benefit virtually every type of business model, from start-up to maturity.

The research questions posed were addressed using two methods: textbook analysis and survey instrument. Data were collected through an analysis (N=13) of entrepreneurship and business textbooks quantifying the coverage of trade credit versus VC. A survey instrument distributed to a sample (N=126) of entrepreneurship students at 11four-year U.S. universities asked students about their exposure to and understanding of VC and trade credit.

Analysis of the data revealed a significant bias existed in favor of VC in textbooks as well as in classroom content, while trade credit financing was largely overlooked. As a result, students indicated they were heavily exposed to VC and unfamiliar with trade credit. The data also revealed that despite significant exposure to the term "venture capital" in curriculum, students only possessed a basic understanding of how VC actually

worked. The primary conclusion was that entrepreneurship educators were doing an inadequate job of informing students as to the practical finance options available to them should they choose to pursue a venture at some point in the future.

CHAPTER I

INTRODUCTION

Trade credit, also known as supplier credit or trade payables, is an important and highly utilized source of financing for businesses, in existence for literally thousands of years (Cheng & Pike, 2003; Christie & Bracuti, 1981; Petersen & Rajan, 1997; Wilner, 2000). Venture capital (VC), on the other hand, is a form of private equity financing primarily focused on a very narrow band of high-tech, fast-growing business models in a limited geographic area (Bygrave & Zacharakis, 2008; Lerner, Leamon & Hardymon, 2012; Metrick & Yasuda, 2011). Entrepreneurship education appears to favor VC even though a relatively small percentage of actual companies are a match with that type of financing (Berger & Udell, 1998; Bygrave & Zacharakis, 2008; Lerner et al., 2012; Metrick & Yasuda, 2011). In contrast, trade credit has an impact, at some point, on virtually every entrepreneurial venture, regardless of industry, size, or scale (Berger & Udell, 1998; Petersen & Rajan, 1997; Wilner, 2000). This work will focus on whether entrepreneurship education adequately recognizes trade credit or chooses instead to concentrate a majority of time and resources on VC.

The research presented here first examines whether there is evidence that entrepreneurship education marginalizes the use of trade credit financing in favor of the more complex and very limited use of VC. Also addressed here is how a proposed bias in favor of VC may be impacting student understanding of both trade credit and VC.

Methods included gathering data from higher education entrepreneurship and business textbooks (N=13), inventorying the physical space dedicated to trade credit and VC. Next, a sampling of students (N=126) enrolled in upper-division entrepreneurship courses at 11U.S. universities participated in a survey measuring exposure to and understanding of trade credit and VC in the classroom. The data from the textbook sampling as well as the surveys were used to address each of the research questions.

Background Information

This paper focuses on two methods entrepreneurs use to raise needed financial capital (funds) for their businesses: trade credit and venture capital. In general, capital financing can be classified three ways: debt, equity, and bootstrapping (Rogers, 2009; Barringer & Ireland, 2012; Kuratko, 2014). Debt financing involves borrowing money or some other form of asset from a third party with a promise to pay back the value of the asset plus, in some cases, interest (Kuratko, 2014; Rogers, 2009). Equity financing encompasses raising capital from a third party in exchange for an ownership stake (Kuratko, 2014, Rogers, 2009). Finally, bootstrapping is raising capital for a venture through non-traditional sources such as partnering; trade and barter; and collection of prepayments from customers (Bhide, 1992; Kuratko, 2014; Van Auken, 2004; Winborg & Landström, 2001).

Trade credit financing, or the ability to acquire goods and services without having to immediately pay, is the largest source of short-term debt financing in the United States (Wilner, 2000; National Small Business Association, 2008; Rogers, 2009). Evidence shows that trade credit has been used since about 1000 BC (Cheng & Pike, 2003; Christie & Bracuti, 1981) and the amount of trade credit outstanding is, historically, double that of

other short-term credit sources (Internal Revenue Service, 1997). Entire multinational firms are founded and built on the availability and effective use of trade credit (D. Porter, personal interview, 2010; M. Reimer, presentation to ENTR 405, 2012; Rao, 2010). Certain scholars also consider trade credit financing a form of bootstrapping, because it often involves the leveraging of relationships and networking between entrepreneurs and their suppliers of goods and services (Bosse & Arnold, 2010; Winborg & Landström, 2001).

VC, on the other hand, is a type of private equity financing in which outside investors agree to finance a venture in exchange for a percentage of ownership (Lerner et al., 2012; Metrick & Yasuda, 2011). Research data show, overall, that VC impacts less than 3% of all entrepreneurial ventures (Berger & Udell, 1998; Rogers, 2009). The limited use of VC has primarily to do with the cost, narrow fit with business models, and geography (Lerner et al., 2012; Metrick & Yasuda, 2011). VC is also relatively young, having only existed since the 1940s and having only seen widespread use for about the last 30 years (Lerner et al., 2012; Metrick & Yasuda, 2011).

In total dollars financed, trade credit accounts for almost three times the amount provided by private equity investors like venture capitalists (Lerner et al., 2012; Ng, Smith, & Smith, 1999; Wilner, 2000). Yet, available resources for entrepreneurship students, like textbooks, appear to devote an unequal amount of time discussing VC and private equity financing, at the expense of more widely used finance sources like trade credit. As a result, students may be presented with financing options in their education that do not align with the realities of mainstream business, especially at the start-up and small business levels.

Statement of the Problem

The problem addressed here is one of connecting education theory to everyday business practice, guiding students in the classroom on what a majority of entrepreneurs typically face. The intention of studying this problem is not to marginalize VC but, rather, to move toward an educational paradigm where VC is not necessarily the centerpiece of entrepreneurial finance curriculum in the United States.

This investigation documents evidence from the literature showing that a majority of new businesses launched in the United States are small, low-growth, low-innovation firms where the entrepreneur literally is the company. Findings that show what a majority of small businesses resemble run completely counter to what venture capitalists seek in terms of innovation, size, and growth in potential investments. There is evidence, however, that students are regularly overexposed to private equity and VC financing in entrepreneurship education. Trade credit, on the other hand, a powerful and relatively inexpensive form of financing virtually any firm can use, receives scant attention in entrepreneurship education.

Purpose of the Study

The purpose of this study is to examine whether entrepreneurship education textbooks and courses taught in five regions of the United States present students with real, practical entrepreneurial finance options. Specifically, does entrepreneurial education in these programs demonstrate a bias in favor of VC financing at the expense of other more widely used and practical finance methods like trade credit? This research also looks at how this bias affects entrepreneurship students' exposure to and understanding of VC and trade credit.

Theoretical Framework

The theoretical framework for this dissertation is rooted in economic, epistemological, and ecological theories. An explanation for why students appear to be exposed more often to VC than trade credit financing can be explained by the theory of scarcity as demonstrated in numerous examples in the literature (Boyes & Melvin, 2011; Gierl & Huettl, 2010; Lynn, 1992; Smith, 1876/1937, p. 172; Veblen, 1899; Verhallen & Robben, 1994, 1995). In parallel with these studies, the relative unavailability of VC and the high-return, high-growth companies it is associated with may cause entrepreneurship educators to covet VC. Economists and psychologists have demonstrated, over time, that society occasionally places a higher value on goods because of their relative unavailability and prestige. VC financing could meet a similar level of esteem for those involved in entrepreneurship education.

Despite an overexposure to VC in texts and the classroom, students may not demonstrate an understanding of VC beyond rudimentary information and facts. The gap between exposure and understanding can be explained, in part, by the work of Bertrand Russell (1910) and his theory on knowledge by acquaintance versus knowledge by description. According to this theory, knowledge by description implies that just because people regularly hear about a specific subject, after while they assume they have knowledge and understanding of that topic. Russell (1910) argues that true knowledge can only be obtained through a direct acquaintance or experience with a subject.

Ultimately, this dissertation examines the disconnect between theory and practice which leads to a lack of understanding for students of the two financing options available to entrepreneurs. Developmental psychologist Urie Bronfenbrenner (1979) proposed his

Ecological Systems Theory to explain the transformation and possible confusion between theory and practice. His theory espouses that an individual's development is based on the influence of internal and external environmental systems through which a person passes as he/she matures and grows, like frameworks of influence. In the context of this work, the internal microsystem is represented by the school or entrepreneurship program; the external macrosystem is the actual business world where the student ends up (Bronfenbrenner, 1979). The perceived incongruity between what is taught in the classroom and what the student experiences in real practice can be explained through Bronfenbrenner's (1979) work.

Research Questions

The research questions addressed here of trade credit and VC financing in higher education are as follows:

1. Does entrepreneurship education demonstrate a bias in favor of VC financing?
2. Is trade credit financing largely ignored by entrepreneurship education?
3. Do students demonstrate an understanding of VC?
4. Do students demonstrate an understanding of trade credit?
5. What is the relationship between student exposure to and understanding of VC?
6. What is the relationship between student exposure to and understanding of trade credit?

Importance of the Study

The importance of this study is to document whether an incongruity exists between what entrepreneurship students hear in the classroom or read in texts and what actually occurs in the practice of day-to-day small business. The results could spark a

conversation that leads to changes in entrepreneurship education, more closely aligning the classroom message with real business practice.

Delimitations

The findings of this research are limited to the understanding and exposure to content of entrepreneurship students at the 11 U.S. universities examined here. In addition, although trade credit and VC exist to varying degrees outside the United States, the context here is framed by the practices of the U.S. business environment. This examination is limited, in part, by the content of courses taught in the specific entrepreneurship programs at the universities where data were collected. In addition, there was no clear evidence found in the literature as to why VC grew to dominate entrepreneurial education, and this lack of explanation creates a potential avenue for further research.

The theories put forth here were posited as a potential argument for why a bias toward VC may exist in entrepreneurial education and how that bias could be affecting the future success of students. Finally, this work was limited by the textbooks surveyed. Even though an attempt was made to examine a wide variety of business and entrepreneurship textbooks from different authors, publishers, and perspectives, no assumption was made that these texts were universally accepted or adopted by a majority of universities. Institutions could have the option of choosing trade titles, using no book/text at all, and/or generating their own materials. The inclusion of evidence from a textbook analysis evokes a fair question: What substantiation exists in the literature to demonstrate that instructors rely on textbooks to help drive curriculum and course design? While it is possible that instructors could develop and use their own materials

without the aid of a textbook, as the literature shows, texts still have a significant influence on overall course design and curriculum.

CHAPTER II

REVIEW OF LITERATURE

This review of literature is intended to accomplish several goals. First, this chapter will begin by framing entrepreneurial education through a brief chronological history of the discipline within higher education. Next, statistics and data will illustrate a picture of entrepreneurship in the United States that leads to a discussion of sources of financial capital for business. The two specific sources of capital compared and studied in this paper, VC and trade credit will be defined and discussed in terms of function, availability, acquisition, usage, context, and implication for entrepreneurial ventures. Contextually, VC and trade credit can be viewed and studied from two different perspectives: the entrepreneurs and the lenders/investors. Both VC and trade credit will be addressed here from the position of the entrepreneur. The literature reviewed, therefore, deals primarily with trade credit and VC data impacting entrepreneurs and their businesses. Evidence from the literature is discussed with regard to the influence textbooks have on course and curriculum development. Finally, the theoretical frameworks used are explained and synthesized. This review of literature is not only designed to demonstrate a need for this research, but to provide important background and the definitions necessary to frame the rationales, methods, and conclusions reached.

Entrepreneurship Education

The environment in which entrepreneurship education exists traces its roots back

to the University of Pennsylvania's Wharton School of Business, the first formal business school founded in 1881 (Thelin, 2004; Wharton, 2013). Despite business schools dating back to the 1800s, the history of scholarly work in entrepreneurship is relatively short compared to accounting and management (Katz, 2003; Napier, 2001; Pindur, Rogers, & Kim, 1995). The following is a concise overview of the last 70 years of entrepreneurship's evolving place in the academy.

The formal definition of entrepreneur is taken from the French word "entreprendre," meaning "to undertake" (Kuratko, 2014). Modern texts generally regard an entrepreneur as someone assuming (undertaking) the risks of launching some sort of business venture or innovative endeavor (Kuratko, 2014). Even though entrepreneurial behavior and business activity had existed for thousands of years, Harvard University economist Dr. Joseph Schumpeter offered some of the first scholarly theories of entrepreneurship in the 1930s. In his seminal book, The Theory of Economic Development (1934), Schumpeter explores the phenomenon of entrepreneurship and introduces the concept of creative destruction, where industries eventually give way to new innovation and market substitutes. In the timeframe of Schumpeter's (1934) work on entrepreneurship, big industrial companies were viewed as purveyors of innovation, because of economies of scale and their ability to dominate markets. Large firms, therefore, exerted a great deal of influence over stakeholders, which, in turn, led to their ability to innovate through control of coveted resources and technology (Schumpeter, 1934). As a result of Schumpeter's efforts, the study of entrepreneurial behavior began in earnest and has gradually earned respect as one of the drivers of the modern market economy (Katz, 2003).

In 1947, over a decade after Schumpeter's initial work, Harvard offered what is widely regarded as the very first college course in entrepreneurship (Katz, 2003). According to Katz (2003), the new entrepreneurship course was considered successful at the time, attracting over 30% of Harvard's MBA students. Schumpeter's research and theories, along with Harvard's move to initiate entrepreneurial coursework, laid the foundation for the modern study of entrepreneurship in higher education.

As the history of entrepreneurial education advanced, a gradual shift in the focus of research occurred. Where Schumpeter (1934) viewed large businesses as the chief catalyst of entrepreneurial activity, as time, economic growth, and efficiencies advanced, small business and individual entrepreneurs began to earn recognition. Similarly, as modern industry matured, a shift began to take place in entrepreneurial education toward the study of solo entrepreneurs. Research recognized the innovations individual entrepreneurs could bring to market, in large part because of their ability to think creatively and work independently without the constraints of a big corporate environment (Katz, 2003).

As part of the individualism of entrepreneurial education, around 1950 and throughout the decade into the 1960s, the terms "economic development" and "economic growth" saw widespread use in academic literature with regard to entrepreneurship and a new focus on individualized, community-based entrepreneurial activity (DeForest, 1965; Hoselitz, 1952; Leibenstein, 1968; Schloss, 1968). Throughout this time period, research began to focus on entrepreneurs in a small business context responsible for innovation and job creation in economic models (Baumol, 1969). The individualization of

entrepreneurship continued throughout the 1970s and to the present and made the pursuit of ideas and the capital to fund those ideas a more intimate effort (Katz, 2003).

More recent research marks the continued transformation toward individualized entrepreneurial behavior. Audretsch (2009) notes that, in the 1990s, power in American business in the form of job creation, growth, and innovation shifted even further from the hands of large corporations (the heart of Schumpeter's original theories) to small business and individual entrepreneurs. Audretsch argues that America's ability to compete on a global level is restored by individualized entrepreneurialism, referencing the bureaucratic paralysis many large companies experience, resulting in their inability to effectively innovate and act quickly enough to keep pace with rising competition.

Chronicling the entire scope of entrepreneurial education, Katz (2003) offers a comprehensive time line of the growth and popularity of entrepreneurship education in America. His research shows that, at the turn of the 21st century in the United States, over 2200 entrepreneurship classes existed at over 1600 institutions of higher education. Additionally, over 250 endowed positions in entrepreneurship have been funded in programs all over the United States. Scholars have the opportunity to publish in 44 different academic journals specifically tailored to entrepreneurial topics, and for entrepreneurs themselves, over 100 entrepreneurship or incubator centers exist at universities across the country (Katz, 2003).

The literature confirms that there is still considerable debate in the academy about educating entrepreneurs (Kantor, 1988; Henry, Hill & Leitch, 2005a, 2005b). In the context of modern higher education, however, scholars, curricula, and course descriptions from noted programs generally regard most aspects of entrepreneurial behavior as a

learnable, manageable process of thinking, innovation, and creativity (Barringer & Ireland, 2012; Kuratko, 2014; Oklahoma State Entrepreneurship, 2011; "Top entrepreneurial colleges," 2011). The widespread acceptance of entrepreneurial education helps to dispel the notion that successful entrepreneurs are born with some special set of attributes or a gene giving them an edge over other individuals (Kuratko, 2005, 2014). Furthermore, entrepreneurship is not simply about starting a business venture. Instead, the thinking and creative process behind entrepreneurship can also be applied in existing businesses (intrapreneurship) and to solve challenging social problems (social entrepreneurship) (Barringer & Ireland, 2012; Kuratko, 2014).

Although entrepreneurship scholars still work to gain respect and acceptance from the academic community (Katz, 2008; Kuratko, 2005), the popularity and growth of new programs demonstrate interest and desire for inclusion in higher education (Katz, 2003). This brief history of entrepreneurial education sets the stage and defines the environment in which the students surveyed for this work learn about the practice, theories, and processes of entrepreneurship in the U.S.

U.S. Entrepreneurship

In contrast to formal definitions of entrepreneurship, Kuratko (2014) presents a cliché of what many people assume the modern U.S. entrepreneur to be. He describes a highly educated engineer who, along with a similarly educated friend, develops a technologically complex product attracting millions of customers, millions of dollars in outside equity capital, and massive sales growth that facilitates an early retirement for the founders. With a model of individualized, small business-oriented entrepreneurship and

the growth in academic programs across the United States, Shane (2008) presents a contrasting picture of what U.S. entrepreneurship really looks like.

Although there is evidence and testimonials showing that a college business school education is of benefit to entrepreneurs (Katz, 2003; Rogers, 2009; Shane, 2008), statistics on U.S. entrepreneurs are somewhat inconsistent. Entrepreneurs generally pursue business opportunities in three primary sectors or some combination of them: service businesses, merchandising of goods (retail or wholesale), and manufacturing of goods (Kuratko, 2014). No matter the sector of business, as previously illustrated by Kuratko (2014), many view entrepreneurs as the ultimate innovators, exploiting opportunities and making money with new and exciting products or services.

In reality, the majority of new businesses launched in the United States have, historically, very little innovation or novelty (Reynolds, 2005). In fact, among the highest-growth start-up companies in the United States, only about 10% sell something unique that no one else offers, with most simply duplicating existing business models or ideas (Bhide, 2000; Shane, 2008). Further, less than 10% of start-ups ever intend to do anything innovative enough to have any measurable impact on the market in which they do business (Reynolds, 2007; Shane 2008). In other words, most small businesses simply replicate a low-innovation model originally devised by another entrepreneur.

Even with the popularity of entrepreneurial education, Shane (2008) and Kuratko (2014) point out that most new ventures are started by people in their 40s or older. People have a tendency to launch start-up companies when they are out of work, dissatisfied with their current job, or in some cases, simply bored, an example being a

stay-at-home mom whose children are either out of the house or enrolled full-time in school (Kuratko, 2014; Shane, 2008).

In addition to demographic data, research also shows that only about a quarter of start-up businesses end up employing anyone besides the owner (Bregger, 1996; Shane 2008). Start-ups that do have employees typically begin with less than four on average (Knaup, 2005; Shane 2008). Studies demonstrate that the historical average revenue (sales) of small, self-employed firms is also very low, usually under $100,000 a year (Bitler, Moskowitz & Vissing-Jørgensen, 2005; Shane, 2008). Even with data showing a modest beginning for many small businesses, over 80% of entrepreneurs report they have little intention of achieving measurable growth beyond the organic growth experienced in the first few years of a typical venture (Van Gelderen, Thurik, & Bosma, 2006; Shane, 2008). In fact, many business owners appear happy to stay roughly the same size forever (Van Gelderen, Thurik, & Bosma, 2006; Shane, 2008).

These statistics on U.S. entrepreneurs appear to indicate that much of their intent is still a product of necessity, income replacement, and in some cases, merely survival. More importantly, this information shows that a majority of entrepreneurial ventures do not seek to produce highly innovative products or services or to develop a rapidly growing venture. The demographics, innovation, and growth chronicled here play an important role as it relates to VC financing, because it appears that many more businesses align with trade credit financing than VC. Much of the misconception involving the realities of entrepreneurial finance, therefore, appears to stem from information delivered through textbooks and in the classroom.

Textbooks and Course Curriculum

Ornstein (1994) states that "textbooks have come to drive the curriculum" (p. 70). Ornstein (1994) also argues that reliance on textbooks in curriculum development is a perpetuation, because many teachers are also educated and guided by the textbook. This work also makes the case that despite superior education, modern teachers are not trained properly and do not have adequate time to develop new curriculum and, therefore, depend heavily on texts to provide course content (Ornstein, 1994).

Similarly, Kauffman, Moore-Johnson, Kardos, Liu, & Peske (2002) find that reliance on textbooks in course or curriculum development is often a result of desperation on the part of teachers lacking adequate tools to start with. While Lattuca and Stark (2009) argue that textbooks are "cultural artifacts" (p. 10), they recognize that many higher education faculties rely on textbooks for organization and sequencing of a course based on, for example, a table of contents. The reliance on textbooks demonstrated in this literature helps support the examination of text content, especially as it relates to sources and types of capital for entrepreneurs.

Capital

Central to the debate here is whether VC and trade credit are receiving unbalanced coverage in textbooks and curriculum. Depending on context or academic discipline, different definitions of capital exist in relation to business and economics. From an entrepreneurial and small business perspective, however, capital represents assets (cash, property, equipment, etc.) that must be contributed by entrepreneurs or raised from third parties in order to start a business and generate revenue (sales) (Brue & McConnell, 2007; Horngren, Harrison, & Oliver, 2012).

For the entrepreneur seeking capital from a third party, capital financing comes into play. There are three common classifications of capital financing defined by entrepreneurship materials: debt, equity, and bootstrapping (Rogers, 2009; Barringer & Ireland, 2012; Kuratko, 2014). Ranking sources of capital financing, the entrepreneur's own money (27.1%), and bank loans (19.9%) are most popular; followed by trade credit (17%), other debt (15.4%), and investments from friends and family (13.2%). Angel investing (4.9%), VC (2.4%), and credit cards (2%) all rank near the bottom by a significant margin (Cole & Wolken, 1995; Rogers, 2009). Debt, therefore, ranks as one of the most common sources of capital financing used by entrepreneurs.

Debt Financing

The source of capital studied here known as trade credit is classified as a source of debt financing (Rogers, 2009; Kuratko, 2014). Raising capital through debt financing involves borrowing money or some other asset(s) in exchange for a promise to pay plus, in many cases, additional cost in the form of interest (Kuratko, 2014). Interest is a cost of borrowing and results in an expense to the entrepreneur, impacting the profitability of the venture (Weygandt, Kimmel, & Kieso, 2012). In some cases, entrepreneurs must also pledge a personal asset as collateral or sign a personal guarantee to secure debt financing (Rogers, 2009). Besides trade credit, other sources of debt include traditional bank or government (e.g: Small Business Administration) loans; loans from family or friends; credit cards; and in some cases, early stage loans of seed money from wealthy individual investors also known as "angels" (Rogers, 2009; Kuratko, 2014).

Positive aspects of debt include the fact that entrepreneurs do not relinquish ownership of the venture to the lender; the cost of debt (interest) is relatively low; the

entrepreneur can write off the cost of the debt (interest) at tax time; and the terms and conditions of debt are clearly spelled out ahead of time, allowing for planning of payments and other obligations (Rogers, 2009). Negatives of debt include the need for collateral or personal guarantees, the ability of lenders to force bankruptcy on a venture, and loan payments coming due without regard to sales or profitability of a firm (Rogers, 2009). Additionally, in the event of a liquidation, once company assets are sold, the next immediate step is to pay liabilities (debt), which minimizes some of the risk to lenders and helps explain the relatively low cost of debt (Weygandt et al., 2012). Depending on the business model or the amount of funds needed, debt may not be the most appropriate source of financing, leaving entrepreneurs to seek other avenues like equity investors.

Equity Financing

Occupying a different position on a company's balance sheet than debt, raising capital through equity financing like VC, results in receiving needed funding in exchange for an ownership percentage in the company (Kuratko, 2014). As opposed to debt, no promise to pay back funds exists, so the only way equity investor's benefit is if a company profits, increasing the value of the ownership stake to the investor (Rogers, 2009). In the event of liquidation, equity holders, including founders, are the last to get paid, assuming any money exists after debt is serviced (Weygandt et al., 2012).

The profit and growth expectations, coupled with the lack of any payback guarantee, make equity investing extremely risky (Rogers, 2009). To compensate for that risk, equity-backed firms are typically expected to generate at least 20%–50% annual returns to investors (Rogers, 2009). Returns of that caliber require a company to increase in value multiple times over a 2–8-year timeframe, necessitating extremely high growth

compared to an average small business. Companies achieving a level of growth benefiting equity investors are often referred to as "gazelles" (Kuratko, 2014). Gazelles start off with about $1 million in sales revenue and achieve an average of 20% growth or more each year over a 4–5-year period, thus doubling in size in about 5 years (Kuratko, 2014).

Rogers (2009) describes the positives and negatives of equity financing. Benefits for entrepreneurs include no collateral or personal guarantees, no set payment schedules, no forced bankruptcies, and repayment is based almost entirely on profit and growth. Negative aspects of equity include the necessity to take on a partner (additional investors), the relatively high cost (explained later), and the lack of tax write-offs of expenses like interest in debt financing. Sources of equity financing include investments from family and friends; VC; angel investors; and offering shares of a company for sale to the public through an initial public offering (IPO) (Rogers, 2009). Entrepreneurs not qualifying for debt and unattractive to equity investors have little choice but to turn to their own resources or ingenuity, a capital source now referred to as "bootstrapping."

Bootstrap Financing

The third source of capital for entrepreneurs is generated through a concept known as bootstrapping or bootstrap financing. Bootstrapping constitutes raising capital for a venture without the use of traditional third-party sources and is based purely on the means and resourcefulness of entrepreneurs (Bhide, 1992; Kuratko, 2014; Van Auken, 2004; Winborg & Landström, 2001). Popular examples of bootstrapping include acquisition or borrowing of used equipment and fixtures, sharing space with another

business, trade and barter, leveraging relationships, and collecting prepayments from customers (Kuratko, 2014; Winborg & Landström, 2001).

Trade credit, although technically a source of debt, is also considered by some scholars a source of bootstrapping. Trade credit qualifies as bootstrapping because in contrast to other debt, no interest is usually required upon repayment and it is based on relationships entrepreneurs cultivate and leverage with suppliers and vendors (Bosse & Arnold, 2010; Winborg & Landström, 2001). Winborg and Landström's (2001) study suggests bootstrapping techniques specifically geared toward trade credit usage, such as negotiation of better terms and/or staggering or delaying payment to suppliers as a strategy to effectively manage inventory and cash flow.

Although sources of capital for entrepreneurs are numerous, this study focuses on two. As illustrated here, trade credit and VC are completely different types of capital financing, with one being debt and the other equity, respectively, as defined above. In addition, trade credit and VC are at exact opposite ends of the spectrum of usage, as trade credit is one of the most popular sources and VC one of the rarest. This review of capital sources and where trade credit and VC fit within those sources provides context for a more detailed comparison and contrast of trade credit and VC.

Venture Capital

As examined here, VC is a type of private equity financing in which an outside party, in the form of an investment fund, provides capital to an entrepreneurial venture in exchange for a percentage of ownership (equity stake), based on some agreed upon valuation of the firm (Lerner et al., 2012; Metrick & Yasuda, 2011). Studies depict VC as a source of finance prevalent during the growth or expansion phases of a venture, just

beyond start-up, or as a bridge between bootstrapping and more traditional finance methods (Gompers & Lerner, 2001; Zider, 1998). Venture capitalists, therefore, are not known for providing development (seed) or early-stage financing for ventures, with some occasional exceptions. Early-stage financing, therefore, ultimately falls on the backs of entrepreneurs themselves, angel investors, or friends and family of the entrepreneur (Rogers, 2009).

VC is not a product of a single individual, as in angel investing, but rather a fund set up as a third-party financial intermediary, similar to a bank or other financial institution (Metrick & Yasuda, 2011). VC funds are formed as limited partnerships with general partners, also known as venture capitalists, responsible for making decisions on where to invest (Metrick & Yasuda, 2011; Samila & Sorensen, 2011). Samila and Sorensen (2011) describe investors, who act as limited partners in VC funds as "primarily wealthy individuals and institutional investors, such as college endowments, insurance companies, and pension funds" (p. 339). In some cases, other corporations also invest in VC funds as a way to diversify their investment holdings into riskier, potentially more profitable endeavors (Lerner et al., 2012). With risk narrowing the focus of VC investing, the link between entrepreneurial activity and VC is a product of industry, geography, innovative activity, and the performance of companies receiving VC funding. History also shows VC is a relatively new and very exclusive source of capital for small business.

The History of VC

VC has been formally recognized as a finance source since the mid-1940s (Cumming & MacIntosh, 2004; Gompers & Lerner, 2004; Lerner et al., 2012; Metrick &

Yasuda, 2011). Semila and Sorensen (2011) find, however, that VC in the United States did not start to attract considerable attention as a mainstream financing alternative until the early 1980s.

When studying details of VC, it is important to note two distinct periods of research exist. Because of the bursting of the technology or "dot com" bubble of 2000–2001, which adversely impacted venture capitalists, VC research conducted pre- and post-2001 reflects different attitudes and outcomes (Hellmann & Puri, 2002; Lerner, 2002; Cumming & MacIntosh, 2004). As a result, the period in VC from 2001 to present is referred to by Metrick and Yasuda (2011) as the "postboom period." While some research conducted prior to 2001 is relevant and useful, post-2001 research provides a more accurate depiction of the current climate and attitudes surrounding VC.

Despite significant attention in the media and academics, VC is also an extremely rare source of financing for entrepreneurs. Statistically, less than 3% of all entrepreneurial ventures use VC financing (Berger & Udell, 1998; Rogers, 2009). The Small Business Administration (2011) reports all combined forms of outside private equity financing, including VC, account for about 6% of total finance sources. Providing further clarity as to the rarefied nature of VC financing, Samila and Sorensen (2011) add, "Even in Silicon Valley, it (VC) funds fewer than 4% of new firms" (p. 338).

Babson College is an institution noted for a nationally ranked entrepreneurship program ("Top Entrepreneurial Colleges," 2011). Babson publishes the Global Entrepreneurship Monitor (GEM) Financing Report, documenting information and statistics on current finance trends in entrepreneurship in 42 countries, including the United States (Bygrave, Camp, Hey, & Reynolds, 2007). The report notes, "one in

10,000 start-ups have VC in hand when they open their doors for business" (p. 4). The GEM report urges those in charge of economic policy, as well as educators, to spend more time focusing on the financing entrepreneurs can generate for themselves and less time on such an uncommon source like VC. The primary reason for the scarcity of VC has much to do with the businesses to which venture capitalists are attracted, forming a distinct pattern of usage across the United States.

VC: Patterns and Reasons for Usage

Research shows that VC financing is very focused on specific industries and locations compared to other sources of capital. Yet, studies also show, VC tends to dominate discussions of entrepreneurial finance, regardless of region. This section highlights literature that reveals where VC is primarily used and the reasons why it cultivates such a following in the entrepreneurial communities it primarily serves.

Gompers and Lerner (2001) note in 1999 that roughly 60% of VC was invested in computer technology and communications companies, with an additional 10% going to medical science firms. Currently, The National Venture Capital Association (2013), in its annual 2013 yearbook, ranks the top three industries attracting VC as software (31%), biotechnology (15%), and energy (10%). The industries most often associated with VC help explain some of the geographical focus surrounding this source of private equity capital.

The Geography of VC

Geographically, in the United States, VC investing is centered in three primary metropolitan areas: San Francisco/San Jose (also known as Silicon Valley), Boston/greater New England, and New York City (Chen, Gompers, Kovner, & Lerner,

2010; Metrick & Yasuda, 2011). In fact, the entire state of California, encompassing Silicon Valley, Los Angeles/Orange County, and San Diego, is home to about 50% of the total VC investments in the United States (Metrick & Yasuda, 2011).

Chen et al. (2010) provides additional evidence showing that with regard to VC, geography matters a great deal. Chen et al. (2010) argues that venture capitalists are far more likely than even entrepreneurs to cluster in a particular locale or metropolitan area like Boston or San Francisco. In other words, even though entrepreneurial activity may be spread somewhat evenly across the United States, VC investing is not. Furthermore, venture capitalists prefer to invest close to where they are located to minimize time, travel costs, and communication issues while monitoring their investments (Chen et al., 2010). Entrepreneurs in rural states like North Dakota, therefore, may have a difficult time attracting VC investors from outside the area. Data in the Chen et al. (2010) study also show that venture capitalists do not wish to expand into markets traditionally lacking VC financing, in part, because of the need to monitor investments and also because of access to accredited investors in their funds.

With regard to monitoring, a distinct similarity exists in the literature and in practice between VC and trade credit information acquisition. Venture capitalists, as well as trade credit providers, demonstrate an advantage over banks and other financial providers in making investment decisions because of the close screening and monitoring relationship established with firms (Baeyens & Manigart, 2003; Ueda, 2004). Trade credit providers often possess similar information symmetries, which helps to explain the provision and usage of both methods of finance over other forms. Monitoring based on experience in innovative industries helps assure returns to investors and, as some

literature suggests, varying degrees of increased firm performance (Baeyens & Manigart, 2003; Ueda, 2004).

VC and Firm Performance

Data comparing firm performance between VC-backed companies and those not using VC funds appear mixed. Utilizing information from the U.S. Census Bureau's Longitudinal Business Database (LBD), two studies (Chemmanur, Krishnan, & Nandy, 2011; Puri & Zarutskie 2012) find evidence on the efficiency, growth patterns, and life spans of VC versus non-VC-backed firms. Accounting for sales and employment, VC-backed companies exhibit more growth and overall sales. Non-VC-backed firms, however, appear to be just as profitable when matched with similar VC-backed counterparts, but are not able to produce goods as efficiently, likely due to the additional capital afforded to VC-backed firms to invest in inputs and infrastructure. As noted previously, VC-backed companies have a lower overall failure rate, primarily because the initial period after the VC investment is made positively affects failure statistics (Pari & Zarutskie, 2012).

Beyond day-to-day firm performance, Florin (2005) focuses specifically on venture performance before and after an IPO, as previously defined. Entrepreneurs seeking VC actually experienced less wealth creation than non-VC-backed entrepreneurial ventures. This evidence supports earlier findings showing profitability for VC-backed companies to be no higher than for those not receiving VC. In fact, non-VC-backed company income is typically much higher (Florin, 2005). Florin (2005) also finds evidence that only high-VC-backed (over 30% equity stake) ventures achieve better results from IPOs than non-VC-backed companies. As the data below demonstrate,

performance of VC-backed firms can be attributed to increased innovation, but debate persists on whether the innovation is a direct result of the VC investment.

VC and Innovation

With regard to firm performance, researchers also debate the link between innovation and VC from the perspective of which comes first, innovators with cutting-edge, profitable business ideas or venture capitalists with money to invest? Analyzing 30 years of U.S. patent data, Kortum and Lerner (2000) find that VC activity has a significant effect on innovation, as measured by the number of patents filed. Patents, however, are not a sign of business activity, but merely a legal intellectual property protection tool anyone can file, regardless of viability or sales (Kuratko, 2014). Perhaps more realistically, Ansari and Uddin (2009) use original survey data to argue that the presence of VC promotes innovation among entrepreneurs. Hirukawa and Ueda (2011) refer to the overall findings of studies supporting the notion that VC spurs innovation as a "VC-first hypothesis."

There are also studies to the contrary, making the argument that VC has little if any effect on innovative or creative activity (Engel & Keilbach, 2007; Hirukawa & Ueda, 2011; Zucker, Darby, & Brewer, 1998). These studies pursue an "innovation first" hypothesis, arguing that innovative activity in a particular region or area attracts VC investors and, in turn, causes other entrepreneurs to pursue start-ups in that particular region. One study even contends that because of venture capitalists' intense focus on business principles, they actually hinder the innovative and creative aspirations of entrepreneurs (Stuck & Weingarten, 2005).

The literature provides evidence of VC primarily focusing on a few innovative, technology-driven industries in just a handful of locales. Suppose an entrepreneurial venture creates a new product, service, or business model that fits with some of the previously described parameters of what venture capitalists look for. What is next for the entrepreneur? How does a venture become one of the few to attract VC funding, and what can the entrepreneur expect as a by-product of accepting VC?

The VC Cycle

In examining a bias toward VC over trade credit financing, the complexities of VC become one of the issues for further study. As data below show, attracting venture capitalist money is hard work, limited to very exclusive types of business models and specific locations. The narrow scope of VC also speaks to the previous statistics on usage. Through textbooks, classrooms, and even prime time TV, students may be receiving incorrect information on how they connect with VC financing.

Attaining VC

Reality TV programs like "Shark Tank" and "Dragon's Den" depict private equity investing as entrepreneurs making a rehearsed presentation or pitch to a group of investors ("sharks" or "dragons") in the hope of attracting financing. The actual process of how venture capitalists and entrepreneurs connect, also known as "deal flow" (Metrick & Yasuda, 2011, p. 137), is a far less casual encounter and rarely involves a cold-call scenario on the part of the entrepreneur. In reality, deal flow to VC funds occurs through a complicated web of referrals and word-of-mouth based on a variety of circumstances (Metrick & Yasuda, 2011; Rogers, 2009).

According to Metrick and Yasuda (2011), venture capitalists engage in "sourcing" (p. 137) of deals through a variety of channels. For less established VC funds, referrals from accountants, lawyers, and other professionals alert venture capitalists to potentially attractive investments. Lesser known venture capitalists can also utilize events like trade shows or even cold-calling entrepreneurs to initiate potential deals. Popular VC funds, on the other hand, typically do not actively seek investment opportunities, as the prestige of being associated with a certain fund yields more prospects than needed. As a result, Metrick and Yasuda (2011) find "These top-tier venture capitalists receive most of their deal flow from repeat entrepreneurs or as direct referrals from close contacts" (p. 137). Despite the complexity and exclusivity of VC deal flow, Rogers (2009) notes that fewer than 10% of deals reaching the desks of venture capitalists move on to the next phase of investigation, a process known as due diligence.

Responsibilities of Venture Capitalists

The survey used in this dissertation asks students whether they desire to take on a partner as a result of accepting financing. As the information in this sections shows, venture capitalists do more than simply give money to entrepreneurs. With the money comes a list of responsibilities on the part of the venture capitalist to safeguard the investment, responsibilities that may be more than entrepreneurs bargain for.

Once a small percentage of entrepreneurial firms actually attract the attention of a venture capitalist, a short yet time-consuming list of responsibilities begins for venture capitalists. Research suggests that venture capitalists have three primary responsibilities with regard to investments. First, they spend a great deal of time screening deals to judge whether or not to invest, which can be a very lengthy process of several months or more

(Kaplan & Learner, 2010; Kaplan & Stromberg, 2001). Metrick and Yasuda (2011) suggest that hundreds of potential deals will be screened before "a few dozen" (p. 9) will make it to the stage of screening known as due diligence. Due diligence allows venture capitalists to further scrutinize ventures and their founders down to the last detail in order to help facilitate a final investment decision.

The second responsibility in which venture capitalists participate is the contracting process. Venture capitalists design contracts between themselves and selected investments to establish rights to cash flow, voting, board of director selections, the process of liquidation, exit strategies, and other control measures like noncompete clauses or removal of entrepreneurs (founders) for poor performance (Kaplan & Lerner, 2010; Kaplan & Stromberg, 2001).

As mentioned earlier, once an investment has been made in a company, venture capitalists spend a significant portion of their time monitoring those investments (Gorman & Sahlman, 1989; Hellmann & Puri, 2002; Kaplan & Lerner, 2010). Zider (1998) as well as Gorman and Sahlman (1989) estimate that venture capitalists spend about 50% of their time engaged in monitoring activities including consulting or recruiting personnel for ventures. VC financing is a time-intensive progression, with just screening and due diligence alone consuming, in some cases, up to a year (Metrick & Yasuda, 2011).

Rogers (2009) emphasizes the value-added importance of monitoring between venture capitalists and entrepreneurs by citing Amazon.com as an example. Kleiner, Perkins, Caufield, & Byers (KPC&B), a popular and noted VC firm specializing in "dot com" companies, invested $8 million in Amazon.com. As a result, it helped Amazon

find additional high-profile board members, vice presidents, and helped take Amazon public. All of this despite KPC&B offering Amazon less lucrative investment terms compared to other VC funds. Amazon founder Jeff Bezos described receiving financing from KPC&B as "being on prime real estate" (p.231) because of the connections and experience brought to Amazon (Rogers, 2009).

As with Amazon.com, monitoring can prove beneficial to entrepreneurs, as firms seeking VC funds try to connect with venture capitalists possessing a high degree of expertise in the core competencies of a particular venture (Rogers, 2009). There are instances, however, when the VC relationship proves detrimental to the entrepreneur. Evidence in the literature suggests that companies using VC financing are far more likely to have their entrepreneur founders removed and replaced by an outside CEO, either for lack of experience or poor performance (Hellmann & Puri, 2002; Kaplan & Lerner, 2010). The complexity and pressure of the VC relationship culminates in a planned exit, where venture capitalists harvest their investment and break from entrepreneurs.

Exits

Based on survey data collected, there is evidence that some entrepreneurs expect to remain in their businesses indefinitely. As the following section explains, however, accepting money from a venture capitalist may usurp that desire.

Venture capitalists are responsible for assembling a portfolio of companies to generate a return on investment for limited partners (investors). As a result, venture capitalists are only interested in companies with the prospect for a profitable exit. In other words, VCs desire the opportunity to positively cash out of an investment at some point in the future (Metrick & Yasuda, 2011).

Cummings and MacIntosh (2004) note that there are typically five common means of exit for a venture capitalist to pursue. One potential exit strategy is an IPO of an investment venture's stock, thus selling shares of the company to the public. Another common alternative is a private sale of the entire company to a third party. A so-called "secondary sale" is yet another option where only the venture capitalist's ownership interests are sold to a third party, with the founder staying in the company. Fourth, a buyback is a possibility, where the entrepreneur (founder) buys back ownership interest from the venture capitalist. The final and least desirable option is a write-off, where the venture capitalist's exit strategy necessitates walking away from a losing investment or the company has failed. Puri and Zarutskie (2012) find that about 34% of VC-backed firms are purchased by third parties, 16% go through an IPO, almost 40% ultimately fail, and the remainder pursue some other form of exit. Ideally, upon exit, venture capitalists harvest their original investment plus a lucrative return and move on to finance other deals and pass returns back to investors in the VC fund (Lerner et al., 2012; Metrick & Yasuda, 2011; Rogers, 2009; Smith & Smith, 2004).

Venture capitalists, therefore, are attracted to a small cadre of highly innovative business models that scale (grow) very quickly, typically within a 2–8-year time frame (Cummings & MacIntosh, 2004; Rogers, 2009). As previously discussed, the types of companies appealing to venture capitalists are quite narrow in scope and are generally found in healthcare, information technology (dot.com, computers, etc.), and financial services (Metrick & Yasuda, 2011). The value of innovation becomes one half of the currency of the venture capitalists–entrepreneur relationship and helps determine what

the entrepreneur must give up to acquire the needed capital the venture capitalist is equipped to provide.

Valuation and Equity Stake

It is contextually important to discuss business valuation and how it relates to VC investing. Valuing a company, whether at start-up or beyond, is not an exact science, involving many estimates and guesswork to determine a number (Rogers, 2009). Companies can be valued by a variety of methods, including the consideration of present and future cash flows, the value of company assets, using industry-accepted multiples of sales; or a combination of methods (Leach & Melicher, 2009; Rogers, 2009; Smith & Smith, 2004). For example, a common multiple used for the sale of a flower shop is 30%–35% of annual sales plus the fair market value of inventory (Rogers, 2009; "Rules of Thumb," 2010). Rogers (2009) argues that anyone can do a valuation, including the entrepreneur, and it should be done, at a minimum, once a year. Smith and Smith (2004) strongly encourage entrepreneurs to establish values for their firms because it puts them in a stronger bargaining position with investors or potential buyers.

While valuation is not necessarily a process strictly geared toward financing like VC, valuing a company is vital to the negotiation and contracting process of venture capitalists (Metrick & Yasuda, 2011; Rogers, 2009). The valuation of a venture helps determine how much equity venture capitalists receive in exchange for their investment dollars (Rogers, 2009). One example would be an entrepreneur asking for $500,000 in exchange for 40% ownership in the venture. Based on these numbers, an entrepreneur has placed a value on his/her firm of $1,250,000, calculated by dividing the $500,000 equity investment by the 40% ownership the investor receives. Rogers (2009) cautions

that many entrepreneurs establish values in this manner deliberately but, in some cases, by accident during negotiations; also known as an accidental valuation. The downfall is that if a valuation is performed first, it may differ greatly from the accidental valuation determined by an investment offer, sometimes to the disadvantage of the entrepreneur (Rogers, 2009). Valuation is, therefore, a potential pitfall entrepreneurs must be aware of when entering into any sort of private equity financing relationship. Another drawback of VC that entrepreneurs must consider is the cost in terms of the returns that venture capitalists seek to reap from successful ventures upon exit.

The Cost of VC

Smith and Smith (2004) observe: "New ventures are high-risk investments that tie up investor's capital for several years, with no easy means of exit" (p. 231). Because of the risk involved with VC investing, venture capitalists expect very high rates of return on their investment dollars. Typical returns range from 30% to 60% in earlier stages of financing to 20% to 30% for expansion of established businesses, with VC financing for turnarounds of troubled firms requiring 50% returns or more (Smith & Smith, 2004). The criteria to determine return rates are based directly on the risk to the venture capitalist. Later rounds of financing, like expansion capital, are provided to a more established, less risky venture, which allows for a lower return expectation. To put the level of equity returns to venture capitalists in perspective, from 1983 to 2003, the average return to investors in the U.S. stock market was 13% (Bogle, 2005). In the same period, the average return on mutual funds was just over 10%. From 1945 to 1997, real estate investors could expect an average return of about 8% (Rogers, 2009).

In his entrepreneurial finance book, Rogers (2009) helps contextualize rates of return to VC investors in terms of scale or growth of a company. By utilizing time value of money techniques, it can be calculated the number of times an investment multiplies based on a rate of return and the number of years from investment to exit. Assuming a venture capitalist intends to invest money for 5 years and expects a 40% return on investment, the venture and subsequent investment will need to multiply in value by over five times (5x) to meet this return expectation. Specifically, if the venture capitalist invests $500,000, he/she will expect almost $2,700,000 upon exit. This 40% return necessitates a business with an initial valuation of $1,500,000 to scale to an exit valuation of about $7,500,000 in only 5 years. To add perspective, most small businesses with fewer than 20 employees average just over 3% growth per year (Rogers, 2009).

As this section shows, VC is a rare, narrowly focused, expensive, and complex form of capital financing. Many of the ventures associated with VC, however, grow to become innovative leaders in their industries. As a result, VC has become the default financing source when conversations about innovation and entrepreneurial activity arise and, in the process, dominating textbook material on entrepreneurial finance. Central to many of the arguments made throughout this study, trade credit does not exhibit the complexities of VC and tends to touch a much wider array of ventures, yet it receives little mention in the classroom or textbooks. As the following data reveal, trade credit is an equally powerful source of financing compared to VC for a variety of important reasons.

Trade Credit

In their introductory business text, Nickels, McHugh, & Mchugh (2013) succinctly define trade credit as "the practice of buying goods or services now and paying for them later" (p. 504). Trade credit, or the extension of credit from a vendor of goods (supplies, merchandise, or raw materials) or services to a customer (the entrepreneur) in a business to business relationship, is the single largest source of short-term debt financing used in American business today (Wilner, 2000; National Small Business Association, 2008). Trade credit results in accounts receivables on the financial statements of a seller and accounts payables on the statements of a buyer (Brigham & Houston, 2012). Sellers basically act as third party financial intermediaries providing a loan of services or goods, as opposed to cash, to entrepreneurs in exchange for the their promise to pay at a future date (Chant & Walker, 1988; Fisman & Love 2003). In a seminal paper on trade credit, Petersen and Rajan (1997) note that it is "…the single most important source of short-term external finance for firms in the United States" (p. 661).

Historically, the amount of trade credit dollars owed by businesses is nearly twice that of other forms of short-term credit (Internal Revenue Service, 1997) and trade credit accounts for almost three times the amount of money provided by private equity investors like venture capitalists (Lerner et al., 2012; Ng et al., 1999; Wilner, 2000). In a report prepared on behalf of the Small Business Administration, Cole (2010) finds that about one in five small businesses are engaged in the exclusive use of trade credit to finance the entirety of their operation.

While no definitive evidence exists in the literature as to how long trade credit has been in existence, some sources point to at least 1000 B.C. (Cheng & Pike, 2003; Christie

& Bracuti, 1981). Trade credit requires suppliers of goods and services to enter into a debtor–creditor relationship with customers (Ng et al., 1999; Peterson & Rajan, 1997; Wilner, 2000). These customers, therefore, do not necessarily seek out more traditional forms of debt financing like loans, but instead, place orders for and receive merchandise, supplies, raw materials, or in some cases, services in exchange for a promise to pay at a later date. In contrast with VC, trade credit impacts virtually every type of business model at some point from retail/wholesale and manufacturing to service (Petersen & Rajan, 1997; Wilner, 2000).

Like VC, several worldwide corporations have been launched and grown through the availability and effective use of trade credit. For example, in the mid-1960s, Richard Schulze leveraged relationships developed as a sales representative for hi-fi manufacturers and was granted enough trade credit to found the small business that eventually grew into Best Buy Corporation (Rao, 2010). Retired executive and University of North Dakota management professor Dr. Donald Porter cited one of his most important professional achievements as negotiating longer trade credit terms as CEO of Berkley and Company, a manufacturer of fishing accessories. Porter noted that the ability to realign trade credit terms to match the sales cycle of Berkley as having a major impact on the profitability and cash flow of the firm (D. Porter, personal interview, 2010). In yet another example, Canadian entrepreneur Milt Reimer convinced a Winnipeg, Manitoba, job shop clothing manufacturer to produce his snowmobile clothing designs on credit until they were sold. This extension of trade credit helped build Reimer's company, FXR Racing, into the largest snowmobile clothing manufacturer in the world (M. Reimer, presentation to ENTR 405, 2012).

There are also real-world cases of large companies squeezing suppliers on trade credit terms in order to boost cash flow. Ng (2013) reports that Procter and Gamble is intentionally delaying payment to suppliers resulting in up to $2 billion in additional cash flow. Other companies like Newell-Rubbermaid, Kimberly-Clark, JC Penney, and DuPont are planning to implement similar strategies aimed to net them upwards of $200 million in surplus cash.

Despite the data reported above on the historical aspects of trade credit, it still appears to be marginalized in entrepreneurship curriculum. The following provides information on usage patterns of trade credit to draw a contrast between trade credit and VC.

Trade Credit Usage

The academy has studied and posited theories of trade credit usage from several different angles, including finance, economics, marketing, sales, and cash flow. Leading up to a discussion of trade credit terms, the following is literature relevant in examining the overall existence of trade credit and the resultant theories.

Petersen and Rejan (1997) note that one of the central roles of trade credit is to provide a substitute method of finance for entrepreneurs unable to access more traditional sources like, for instance, bank loans. Considering this substitution effect, Huyghebaert, Van de Gucht, and Van Hulle (2007) determine that start-up companies with a high failure rate and a desire to maintain control of their businesses gravitate toward trade credit as opposed to bank credit. The study finds that trade creditors are generally more lenient with customers at risk of default than banks, thus allowing entrepreneurs time to recover and get back on track. Likewise, Wilner (2000) finds that for firms already in

default or bankruptcy, suppliers are far more likely than banks to renegotiate and reach consensus on how to proceed. Evidence also exists showing that the lack of available bank credit increases the demand and use of trade credit, whether because of a financial or economic downturn (Blasio, 2005; Huang, Shi, & Zhang, 2011; Yang, 2011) or as the result of a lack of credit history which can facilitate traditional loans (Danielson & Scott, 2004; Jain, 2001; Petersen & Rejan, 1997). In contrast to VC, studies show that trade credit is used in more ways and at every stage in a company's life cycle, including start-up (Berger & Udell, 1998; Cunat, 2007).

Similar to monitoring in VC financing, findings indicate that trade creditors have several advantages over banks in granting credit and maintaining relationships, which helps to explain why trade credit use increases when bank financing is not an available option. Cunat (2007) argues that the supplier's ability to cut off an entrepreneur's flow of goods and materials plays an integral role in suppliers gaining an upper hand over traditional banking relationships. Also, the relatively high interest rates associated with forfeited trade credit discounts (detailed in a later section) act as "insurance and default premiums" (p. 491) for suppliers and help make up for the risk of granting trade credit. Literature also reveals that because of the frequent contact between suppliers and buyers, greater information symmetry exists, allowing vendors to learn more about customers through purchase and payment habits (Pike, Cheng, Cravens, & Lamminmaki, 2005; Smith, 1987). The information acquired by vendors can be used to make credit decisions (Smith, 1987) and monitor buyers in a more efficient, timelier, and less costly manner than banks (Jain, 2001).

Suppliers also appear to have an advantage over banks in that goods purchased on trade credit can be repossessed and sold more easily, considering the suppliers already-established market (Mian & Smith, 1992; Petersen & Rajan, 1997). Given their ultimate control of goods, studies also show that suppliers have the benefit of engaging in price discrimination by modifying credit terms and/or the price structure of goods based on credit worthiness or past relationships with buyers (Pike et al., 2005).

From the entrepreneur's perspective, research posits theories focusing on entrepreneurs gaining an upper hand based on their ability to delay payment for goods, as opposed to the cash-and-carry nature of paying immediately upon purchase. Studies show that trade credit reduces the cost of transactions for entrepreneurs by allowing them to pay for a large amount of purchases at one time (e.g., at the end of the month) as opposed to every time they take delivery (Ferris, 1991; Petersen & Rajan, 1997; Schwartz, 1974). The delay in payment allows companies time to anticipate cash inflows associated with the sale of goods and offset those with the outflows of cash for payments, allowing greater capacity to carry more inventory. Entrepreneurs are also able to use trade credit as a means of ensuring the quality of goods purchased, with the credit term period allowing for inspection and a withholding of payment for poor-quality goods or services (Long, Malitz, & Ravid, 2001; Smith, 1987). The following section provides an explanation and overview of credit terms, which are viewed as one of the primary benefits of trade credit over VC.

Trade Credit Terms

In order to interpret trade credit terms one must understand the notation and use of net terms and two-part terms (Ng et al., 1999, Weygandt et al., 2012). Net terms are

noted on an invoice or credit agreement with jargon similar to: "Net 40" (or sometimes simply "N40"), meaning net 40 days or the net amount (purchases minus returns/allowances) owed on the invoice or bill is due to the supplier within 40 days of the invoice date. Two-part terms are noted with, for example, "2/10 Net 30," showing discount terms, as well as net terms. Customers are allowed to take advantage of a 2% discount if the bill is paid within 10 days of the invoice date ("2/10"), otherwise the customer can choose to wait 30 days to pay the net amount of the invoice ("N30"), thus forfeiting the discount.

While trade credit terms vary greatly across industries, certain commonalities exist. Cunat and Garcia-Appendini (2012) report, based on Federal Reserve survey data, that nearly 73% of net credit terms are between 21 and 30 days and the most common two-part terms are 2/10 Net 30. Additionally, regardless of an early pay discount, about 39% of buyers choose to give up the offered discount. Evaluating Compustat financial data, Ng et al. (1999) discover net terms as low as 7 days for perishable foods and as high as 60 days for goods like fabrics. The same study also shows discount terms as high as 8/10 (8% within 10 days of the invoice date) for the women's outerwear industry. Using an analysis of actual trade credit contracts, Giannetti, Burkart, and Ellingsen (2011) find that the average net trade credit term is about 25 days and that only about 20% of suppliers offer customers an early-pay discount.

Potential Cost of Trade Credit

Within the net trade credit term period, Wilner (2000) and Ng et al. (1999) point out that suppliers typically do not charge interest to buyers. What that means to small business is that if a supplier maintains trade credit terms of N30, entrepreneurs, in effect,

receive a 30-day, interest-free loan, albeit of goods or services as opposed to money. Several studies explain, however, that in lieu of charging interest, the early-pay discount (e.g. "2/10") exists to incentivize buyers to pay in a timely fashion and causes trade credit to be far more expensive than a traditional loan if the discount is forfeited (Cunat & Garcia-Appendini, 2011; Ng et al., 1999; Wilner, 2000). Assuming 2/10 Net 30 terms and using the following implicit interest rate (r_i) formula:

$$r_i = \left\{ \left(\frac{100}{100 - d_i\%} \right)^{360/(t_2 - t_1)} - 1 \right\}$$

where d_i% is the discount rate, t_2 is the net term days, and t_1 is the discount term days, it is determined that a small business choosing to relinquish an offered 2% discount pays an implicit annual interest rate of nearly 44% (Cunat & Garcia-Appendini, 2011; Ng et al., 1999). Since the rate is implied, no interest is paid directly out of pocket, but rather from a finance perspective, leaving the offered discount on the table and choosing to take 30 days to pay is the same as taking a loan at 43.9% interest (Cunat & Garcia-Appendini, 2011; Ng et al., 1999). For comparison purposes, interest rates on commercial loans, at the time of this writing, ranged from about 6% to 8% ("Rate Report," 2013).

Research shows, however, that in some cases reality differs from the expectations of trade creditors. Ng et al. (1999) reveal survey data showing a number of interesting discoveries, most importantly, that over 68% of 233 surveyed indicate that they allow customers to take discounts despite receiving payment outside the specified discount period. For example, even though trade credit terms may be set at 2/10 Net 30, if a customer elects to send payment, less the 2% discount, 20 days from the invoice date vendors often do nothing to enforce the terms and do not charge-back the discount to the

customer. The same study also reports that about 72% of long-standing customers take unearned discounts, without penalty, apparently as a reward for repeat business. In addition, a majority of the suppliers surveyed do not alter credit terms for the purposes of managing inventory (79.4%), in response to bank interest rate fluctuations (88%) or to combat market demand (63.5 %). The data indicate that entrepreneurs are afforded a consistent set of credit terms that can be planned for and managed in advance (Ng et al., 1999). These terms can play a major role in the cash management policies of firms and, compared to VC, possess a much smaller cost to the entrepreneur.

Trade Credit and Cash Management

Although trade credit is often viewed in the literature as a finance tool, it also affords significant cash management benefits to entrepreneurs. As a result, trade credit plays a substantial role in a business model's liquidity or its ability to convert assets, like inventory, into cash (Horngren et al., 2012).

From the buyer or customer's perspective, trade credit results in accounts payables, classified by accountants as current liabilities or debts typically paid within one fiscal year (usually 12 months) or less (Weygandt et al., 2012). For ventures dealing with both the sale of inventory and the granting of trade credit terms to their customers that result in accounts receivables (Weygandt et al., 2012), trade credit significantly impacts a cash management formula known as "the cash gap" or "cash conversion cycle" (Borgia & Burgress, 2000; Richards & Laughlin, 1980; Rogers, 2009).

From an entrepreneur's perspective, Rogers (2009) summarizes an entrepreneurial reality of business by noting, "first you pay for the goods or services, and then eventually someone else—your customers—pays you" (p.170). The time between the purchases of

inventory, for example, with a wholesaler, and when the firm collects its accounts receivables from customers represents the cash gap (Borgia & Burgress, 2000; Richards & Laughlin, 1980; Rogers, 2009). Mathematically, the cash gap may be addressed using the following formula:

Average Days to Sell Inventory
\+ Average Days to Collect Accounts Receivables
\- Average Days to Pay Accounts Payables (trade credit)
= Cash Gap (in days)

The cash gap shows entrepreneurs the number of days they finance sold inventory resulting in additional expenditures or opportunity cost for the firm (Richards & Laughlin, 1980; Rogers, 2009). For example, suppose it takes a company an average of 42 days to sell inventory, 41 days to collect accounts receivables from customers, and the company is allowed 36 days on average to pay its trade credit (accounts payable) obligations. Using the numbers in this example, the business would end up with a cash gap as follows:

42 (average days to sell inventory)
\+ 41 (average days to collect accounts receivables)
\- 36 (average days to pay accounts payables)
= 47 days (cash gap)

If this company averages, hypothetically, $23,000 per day in cost of goods sold, the firm then finances a total of $1,081,000 (47 days × $23,000) in sold goods over the course of a year while waiting for customers to pay, etc. Using an interest rate of 6% annually, the cash gap could cost the firm almost $65,000 ($1,081,000 × 6%) in additional expense due to interest on borrowing or opportunity cost resulting from the inability to invest the funds elsewhere. Thus, by negotiating, extending, and effectively managing trade credit

terms, the cash gap for a venture can be reduced, resulting in a cash savings throughout the year (Richards & Laughlin, 1980; Rogers, 2009).

Another consideration of the role of trade credit in cash management involves the cash flow status of a business. The Securities and Exchange Commission (SEC) requires public companies to report on cash flows (FAS, 95) on their annual 10-K filing in three separate sections: Operations, which relate to the normal day-to-day generation of revenues (sales) and expenses; Investing, which includes investments in fixed assets and securities; and Financing, which details the way firms generate external long-term capital and repay those obligations.

According to Amazon.com's SEC 10-K filing from 1997, the firm shows almost a $28 million net loss ("Amazon 10-K", 1997). Despite Amazon.com's 1997 loss, it still managed to generate positive net cash flow from its operations of just over $3 million. This positive outcome is in spite of the net loss as well as additional outlays for inventory and prepaid expenses. The recovery toward positive cash flow is due, almost entirely, to an increase in accounts payables (trade credit) that year. An increase in accounts payables related to operations is viewed as a cash savings on a statement of cash flows and is actually added back to the net loss, which helps generate a positive cash position from operations for Amazon (Weygandt et al., 2012). In the same period, Amazon.com shows an increase in accounts payable of nearly $30 million, which is the primary factor leading to the firm's positive cash flow from operations, notwithstanding the large net loss ("Amazon 10-K", 1997).

VC vs. Trade Credit

To summarize, trade credit allows entrepreneurs to better synchronize payments received from their customers with invoices entrepreneurs must pay for merchandise, supplies, and third-party services. The impact and benefits of trade credit are felt by virtually every business, whereas the data revealed on VC show that a very narrow scope of potential companies fit the VC model. What follows is a description and application of possible theories that may help explain a bias toward VC at the expense of trade credit and the consequences of such a bias, as examined in this study.

Theoretical Frameworks

Scarcity

It was once written, "…the merit of an object, which is in any degree either useful or beautiful, is greatly enhanced by its scarcity…" (Smith, 1876/1937, p. 172; Lynn, 1992). The bias studied here toward VC at the expense of trade credit and how it potentially affects the attitude and understanding of entrepreneurship students is driven, in part, by the psychological and economic theory of scarcity. We are surrounded by scarce goods, and there is typically never enough of something to satisfy everyone's demand; that limited availability drives the economy as well as the individual's psychological desires (Boyes & Melvin, 2011; Lynn, 1992). Substituting VC for traditional "goods," the exclusiveness of VC may increase the desire among entrepreneurs, students, and educators to be associated with it.

Psychological studies also refer to scarcity as "unavailability" (Lynn, 1992; Verhallen & Robben, 1994, 1995) and look at the effects when a population is told that something is in short supply. Cialdini (1985) argues that scarcity produces a heuristic

cue that causes individuals to view certain products or resources more favorably based solely on their relative unavailability. The heuristic cue is studied further, and findings show that certain consumers are generally attracted to products in short supply because they cause them to feel unique (Lynn & Harris, 1997; Verhallen & Robben, 1994, 1995) or to view products as being higher in quality (Gierl & Huettl, 2010). Veblen (1899) identifies certain products, occasionally referred to by economists as Veblen goods, where demand actually increases along with price (counter to normal supply and demand theory), because of the socioeconomic status of possessing such goods. VC shows evidence of achieving the same level of status in the entrepreneurial community as commodity goods in short supply.

The attractiveness of a scarce resource, like VC, drives conversations about it. These conversations and references to VC, if repeated frequently, potentially create enough familiarity with the topic that students could begin to perceive a deeper level of understanding regarding VC.

Knowledge by Description

This study, in part, analyzes student responses to questions about VC and trade credit. In the process, inconsistencies between students' perceived understanding of these two forms of finance and their exposure to the two topics are examined. These inconsistencies can be explained by examining Bertrand Russell's (1910) epistemological theory, Knowledge by Acquaintance and Knowledge by Description.

Russell (1910) distinguishes knowledge by acquaintance by stating: "…I am 'acquainted' with an object when I have a direct cognitive relation to that object" (p. 108). On the other hand, knowledge by description is generally described as knowing of

something by having heard about it, but not having a direct relationship or experience with it. As it relates to this debate, students hear the term and generalities associated with VC from many different resources, yet they typically demonstrate quite limited knowledge of the actual intricacies of VC. Thus students imagine that they know a lot about VC, because they hear the term all the time, which is the premise behind Russell's (1910) Knowledge by Description. Students also possess little to no knowledge by description or acquaintance with trade credit, because it is so rarely discussed in textbooks and classrooms. This disconnect in the classroom creates incongruities in the business world when students begin interacting as practicing entrepreneurs.

Ecological Systems Theory

Helping to explain the development of entrepreneurship students and how that development relates to actual entrepreneurial experiences is made possible by Bronfenbrenner's (1979) Ecological Systems Theory. The Ecological Systems Theory is a developmental psychology theory which posits that individuals are influenced by at least four environmental systems as they grow and mature. The microsystem involves an individual's family or classroom environment and the influence they exert. The mesosystem contains the interactions between microsystems, like how an individual's family life interacts with school. The exosystem is an external environment of which the individual has no control and yet could influence her/him, like the media, the neighborhood where the individual grows up, or the family environment in which a particular teacher is raised. Finally, the macrosystem is the society or culture where an individual lives or eventually coexists. Figure 1 illustrates an adaptation, for this study,

of Bronfenbrenner's theory, drawn by the author and based on a previous interpretation (University of Akron, 2013).

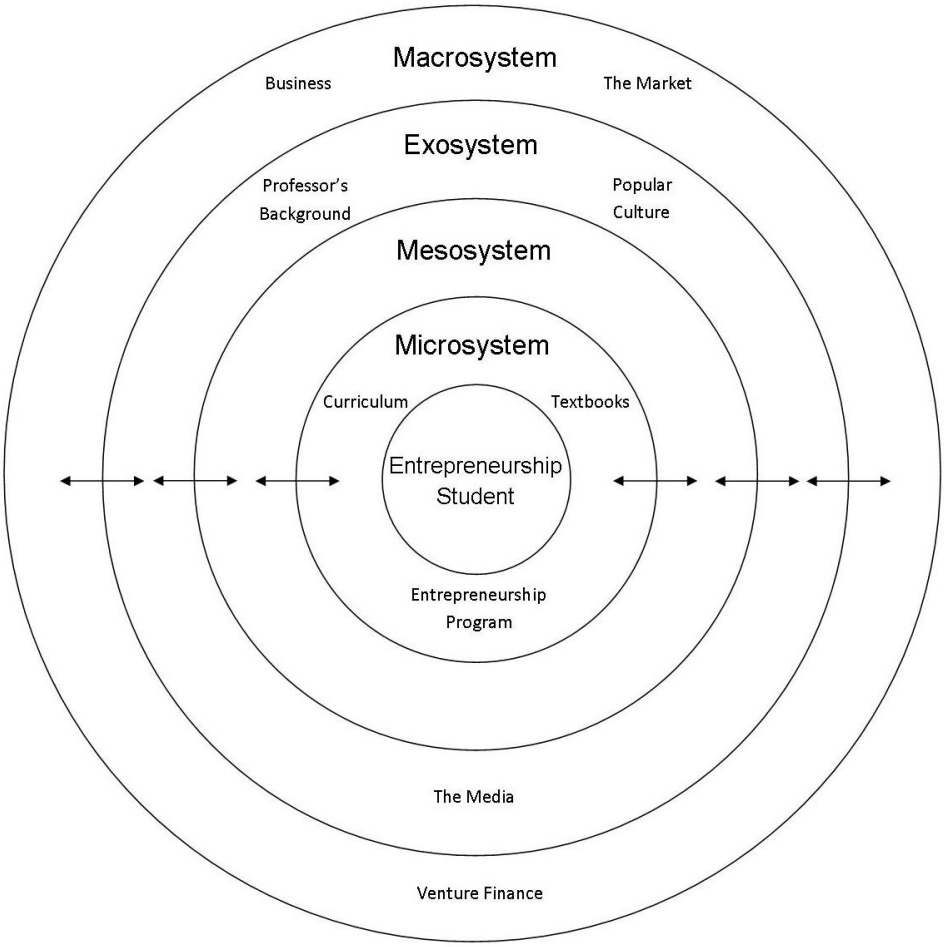

Figure 1. Adaptation of Bronfenbrenner's Ecological Systems Theory

Bronfenbrenner's theory (1979) can be applied to entrepreneurship students (the individual) and the messages they receive from educators and textbooks in their microsystem. The mesosystem presents the opportunity for educators to align or reinforce information students read in texts with what they actually believe occurs outside of the educational environment. The media and the entrepreneurial environment exert influence on entrepreneurship students in the exosystem and once students graduate and

choose to pursue a business venture, practice separates from theory in the macrosystem. The macrosystem, therefore, is where entrepreneurship students affected by a bias toward VC and thin coverage of trade credit financing begin to experience conflict between what they learned and the reality of actual small business finance.

CHAPTER III

METHODOLOGY

The purpose of this study was to examine whether entrepreneurship education textbooks and programs in the United States presented students with real, practical entrepreneurial finance options. Specifically, did textbooks and the U.S. entrepreneurial education programs surveyed demonstrate a bias in favor of the private equity finance option known as VC over other more widely used and practical finance methods like trade credit? This work also looked at how this perceived bias affected entrepreneurship student exposure to and understanding of VC and trade credit. The following research questions were addressed:

1. Does entrepreneurship education demonstrate a bias in favor of VC financing?
2. Is trade credit financing largely ignored by entrepreneurship education?
3. Do students demonstrate an understanding of VC?
4. Do students demonstrate an understanding of trade credit?
5. What is the relationship between student exposure to and understanding of VC?
6. What is the relationship between student exposure to and understanding of trade credit?

With these research questions in mind, the difference between trade credit and VC in entrepreneurship higher education programs was tested in two ways. First, in order to

test for a potential bias toward VC financing in entrepreneurship education, a quantitative survey of textbooks (N=13) was conducted. This survey analyzed business and entrepreneurship texts available for adoption from a variety of different publishers to determine the amount of space allocated to the topics of VC versus trade credit. A detailed description of the methods used for analysis appears below. Second, students (N=126) studying entrepreneurship at 11 U.S. universities were asked to complete a survey instrument. Students were probed through 24 questions organized in four constructs intended to measure exposure to and understanding of VC and trade credit. The survey concluded with eight general entrepreneurial finance questions related to VC and trade credit that could be used to conduct statistical tests. For all 32 questions, students were asked to indicate their level of agreement with the question using a 6-point, Likert-type scale. Specific details of the participants, instrument, and methods of analysis are addressed below.

Textbook Analysis

To help establish evidence of what students were exposed to in the classroom and begin to answer research questions one and two (see list above), an important procedure was to examine entrepreneurship textbooks. Specifically, this textbook analysis was conducted in an effort to determine how much physical space was dedicated to discussing trade credit financing versus VC.

Textbooks analyzed were chosen from sales data showing the most popular adoptions in the various disciplines examined (S. Holland, market share e-mail, 2013). Four different disciplines of texts were selected: dedicated entrepreneurial finance books, survey-style entrepreneurship texts used in an undergraduate- or graduate-level

introductory course, corporate/managerial finance texts, and general or small business titles typically used in an introduction to business course. At the time of this writing, only two dedicated entrepreneurial finance texts were in print, and both were included. Table 1 shows all textbook titles (N=13) examined.

Table 1. Textbooks Analyzed for This Study

Author(s)	Title (Abridged)	Ed.	Publisher
General Entrepreneurship			
Allen (2012)	Launching New Ventures: An Entrepreneurial Approach	6th	Cengage
Barringer and Ireland (2012)	Entrepreneurship: Successfully Launching New Ventures	4th	Pearson
Bygrave and Zacharakis (2008)	Entrepreneurship	1st	Wiley
Kuratko (2014)	Entrepreneurship: Theory, Process, and Practice	9th	Cengage
Mariotti and Glackin (2013)	Entrepreneurship	3rd	Pearson
Vesper (2010)	New Venture Experience	3rd	Vector
Entrepreneurial Finance			
Leach and Melicher (2009)	Entrepreneurial Finance	4th	Cengage
Smith and Smith (2004)	Entrepreneurial Finance	2nd	Wiley
Corporate/Managerial Finance			
Brigham and Houston (2012)	Fundamentals of Financial Management Concise	7th	Cengage
General/Small Business			
Ferrell et al. (2013)	Business	3rd	McGraw-Hill
Ferrell et al. (2011)	Business: A Changing World	9th	McGraw-Hill
Longenecker et al. (2012)	Small Business Management: Launching and Growing Entrepreneurial Ventures	16th	Cengage
Nickels et al. (2013)	Understanding Business	10th	McGraw-Hill

The textbooks were analyzed two ways. First, the index to the text was reviewed for specific mention of the terms “venture capital”and/or “venture capitalist”; “valuation”; “exits,” “exit strategies,” and/or “harvest”; “trade credit”; “supplier credit”; “trade payables”; and “accounts payables.”

The second part of the textbook analysis involved quantification of space dedicated to trade credit versus VC in terms of sentences, paragraphs, pages, and/or full chapters. Space was quantified and reported in the Results section in hierarchal order from full chapter(s) down to sentences. For example, a text could contain one full chapter on VC or related topics, plus a page or paragraph in another chapter, and a sentence in yet another part of the book. The same alternate or related terms used in the table of contents analysis above were used to determine space allocation. Chapters and sections of each text were examined, and if any of the terminology from above was addressed, the amount of space was quantified. This analysis enabled comparison between and quantification of student exposure to trade credit and VC financing specifically addressed in research questions one and two.

Survey Analysis

Participants

Survey participants (N=126) were selected through permission of instructors associated with the principal investigator and also from participants in a midwestern university business plan competition. Participants were either enrolled or had been enrolled in entrepreneurship courses or programs of study at 11 U.S. universities, including eight public and three private institutions. The geography of schools where data were collected included seven midwestern schools, one southeastern, one east coast, one southwestern, and one west coast school. Survey data were collected from participants at two schools consistently ranked as having among the best entrepreneurship programs in the United States ("Top Entrepreneurial Colleges," 2011). Based on returned surveys, the estimated response rate was about 77%. For participants, no restrictions were

imposed on whether subjects were graduate or undergraduate students or which specific field of study students were pursuing. Participation in the survey was completely voluntary, and no compensation of any kind was offered or provided to those participating.

Procedures

Recruitment of survey participants was through an oral presentation of the study and survey instrument. Subjects were informed orally of the study and that it was being conducted for the purposes of completing a doctoral dissertation by either the principal investigator or the instructor of the course in which the survey was distributed. Subjects were informed that their participation was completely voluntary and that if they did not wish to participate, they were to return a blank or incomplete survey along with the rest of the participants, and their surveys would be disregarded. Therefore, nonparticipants would not feel singled out as a result of their decision not to complete a survey.

Participants were asked to complete all demographic information along with providing a response to all 32 survey questions. Once the survey was completed, participants were instructed to return their surveys to an envelope held by the survey proctor. The principal investigator was not present during completion or collection of the surveys. The survey instrument contained no distinguishable personal information regarding participants, thus safeguarding participant anonymity.

The Survey Instrument

The survey instrument was designed by the principal investigator specifically to address the six research questions (see Appendix A for complete survey). The survey contained a section of descriptive questions, specifically gender, year in school

(sophomore, graduate, etc.), area of study (major, etc.), and number of entrepreneurship courses taken.

Participants were then asked to rate their level of agreement to 32 Likert-type questions using a 6-point scale (1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = slightly agree, 5 = agree, and 6 = strongly agree). Four constructs were designed, with six specific survey questions developed for each construct, accounting for 24 of the 32 survey questions. The survey concluded with eight additional entrepreneurial finance statements meant to invoke some level of agreement or disagreement from participants. The final eight questions were temporarily organized into a construct to perform a regression analysis, but were otherwise strictly meant to be treated individually to test a higher level of understanding of VC and trade credit. The first and third constructs (C1 and C3) were both related to VC (one concerning exposure to and the other concerning understanding of). Two partner constructs (C2 and C4) represented trade credit in a similar manner. The partner approach to the construct design was the result of several pilot tests where the initial survey instrument was tested and refined through nine separate iterations.

Construct one (C1), student exposure to VC, attempted to measure how often students were reading, hearing, and seeing VC and related terminology. These data were used to address research question one. Questions 1 through 6 on the survey dealt with exposure to VC in the form of classroom lectures (q. 1), formal and informal readings and/or potential media exposure (q. 2), and discussion of basic VC-related terminology (q. 3–6). Participants' level of agreement with Questions 1 through 6 provided evidence of the amount of exposure to VC-related information and other related topics (e.g.,

"scale") being discussed in classes. This information was used not only as a basis of exposure to VC, but as comparison data to trade credit exposure.

Construct two (C2), student exposure to trade credit, measured the amount of exposure students received on the topic of trade credit and provided evidence to answer the second research question. Questions 7 through 12 focused on exposure to trade credit or accounts payables through classroom discussions (q. 7 and 11), the relationship between suppliers and entrepreneurs (q. 8), trade credit terms (q. 9), using trade credit financing on assignments (q. 10), and understanding the cash cycle or cash gap in a business (q. 12). Similar to construct one, these questions provided evidence of how often students heard about trade credit and how that number compared to the frequency of exposure to VC.

Construct three (C3), student understanding of VC, measured how well students thought they understood the basics of VC and related topics, specifically addressing research question three. Questions 13 through 18 addressed what students actually thought they knew about VC (q. 13), the risks and rewards (q. 14), what types of ventures seek it (q. 15), why valuation is important (q. 16), the kinds of returns venture capitalists expect (q. 17), and how exits work (q. 18). These questions provided some evidence as to how comfortable students felt discussing or explaining the principles of VC.

Construct four (C4), student understanding of trade credit, was, perhaps, one of the most significant because it provided evidence of what, if anything, students knew about trade credit financing. Construct four included Questions 19 through 24, asking students whether they would know how to use trade credit as a competitive advantage (q.

19), as a finance tool (q. 20), what types of companies use it (q. 21 and 23), how to read and interpret credit terms (q. 22), and how trade credit impacts cash flow (q. 24).

Questions 25 through 32 on the survey were not grouped into a specific construct, except for later analysis, and were not written in the form of a question, but rather as a statement about VC or trade credit. The purpose of the participant's level of agreement with these statements was to enable statistical analysis between all four constructs of exposure and understanding of VC (C1 and C3) and trade credit (C2 and C4) and statements representing more advanced understanding of the two subjects. For example, if students demonstrated a high level of understanding of VC based on levels of agreement with questions in construct three, they should have also had a high level of agreement with Question 29 ("$250,000 in exchange for 15% equity is enough information to value a firm"). Anyone possessing an understanding of VC should have known that an investment offer of $250,000 for 15% equity means that the offer values the firm at $1,666,667 ($250,000 divided by 15%).

Pilot Testing

The survey instrument was originally crafted as a project for a multivariate statistical analysis course and went through nine iterations before completion. Through the generations of the instrument, the focus of refinement was on designing effective constructs and collecting valid and reliable data. For each iteration, the instrument was piloted using a convenience sample of students enrolled in courses that the principal investigator either instructed or had an affiliation with.

The final version of the survey instrument, revision nine, was piloted in an upper-division (300 level) entrepreneurship course (N=33) at a large midwestern university.

The data were tested, primarily, for reliability within the four constructs. After analysis, it was determined that all sets of construct questions achieved a Cronbach's Alpha between .71 and .87, indicating acceptable reliability.

Data Analysis

Analyzing the survey data was accomplished in several different ways. First, descriptive demographic data were culled from the completed survey instruments. Gender breakdown of the survey participants was tabulated, along with separation of freshman to graduate students. Participants were asked to indicate their area of study ranging from entrepreneurship to other business disciplines, engineering, healthcare, or other. The survey also asked participants to specify how many entrepreneurship courses they had completed.

In analyzing the questions, the first step was to tabulate descriptive data. Each question's percentage of agreement and mean were calculated. In addition, standard deviation was tabulated for each of the 32 questions in the survey to determine the variability of responses from participants.

Reliability testing was performed. Each construct's question responses were averaged, entered, and analyzed using IBM SPSS Statistics 20 software to calculate Cronbach's Alpha and Pearson's Correlation. Construct reliability data from the actual survey results were compared with pilot results.

To determine if a bias favoring VC existed, research question one was addressed two ways. First, exposure to VC was measured by the amount of space dedicated to the subject in entrepreneurship textbooks. A complete description of the textbook analysis was provided in an earlier section. Second, utilizing the survey data, amount of exposure

to VC was determined by the level of agreement with construct one by analyzing the mean of the responses.

To answer research question two, whether trade credit was being ignored in entrepreneurship education, textbook coverage of trade credit as well as survey responses to construct two were analyzed. As detailed in a previous section, textbook pages dedicated to trade credit financing were quantified and used as evidence of exposure to the subject. Exposure to trade credit was also determined by the level of agreement in the survey instrument through analysis of the mean of the responses in construct two.

In evaluating research question three on whether students had an understanding of VC, survey data were not used exclusively. The overall level of agreement for construct three was analyzed by examining the mean of the responses in order to determine the level of agreement. Survey questions for construct three were crafted so that responses indicating a higher level of agreement demonstrated a higher level of understanding of VC among student participants. Individual responses to Questions 25, 29, 30, and 31 were also analyzed, with a higher level of agreement reflecting a more advanced understanding of VC.

To answer research question four, whether students had an understanding of trade credit, only survey data were analyzed. First, the level of understanding students perceived about trade credit was determined by analyzing the mean of the responses to construct four. Survey responses indicating a high level of agreement provided evidence of a high level of understanding of trade credit among student participants. Two additional questions (q. 26 and 28) were also examined to test students' more advanced

understanding of trade credit, with a higher level of agreement indicating greater understanding.

Research question five, the relationship between exposure to and understanding of VC, was answered using survey data. A Pearson's correlation was performed between constructs one and three. This correlation determined how exposure to VC related to basic understanding of the subject. Expanding research question five to determine the relationship between exposure to VC and a higher level of understanding, four survey questions (q. 25, 29, 30, and 31) were developed as statements about VC financing. Students possessing a level of understanding beyond basic knowledge of how VC works should have respond with a high level of agreement to the statements. Questions 25, 29, 30, and 31 were grouped together into a construct for the purposes of performing a linear regression, where construct one (exposure to VC) acted as the independent variable and the new construct (q. 25, 29, 30, and 31) the dependent variable. The regression analysis provided data on how much influence the respondents' level of exposure to VC had on their more advance understanding of VC.

Finally, research question six, the relationship between exposure and understanding of trade credit, was addressed through analysis of survey data. A Pearson's correlation was performed between constructs two and four. This correlation determined how exposure to trade credit related to a basic understanding of the subject. To further test the relationship between exposure and understanding, two questions about trade credit (q. 26 and 28) were included in the survey to measure participants' advanced understanding and were grouped together as a temporary construct for statistical

modeling purposes. The level of agreement for Questions 26 and 28 was analyzed and reported. Chapter IV presents the results of the analysis methods.

CHAPTER IV

RESULTS

The purpose of this study was to examine whether entrepreneurship education textbooks and programs in the United States presented students with real, practical entrepreneurial finance options. Specifically, did textbooks and certain U.S. entrepreneurial education programs demonstrate a bias in favor of the private equity finance option known as VC over more widely used and practical finance methods like trade credit? This work also looked at how this bias affected entrepreneurship student exposure to and understanding of VC and trade credit.

Findings are reported for each of the research methods utilized. First, the results of the quantitative textbook analysis are reported. This analysis provided details as to the amount of space devoted to VC and trade credit in general entrepreneurship, entrepreneurial finance, corporate/managerial finance, and general/small business texts. Next, the results of the survey instrument are provided, including demographic information and analysis of survey questions. Analysis of the survey instrument was performed using IBM SPSS Statistics 20 software.

Textbook Analysis

Thirteen textbooks were analyzed from the disciplines of general entrepreneurship, entrepreneurial finance, corporate/managerial finance, and general/small business. The texts were selected from market share data (S. Holland,

market share e-mail, 2013), with the top-selling textbooks chosen in each discipline based on availability, as well as additional titles in the general entrepreneurship and general/small business disciplines.

The textbooks used were analyzed two specific ways. First, the index to the text was reviewed for specific mention of the terms: "venture capital" and/or "venture capitalist"; "valuation"; "exits," "exit strategies," and/or "harvest"; "trade credit"; "supplier credit"; "trade payables"; and "accounts payables." The second part of the textbook analysis involved quantification of space dedicated to trade credit versus VC in terms of sentences, paragraphs, pages, and/or full chapters. For a complete description of techniques and analysis, see the "Methods" section.

VC-Related Content

VC/Venture Capitalist

The index and body of all textbooks (N=13) were searched for the term "venture capital" and/or "venture capitalist," and inclusion in the index as well as coverage were quantified. Table 2 shows that 12 of the 14 texts contained a reference to VC and/or venture capitalist in the index. Specific coverage of VC and/or venture capitalist among all 14 texts included, in hierarchal order, three dedicated chapters, 38 separate pages, and 31 paragraphs.

Table 2. Results of Textbook Analysis – Topic(s): VC and/or Venture Capitalist

Author(s)	Title (Abridged)	Index Y/N	Chap.	Pg.	Para.	Sent.
General Entrepreneurship						
Allen	New Ventures	Y	0	7	2	0
Barringer and Ireland	Entrepreneurship	Y	0	0	8	0
Bygrave and Zacharakis	Entrepreneurship	Y	0	10	0	0

Table 2. (cont.)

Kuratko	Entrepreneurship	Y	0	10	0	0
Mariotti and Glackin	Entrepreneurship	Y	0	0	5	0
Vesper	New Venture	Y	0	5	0	0
Entrepreneurial Finance						
Leach and Melicher	Entr. Finance	Y	2	0	5	0
Smith and Smith	Entr. Finance	Y	1	6	0	0
Corporate/Managerial Finance						
Brigham and Houston	Financial Mgmt.	N	0	0	0	0
General/Small Business						
Ferrell et al.	Business	Y	0	0	1	0
Ferrell et al.	Bus: Changing	Y	0	0	1	0
Longenecker et al.	Sm. Bus. Mgmt.	Y	0	0	5	0
Nickels et al.	Business	Y	0	0	4	0
Total			**3**	**38**	**31**	**0**

Abbreviations: Chap.: Chapters, Pg.: Pages; Para.: Paragraphs; Sent.: Sentences.

Of note, a majority of coverage for the topics of VC and/or venture capitalist came from textbooks in the general entrepreneurship and entrepreneurial finance disciplines. The corporate/managerial finance text seemed geared specifically toward publicly traded firms; therefore, any private equity-related terminology like VC was absent. General/small business text coverage of the terms VC and/or venture capitalist were limited to an overview, thus the coverage could be quantified in terms of paragraphs and did not reach a full page in any of the books.

Valuation

As explained earlier via the literature, valuation, while not specifically a VC-only term, is often associated with VC-backed companies because of the determination of equity stakes and eventual exit of the venture capitalist. The results in Table 3 show that only half of the textbooks analyzed made any reference to valuation specifically in the index. Five dedicated chapters were devoted to valuation, but all within either general entrepreneurship or entrepreneurial finance texts. In fact, only one text outside of the

entrepreneurship discipline, a small business management text, made reference to valuation at all.

Table 3. Results of Textbook Analysis – Topic(s): Valuation.

Author(s)	Title (Abridged)	Index Y/N	Chap.	Pg.	Para.	Sent.
General Entrepreneurship						
Allen	New Ventures	Y	0	7	0	0
Barringer and Ireland	Entrepreneurship	N	0	0	0	0
Bygrave and Zacharakis	Entrepreneurship	Y	0	6	0	0
Kuratko	Entrepreneurship	Y	1	0	0	0
Mariotti and Glackin	Entrepreneurship	Y	0	4	0	0
Vesper	New Venture	N	0	0	0	0
Entrepreneurial Finance						
Leach and Melicher	Entr. Finance	Y	2	0	0	0
Smith and Smith	Entr. Finance	Y	3	0	0	0
Corporate/Managerial Finance						
Brigham and Houston	Financial Mgmt.	N	0	0	0	0
General/Small Business						
Ferrell et al.	Business	N	0	0	0	0
Ferrell et al.	Bus: Changing	N	0	0	0	0
Longenecker et al.	Sm. Bus. Mgmt.	Y	0	0	4	0
Nickels et al.	Business	N	0	0	0	0
Total			**5**	**17**	**4**	**0**

Abbreviations: Chap.: Chapters; Pg.: Pages; Para.: Paragraphs; Sent.: Sentences.

Exits, Exit Strategies, and/or Harvest

In entrepreneurship, the terms exit, exit strategy, and/or harvest are used interchangeably to describe the point at which an investor, often a venture capitalist, decides to depart from the company it has financed. For brevity, these three terms will be referred to simply as exits for the remainder of this section. Table 4 shows, once again, that the entrepreneurial disciplines spent the most time discussing exits, although not as heavily in general entrepreneurship as with previous terminology. Interestingly, the number-one-selling general entrepreneurship text by Barringer and Ireland (2012) showed no reference to any of these three terms either in the index or upon further

examination of the text. One small business management text devoted one entire chapter and a paragraph in another section to exit-related subject matter, while all other general/small business titles chose to omit the topic.

Table 4. Results of Textbook Analysis – Topic(s): Exits, Exit Strategies, and/or Harvest

Author(s)	Title (Abridged)	Index Y/N	Chap.	Pg.	Para.	Sent.
General Entrepreneurship						
Allen	New Ventures	Y	0	8	2	0
Barringer and Ireland	Entrepreneurship	N	0	0	0	0
Bygrave and Zacharakis	Entrepreneurship	Y	0	8	0	0
Kuratko	Entrepreneurship	Y	0	0	3	0
Mariotti and Glackin	Entrepreneurship	Y	0	0	10	0
Vesper	New Venture	N	0	0	0	0
Entrepreneurial Finance						
Leach and Melicher	Entr. Finance	Y	2	0	0	0
Smith and Smith	Entr. Finance	Y	1	0	0	0
Corporate/Managerial Finance						
Brigham and Houston	Financial Mgmt.	N	0	0	0	0
General/Small Business						
Ferrell et al.	Business	N	0	0	0	0
Ferrell et al.	Bus: Changing	N	0	0	0	0
Longenecker et al.	Sm. Bus. Mgmt.	Y	1	0	1	0
Nickels et al.	Business	N	0	0	0	0
Total			**4**	**16**	**16**	**0**

Abbreviations: Chap.: Chapters; Pg.: Pages; Para.: Paragraphs; Sent.: Sentences.

Trade Credit-Related Terms

Trade Credit, Supplier Credit, Trade Payables, and/or Accounts Payables

As previously noted, trade credit is sometimes referred to by different terminology, and this was surveyed in the textbooks (N=13) using as many references to trade credit as possible. Four separate terms, therefore, including trade credit, supplier credit, trade payables, and accounts payables were analyzed for content, specifically discussing the finance tool known as trade credit and its use in entrepreneurial ventures.

Accounts payables, therefore, was specifically scrutinized as to whether it was discussed in terms of accounting or as a source of finance, with accounting discussion omitted. Because of the scant coverage of the four trade credit-related terms, the quantitative analysis related to all four terms is included in Table 5.

Table 5. Results of Textbook Analysis – Topic(s): Trade Credit, Supplier Credit, Trade Payables, Accounts Payables, and Related Terminology

Author(s)	Title (Abridged)	Index Y/N	Chap.	Pg.	Para.	Sent.
General Entrepreneurship						
Allen	New Ventures	N	0	0	0	0
Barringer and Ireland	Entrepreneurship	Y	0	0	0	3
Bygrave and Zacharakis	Entrepreneurship	Y	0	3	0	1
Kuratko	Entrepreneurship	Y	0	0	1	0
Mariotti and Glackin	Entrepreneurship	Y	0	0	7	0
Vesper	New Venture	Y	0	0	1	0
Entrepreneurial Finance						
Leach and Melicher	Entr. Finance	Y	0	0	2	0
Smith and Smith	Entr. Finance	Y	0	0	6	0
Corporate/Managerial Finance						
Brigham and Houston	Financial Mgmt.	Y	0	3	0	0
General/Small Business						
Ferrell et al.	Business	Y	0	0	2	4
Ferrell et al.	Bus: Changing	Y	0	0	2	1
Longenecker et al.	Sm. Bus. Mgmt.	Y	0	0	1	0
Nickels et al.	Business	Y	0	0	4	0
Total			**0**	**6**	**32**	**9**

Abbreviations: Chap.: Chapters; Pg.: Pages; Para.: Paragraphs; Sent.: Sentences.

As Table 5 shows, of the 13 textbooks surveyed, only one, a general entrepreneurship title, failed to mention trade credit somewhere in the text according to the index. In hierarchal order, however, coverage of trade credit-related topics included a total of six pages, 32 paragraphs, and nine sentences spread over various sections of 13 texts. Two titles, a general entrepreneurship and a corporate/managerial text, dedicated the largest amount of total space to trade credit at roughly three pages each. Total

coverage of trade credit by entrepreneurial finance texts was eight paragraphs. By discipline, the most consistent coverage of trade credit came in general/small business textbooks.

Summary of Textbook Analysis Results

Table 6 presents a summary of the textbook analysis results, which compares the total space allocated to topics related to VC and trade credit among the 13 textbooks reviewed. The table shows the total number of texts containing each topic within the index and a quantification of separate chapters, pages, paragraphs, and sentences devoted to each topic analyzed. The difference in coverage between VC and trade credit topics was significant. Given that valuation could be independent of VC financing, setting aside the numbers for this topic, the difference between VC and trade credit coverage was still noteworthy, with seven chapters, 54 pages, and 47 paragraphs. Even taken on a topic-by-topic basis, attention to VC far eclipsed that of trade credit.

Table 6. Summary of Textbook Analysis Comparing VC and Trade Credit-Related Topics

Topics	Number Indexed	Chap.	Pg.	Para.	Sent.
VC-Related Topics					
VC/Venture Capitalist	13	3	38	31	0
Valuation	7	5	17	4	0
Exits, Exit Strategies, and/or Harvest	7	4	16	16	0
Total		**12**	**71**	**51**	**0**
Trade Credit-Related Topics					
Trade Credit, Supplier Credit, Trade Payables, and/or Accts. Payables	13	0	6	32	9
Total		**0**	**6**	**32**	**9**

Abbreviations: Chap.: Chapters; Pg.: Pages; Para.: Paragraphs; Sent.: Sentences.

As the previous textbook data shows, there is a noticeable gap in coverage between VC topics and trade credit, especially in entrepreneurship texts. The survey

results detailed below indicate that this gap translates directly to the classroom coverage of VC and trade credit. As a result, students either lack sufficient knowledge, in the case of trade credit, or, in some cases, are misinformed on the realities of VC financing, despite the increased exposure to VC.

Survey Results

College students (N=126) studying entrepreneurship in various capacities were asked to complete a 32-question, Likert-type survey. The survey contained 24 questions divided equally into four constructs: exposure to VC and trade credit; and understanding of VC and trade credit. The survey also contained eight additional questions, not included in a specific construct, probing participants on their more advanced understanding of both VC and trade credit. For a complete description of techniques and analysis, see the "Methods" section.

Demographics of Sample

The demographics of the survey participants including gender, year in school, area of study, and number of entrepreneurship courses completed are detailed in Table 7. As the survey data shows, nearly 75% of the students who completed the survey instrument for this study were male. Most participants also indicated they were in the latter stages of their undergraduate studies, with about 3% identifying themselves as graduate students. Respondents were either studying entrepreneurship in some capacity (N=68) or were pursuing another business major (N=40) such as accounting, management, or finance. Table 7 also shows, despite the high number of participants studying entrepreneurship, that the mean response to the number of entrepreneurship courses completed was quite low when compared to the fact that over 90% (N=119) of

respondents identified themselves as either juniors or seniors. This could indicate that many of these students were pursuing entrepreneurship as a minor, certificate, or concentration as opposed to a full major.

Table 7. Demographic Information of Sample

		Overall Sample, N = 126	
Characteristics		Count	%
Gender	Male	94	74.6
	Female	28	22.2
	No Response	4	3.2
Year in School	Sophomore	1	0.8
	Junior	40	31.7
	Senior	79	62.7
	Graduate Student	4	3.2
	No Response	2	1.6
Area of Study	Entrepreneurship	68	54
	Other Business	40	31.7
	Engineering	3	2.4
	Other	12	9.5
	No Response	3	2.4
Entrepreneurship Courses Completed	Mean	2.30	
	High	8 or over	
	Low	0	

Relationships in the Data

Part of the analysis for this work involved exploring relationships between the level of exposure to a particular topic like VC and the resultant understanding students may or may not gain from that exposure. To explore the differences and relationships between and within the constructs of exposure to and understanding of both VC and trade credit, all of the responses within each construct were averaged and the Cronbach's

Alpha reliability coefficient as well as the Pearson's Correlation was calculated for each. The results of these measures are shown in Table 8.

Table 8. Correlation of Subscale Constructs and Measures of Internal Consistency

Subscale	Exp. to VC	Exp. to TC	Understanding of VC	Cronbach's Alpha
Exposure to VC q. 1–q. 6				.81
Exposure to TC q. 7–q. 12	.53*			.86
Understanding of VC q. 13–q. 18	.78*	.58*		.90
Understanding of TC q.19–q. 24	.47*	.66*	.57*	.84

Abbreviation: Exp,: Exposure.
*p<.05

Items of note included the Cronbach's Alpha on each construct measuring between .70 and .90, indicating good reliability within the construct questions. High correlations existed between all constructs, but in particular, exposure to VC appeared to have a great deal of influence on students' perceived understanding of VC (Pearson's Correlation=.78). Still significant, but to a slightly lesser degree, students exposed to trade credit also indicated a better understanding of the topic (Pearson's Correlation=.66). The lowest correlation existed between exposure to VC and understanding of trade credit (Pearson's Correlation=.47), but all correlations were high enough to indicate general entrepreneurial finance discussions, perhaps, bolstered the confidence of students and lead them to perceive a better overall understanding of various finance methods.

Descriptive Statistics

Each individual survey question was analyzed to determine some form of agreement (slightly agree, agree, strongly agree), the overall mean of question responses, and the standard deviation of responses. The results of this analysis are shown in Table 9.

Table 9. Descriptive Statistics Including Percentage of Some Form of Agreement (slightly agree, agree, strongly agree), Mean, and Standard Deviation (SD) for All Survey Questions.

	% of Agreement	Mean	SD
C1: Exposure to VC			
q. 1. My professors have discussed VC	89.7	4.7	1.1
q. 2. I have seen the term VC	87.2	4.7	1.1
q. 3. I am aware of the term private equity financing	71.4	4.3	1.3
q. 4. I am familiar with the term scale	74.4	4.3	1.3
q. 5. I have been exposed to the term business valuation	82.5	4.5	1.3
q. 6. My professors have discussed high-growth companies	78.4	4.4	1.3
C2: Exposure to trade credit			
q. 7. My professors have discussed trade credit	37.9	3.1	1.4
q. 8. Suppliers and vendors can finance a business	65.9	4.0	1.4
q. 9. My professors have explained credit terms	68.3	4.1	1.3
q. 10. I have been given trade credit as a finance option	29.3	2.8	1.4
q. 11. Exposed to an in-depth discussion of accounts payables	81.7	4.6	1.4
q. 12. I am familiar with the term cash gap	50.0	3.5	1.4
C3: Understanding of VC			
q. 13. I understand how VC works	79.2	4.5	1.3
q. 14. I understand the risks and rewards of VC	78.6	4.5	1.3
q. 15. I know companies that are a good fit for VC	68.0	4.1	1.3
q. 16. I can explain the importance of valuation	61.9	4.0	1.3
q. 17. I know the kinds of returns venture capitalists expect	75.4	4.2	1.4
q. 18. I know what it means to harvest a venture	51.6	3.5	1.3
C4: Understanding of trade credit			
q. 19. I would know how to use trade credit to my advantage	37.6	3.2	1.5
q. 20. Understand finance between suppliers and entrepreneurs	71.4	4.3	1.2
q. 21. I am aware of the kinds of firms that use trade credit	36.8	3.1	1.3
q. 22. I can clearly explain what Terms: 3/15 n60 means	52.8	3.5	1.8
q. 23. Name at least one company started by using trade credit	23.8	2.5	1.4
q. 24. I understand how trade credit affects cash flow	30.4	2.8	1.4

Table 9. (cont.)

Additional Questions			
q. 25. When I hear VC I think business partner	50.8	3.6	1.3
q. 26. When I hear accounts payables, I think free money	19.0	2.4	1.4
q. 27. Entrepreneurs get financing from unrelated outsiders	47.6	3.4	1.4
q. 28. The list of companies that use trade credit is pretty small	29.8	3.0	1.1
q. 29. $250,000 for 15% equity is enough to value a firm	37.6	3.1	1.6
q. 30. Entrepreneurs receiving VC sell their business in 5 years	41.9	3.4	1.1
q. 31. At least 10% of entrepreneurs receive VC	56.8	3.6	1.3
q. 32. I regularly watch TV programs like ABC's "Shark Tank"	57.1	3.6	1.7

Exposure to VC vs. Trade Credit

Almost 90% of respondents agreed they had been exposed to VC. In fact, all six questions in the exposure to VC construct had a level of agreement of at least 70% or higher and means of over 4.3 on a 6-point scale. In comparing the responses in exposure to VC to exposure to trade credit, one notes less than 40% agreed that they had been exposed to trade credit (q. 7), with less than 30% having been offered trade credit as a finance option on an assignment (q. 10). Although not a huge margin, the standard deviation of responses to exposure to trade credit construct questions was higher, indicating a wider spread of responses from students. In addition, only two questions in the exposure to trade credit construct generated a mean response higher than 4 (q. 9 and 11) and only one was significantly higher at 4.6 (q. 11). It should be noted that "an in-depth discussion of accounts payables" (q. 11) could have occurred in an introductory accounting course, as opposed to an entrepreneurship class.

Understanding of VC vs. Trade Credit

A majority of students indicated that they agreed with statements testing their basic understanding of VC, with the lowest percentage of agreement being 51.6 (q. 18, "I know what it means to 'harvest' a venture"). Mean responses, however, went down slightly while standard deviations went up compared with questions about exposure to VC. The change in mean and standard deviation could indicate slightly less confidence and more diversity in responses.

The responses to questions about understanding of trade credit were striking, given the context of the research revealed here. Only two questions in this construct resulted in percentages of agreement higher than 50%, with students indicating that they understood the finance relationship between suppliers and entrepreneurs (q. 20, 71.4%) and they could explain credit terms (q. 22, 52.8%). Despite a majority agreeing with the question on explaining credit terms (q. 22), it also had the highest standard deviation of 1.8, signaling a wider range of responses. All other questions in this construct not only produced a percentage of agreement far below 50%, but mean responses were all below 3.2 on a 6-point scale. Most significant here was students' lack of understanding of trade credit's effect on cash flows (q. 24) and what types of firms might use trade credit (q. 21). Although very low, students' inability to name a company started with trade credit (q. 23) was not surprising given the relative lack of exposure and understanding of trade credit indicated by other responses.

Additional Questions

The final eight questions on the survey instrument were meant to delve more deeply into student understanding and attitudes toward VC and trade credit. Specifically,

Questions 25, 29, 30, and 31 explored the slightly deeper understanding of VC, and the results indicated a disconnect between how much exposure students received to VC and what they understand about how VC really works.

Only 50.8% of students felt that VC financing resulted in additional business partners for the entrepreneur (q. 25), a majority, but with a response mean of only 3.6, not a strong one. Question 29 asked about a phenomenon discussed earlier in the review of literature about accidental valuation, where an entrepreneur gives away his/her perceived firm value by indicating the ownership percentage he/she will relinquish in exchange for a specific investment. A majority of students (62.4%) did not agree that the scenario of surrendering 15% equity for a $250,000 investment was enough information to value the firm. Despite literature cited earlier, a majority of students (58.1%) also did not agree that VC-backed ventures have a strong likelihood of being sold in 5 years (q. 30). And most telling of all, a majority (56.8%) of respondents felt that at least 10% of entrepreneurs receive VC, even though almost every document researched regarding VC noted how rare a form of finance it actually was at around 3% or less of firms receiving it.

To further test the relationship between how much exposure students receive to VC and how much advanced understanding they possess, a linear regression was run between construct one (exposure to VC) and Questions 25, 29, 30, and 31 grouped together, for this test, as a construct. The results showed that the level of exposure students received to VC could only explain about 2% of their responses (r^2=.023) to the temporary construct of advanced understanding (q. 25, 29, 30, and 31). This indicates that students are hearing about VC a lot from a variety of different sources but are not

well-informed when it comes to practical understanding. Contrasting these results with the high correlation reported early between construct one (exposure to VC) and construct three (understanding of VC) demonstrates a troubling incongruity with a true, applicable understanding of how VC works.

Questions 26 and 28 dealt specifically with more advanced trade credit-related understanding. Only 19% of students agreed that accounts payables were like free money to the entrepreneur, because of their interest-free terms, sometimes including a discount for prompt payment (q. 26). Students did, however, appear to understand that trade credit was a widely used form of finance, as only 29.8% thought the list of companies using trade credit was small (q. 28).

CHAPTER V

DISCUSSION AND CONCLUSIONS

In this section, each research question will be addressed in detail, including specific findings from the textbooks and survey data, along with synthesis to related literature from the Review of Literature chapter. Finally, conclusions will be detailed and further analyzed in terms of their implications for practice.

The purpose of this study was to examine whether entrepreneurship education textbooks and programs in regions of the United States presented students with practical entrepreneurial finance options. Specifically, did U.S. entrepreneurial education demonstrate a bias in favor of VC financing at the expense of trade credit and what was the impact of that bias on students?

Popular entrepreneurship, finance, and business texts (N=13) were examined for content related to VC and trade credit, and the coverage of each topic was quantified. Students (N=126) were also asked to complete a survey with questions about their exposure to VC versus trade credit and their resultant understanding of both topics. The data collected from textbooks were quantified and reported in tables contained in an earlier section. Survey data were quantified and reported in terms of demographics, reliability, correlations, and descriptors. Regression analysis was also used to test the relationship between exposure to and advanced understanding of VC.

Based on data collected, evidence exists of a bias in favor of VC in entrepreneurial education, with significantly less mention of trade credit and related topics. This bias is prevalent both in the classroom message as well as in textbooks.

Students surveyed reported hearing about VC on many different occasions throughout their classroom experience and indicated a strong basic understanding of VC. In contrast, the more widely used and universally accepted form of finance, trade credit, received far less attention, resulting in students lacking an understanding of even some of its most basic tenants.

Survey data revealed that despite the high level of exposure to and basic understanding of VC, students failed to grasp more advanced concepts of VC. With no surprise, the lack of exposure to trade credit generally led to a lack of basic as well as advanced understanding of this finance option.

By addressing each research question specifically, this chapter describes the results and related literature in greater detail. This additional detail will make it possible to formulate conclusions and final implications for practice.

Research Question One

Does entrepreneurship education demonstrate a bias in favor of VC financing? Based on text book analysis data alone, there is a compelling case to be made that entrepreneurship education is biased in favor of VC. Twelve chapters alone were found to be dedicated to VC-related topics, with all but one from texts specifically written for entrepreneurship programs. In fact, the 12 chapters found were from just four different texts with total chapters of 58; about 20% of the material covered between these four books was related to VC. In addition to the 12 chapters, the sample of texts (N=13)

contained 71 dedicated pages and 51 more dedicated paragraphs to VC and related material.

Analyzing survey data, almost 90% of participants (N=126) indicated some level of agreement that their professors had discussed VC. For construct one, exposure to VC (q.1–6), over 70% of respondents showed some level of agreement for each construct question. The survey data showed that entrepreneurship students were being exposed to the term VC on a regular basis and much more often than other more traditional forms of finance.

A bias can further be seen by comparison of the 20% of textbook space dedicated to VC material, with literature revealing only about 2% of all entrepreneurial ventures will ever acquire funding from a venture capitalist (Berger & Udell, 1998; Bygrave & Zacharakis, 2008; Rogers, 2009). Because of its scarcity, experts in VC research actually caution those in control of entrepreneurial and economic policy to concentrate their efforts on traditional, more widely used forms of finance than VC (Bygrave et al., 2007). Further evidence of the narrow scope of VC is found in literature showing that only a handful of industries and geographical locations attract VC investment dollars (Chen et al., 2010; Gompers and Lerner, 2001; National Venture Capital Association, 2013; Metrick & Yasuda, 2011), and yet such a significant amount of space and time appears to be dedicated to discussing VC. In fact, statistics show that the chance of most people, including students graduating from entrepreneurship programs, ever launching a venture with the size, scale, and innovation to appeal to most venture capitalists is extremely slim (Bhide, 2000; Bitler et al., 2005; Bregger, 1996; Reynolds, 2005, 2007; Shane, 2008; Van Gelderen et al., 2006).

This study argues that the continued imbalance toward VC by entrepreneurship scholars is a direct result of the relative unavailability of VC funds. Economists like Adam Smith (1876/1937) , psychologists like Michael Lynn (1992), and many other scholars (Cialdini 1985; Gierl & Huettl, 2010; Lynn & Harris, 1997; Veblen, 1899; Verhallen & Robben, 1994, 1995) have posited theories that scarcity drives individual's yearnings to attain certain goods and/or services they perceive as more desirable because of their relative lack of availability. VC could easily substitute into these theories as a relatively rare and desirable form of finance with equally desirable venture attributes. Attributes such as increased innovative activity (Ansari & Uddin, 2009; Kortum & Lerner, 2000), improved company performance (Florin, 2005; Chemmanur et al., 2011; Puri & Zarutskie 2012), and rapid firm growth (Cummings & MacIntosh, 2009; Rogers, 2009). The preceding literature, along with the theory of scarcity, helps explain why a bias exists toward VC. The impact of this bias can be further theorized, as well.

The classroom environment, including textbooks, serves as a student's ecological microsystem, according to Brofenbrenner's Ecological Systems Theory (1979). This system, along with, for example, the mainstream media in the exosystem, plays a significant role in influencing the student, whether realistically or not. Beyond graduation, however, once the individual enters the macrosystem of society and the business world, the incongruity of all the time dedicated to VC begins to conflict with the way a vast majority of actual businesses finance themselves. Similar circumstances arise in exploring research question two, because entrepreneurial education chooses to focus on VC while marginalizing trade credit.

Research Question Two

Is trade credit financing largely ignored by entrepreneurship education? With trade credit cited as the largest source of short-term financing in use today (Wilner, 2000; National Small Business Association, 2008), this question is extremely important. Considering both the textbook analysis and survey data, there was enough evidence to suggest entrepreneurial education, for the most part, did not emphasize the importance of trade credit financing to students. As a result, students may only read or hear about trade credit in a passing sentence or paragraph in a textbook.

The textbook analysis revealed that, out of the total sample (N=13) of books, the majority of space dedicated to discussing trade credit was mainly confined to paragraphs, with about 32 identified. Perhaps most telling, only about 50% of the total coverage of trade credit material came from entrepreneurship texts, and the only two entrepreneurial finance texts on the market spent a total of eight paragraphs out of 30 chapters on the topic. This coverage compared with three chapters on VC-related material. In addition, the treatment observed in the texts was limited to rudimentary overviews of what trade credit is and, in most cases, a general description of trade credit terms (e.g: 2/10 N30). No space was allocated to advanced trade credit topics like cash gap calculations (Borgia & Burgress, 2000; Richards & Laughlin, 1980; Rogers, 2009), the impact of trade credit on cash flows (FAS, 95; Horngren, Harrison, & Oliver, 2012; Weygandt et al., 2012), and/or information on trade credit usage (Ng et al., 1999; Petersen & Rajan, 1997; Wilner, 2000).

Student survey data also showed that a majority of respondents (N=126) had not heard the term trade credit mentioned in class, with about 38% indicating some level of

agreement with the statement "my professors have discussed 'trade credit' in class." There was also evidence from the survey showing that when the focus was on accounts payables and related material (q. 8, q. 9, and q. 11), students showed a much higher level of agreement with those statements. There is a possible and likely explanation for why students responded in this manner. Given the age of the majority of the sample size (over 90% juniors and seniors) and the vast majority (over 80%) studying entrepreneurship or some other business field, these students have likely discussed accounts payable in introductory accounting. Introductory or principles of accounting courses engage in a brief discussion on accounts payables, typically as part of an inventory or merchandise accounting chapter (Horngren et al., 2012; Weygandt et al., 2012). The discussion of accounts payables is typically limited to an overview of credit terms and how to make accounting journal entries showing payments and discounts. The discussion of accounts payables in accounting principles courses, therefore, is not usually approached from a finance-related context, but strictly that of bookkeeping.

Another revealing survey response came from Question 10, "I have been given 'trade credit' as a finance option on an assignment." Only about 29% indicated some level of agreement with this statement. This response provided evidence that students working on case studies or other assignments, especially involving inventory-intensive companies, were not given the opportunity to explore trade credit as a means of financing inventory purchases, for example. This does not afford students the opportunity to learn how whole companies, like those described earlier in the review of literature (D. Porter, personal interview, 2010; M. Reimer, presentation to ENTR 405, 2012; Ng, 2013; Rao, 2010) were either founded or significantly impacted by the use of trade credit.

Here, scarcity theories (Cialdini 1985; Gierl & Huettl, 2010; Lynn, 1992; Lynn & Harris, 1997; Smith, 1876/1937; Veblen, 1899; Verhallen & Robben, 1994, 1995) may be running in reverse. Based on usage (Ng et al., 1999; Petersen and Rajan, 1997; Wilner, 2000), trade credit financing is certainly not scarce and could even be classified as abundant. Educators and authors of texts could actually be taking its use for granted, assuming, since it is so prevalent in real business, that students learn about it by default. Clearly, based on the responses collected, students are not being exposed to, nor are they grasping the importance of, trade credit financing in everyday business.

The same principles of the Ecological Systems Theory (Bronfenbrenner, 1979) apply to research question two as they did to question one. Only in this case, students are not hearing enough about trade credit directly in their microsystems or indirectly through the exosystem, and this is leading to a disconnect between theory and practice once reaching the business world (macrosystem). The levels of exposure examined for VC and trade credit led to analysis of students' understanding of the two topics.

Research Question Three

Do students demonstrate an understanding of VC? There are two levels of understanding considered to address this question, basic understanding of VC and slightly more advanced knowledge that would indicate a deeper understanding. The survey instrument attempted to measure both levels of understanding.

Construct three (q. 13–q. 18), understanding of VC, contained basic, general statements about VC and related terminology to measure students' rudimentary understanding. A majority of students (almost 80%) indicated some level of agreement with specific statements on understanding of VC, such as how it works (q. 13), the risks

and rewards associated with it (q. 14), and the types of returns VCs expect (q. 17). A slightly smaller group of students (about 62%–68%) indicated some level of agreement with statements about companies that use VC (q. 15) and the concept of valuation (q. 16). The only statement in construct three where respondents were nearly split was on the topic of harvest (q. 18), where just over 51% showed some level of agreement indicating knowledge of the topic.

Where the question of understanding VC was truly tested came in survey Questions 25, 29, 30, and 31, probing students on deeper knowledge of VC. Question 25 asked students if they associated VC with taking on a business partner, to which just over 50% agreed. Evidence in the literature on the monitoring (Gorman & Sahlman, 1989; Hellmann & Puri, 2002; Kaplan & Lerner, 2010; Zider, 1998) venture capitalists engage in with ventures indicates that they very much become a partner with entrepreneurs, and these business owners must understand this prior to entering into a relationship. There is further evidence that this partnership may not work out to the benefit of the entrepreneur, as a significant number of founders are removed from their own ventures as a result of the VC relationship (Hellmann & Puri, 2002; Kaplan & Lerner, 2010).

Question 29 dealt specifically with valuation, a very important component of the VC process (Leach & Melicher, 2009; Metrick & Yasuda, 2011; Rogers, 2009; Smith & Smith, 2004). The statement "$250,000 in exchange for 15% equity is enough to value a firm" is a classic case of accidental valuation (Rogers, 2009), where an entrepreneur unknowingly values his/her company during a VC negotiation by offering an ownership percentage in exchange for a certain investment amount. If an equity investor were to hear this statement, he/she would assume the entrepreneur already had a value in mind

for the firm. Just over 37% of respondents indicated some level of agreement with this statement, which could imply that students are not delving into more in-depth discussions of valuation and negotiation in class.

Question 30 asked about the average amount of time (5 years) most venture capitalists fund a venture before exiting. Most studies show VC investments last about 2 to 8 years, with an accepted average being about 5 years (Cummings & MacIntosh, 2004; Rogers, 2009), and students studying VC should know this from discussions about exits. Despite this common piece of information, only about 42% of students agreed that entrepreneurs typically sell their businesses about 5 years after receiving VC funds.

A wide array of papers and books written about VC include a disclaimer on how rare receipt of VC funding actually is for most entrepreneurs (Berger & Udell, 1998; Bygrave & Zacharakis, 2008; Bygrave et al., 2007; Lerner et al., 2012; Metrick & Yasuda, 2011; Rogers, 2009; Samila & Sorenson, 2011; Small Business Administration, 2011). A universally accepted percentage of ventures receiving VC from survey data sources is around 2% (Berger & Udell, 1998; Bygrave & Zacharakis, 2008; Rogers, 2009). Yet, survey question 31 stated: "if I had to guess, at least 10% of all entrepreneurs receive 'VC.'" Nearly 57% of participants recorded some level of agreement with that statement, a number far too high for students reporting such high exposure to VC.

With understanding and exposure to VC intrinsically linked and specifically dealt with in question five, the theoretical explanation for research questions three and five will be dealt with simultaneously below.

Research Question Four

Do students demonstrate an understanding of trade credit? Survey data regarding student understanding of trade credit was mixed, but largely discouraging. Construct four, understanding of trade credit, asked students for their level of agreement with six statements about trade credit financing. One surprising response was that over 71% of students agreed they understood the financing relationship between suppliers and entrepreneurs (q. 20). The only other statement (q. 22) a majority (52.8%) agreed with challenged respondents to explain the credit terms "3/15 N60." As discussed earlier, students learn how to read and interpret credit terms in introductory accounting (Horngren et al., 2012; Weygandt et al., 2012), and this could explain the level of agreement with Question 22 relative to other questions in construct four. Only about 38% agreed that they would know how to use trade credit to their advantage (q.19). Less than 40% agreed that they knew the types of companies using trade credit (q. 21), and only about 24% could name a company started using trade credit (q. 23).

As with research question three, students were also tested on their advanced knowledge of trade credit by asking two additional survey questions (q. 26 and q. 28). The literature points out that trade credit financing is largely a free loan from supplier to buyer (Ng et al., 1999; Wilner, 2000). Even if entrepreneurs choose to forego an offered early-pay discount (e.g.: 2/10) the 2% forfeited is only an implied interest amount and is not paid directly out of pocket, like a penalty (Cunat & Garcia-Appendini, 2011; Ng et al., 1999; Wilner, 2000). Students, therefore, were asked their level of agreement with the statement "when I hear trade credit, I think 'free money.'" Only 19% indicated some

level of agreement with this statement, which could imply students do not really understand the true benefit of trade credit or its terms.

Evidence from the literature shows that trade credit is a widely used source of financing for all manner of different businesses from service to manufacturing to retail (Ng et al., 1999; Petersen and Rajan, 1997; Wilner, 2000). Survey Question 28 implied to respondents that the list of companies using trade credit was small. In a positive turn of events, a majority (70.2%) of students did not agree with this statement, showing at least some indication that they realize the use of trade credit is widespread.

With understanding and exposure to trade credit having a correlation and discussed in question six, the theoretical explanation for responses to research questions four and six will be dealt with simultaneously below.

Research Question Five

What is the relationship between student exposure to and understanding of VC? In addressing research question three, students are showing high degrees of confidence regarding basic understanding of VC, but not for more advanced VC concepts like valuation and usage. There is evidence of a high correlation in the results between construct one (exposure to VC) and construct three (understanding of VC), indicating that students exposed to the term VC and the most basic fundamentals result in some basic level of understanding. When analyzing responses to Questions 25, 29, 30, and 31, however, testing a deeper understanding of VC, respondents largely, come up short in their advanced knowledge. Based on the results of a regression analysis between construct one (exposure to VC) and a grouping of Questions 25, 29, 30, and 31, exposure to VC does little to explain the disjointed answers to more advanced questions about VC.

One of the drivers of this research was a notion of students being superficially overexposed to the term VC in classrooms, textbooks, and mass media. This exposure may have led students to believe they were well-versed on VC, when, in fact, they knew very little of the actual inner workings of such a complex financing source. Russell's (1910) theory on knowledge by description can help explain entrepreneurship students' incomplete understanding of VC, despite their level of exposure to the subject.

To summarize, knowledge by description (Russell, 1910) implies that many people assume they understand or possess knowledge of a certain term or subject matter simply because they are exposed to it frequently and from many different sources. For example, the term "global warming" is referenced in numerous venues, and if surveyed on the subject, many people might indicate some confidence in their understanding of it. In reality, however, global warming is a highly complex scientific phenomenon that anyone without specific training in science and climatology could not possibly expect to fully understand. Based on these findings, VC is showing evidence of similar attributes, where students are constantly being exposed to the term for a variety of reasons, but very few are actually educating these students as to the intricacies of VC.

Research Question Six

What is the relationship between student exposure to and understanding of trade credit? In stark contrast to research question five, there is little if any knowledge by description (Russell, 1910) of trade credit, because students are simply not being exposed to the term enough in classrooms or textbooks used in entrepreneurship programs. Statistically, the results showed a high correlation between construct two (exposure to trade credit) and construct four (understanding of trade credit). Taken literally, the lack

of exposure to trade credit explains why students demonstrate a lesser understanding of it in construct four, as well as in their response to Question 26, equating accounts payable usage to free money.

Summary of Results

Entrepreneurship scholars appear to be doing an inadequate job of informing students about a common finance technique, trade credit, used by millions of businesses every day, all around the world (Ng et al., 1999; Petersen & Rajan, 1997; Wilner, 2000). Trade credit can be relatively inexpensive and simple to use (Nickels et al., 2013; Rogers, 2009); substitutes for a lack of available bank credit (Blasio, 2005; Huang et al., 2011; Huyghebaert et al., 2007; Internal Revenue Service, 1997; Petersen & Rajan, 1997; Wilner, 2000; Yang, 2011); and helps the entrepreneur better manage cash flow (Borgia & Burgress, 2000; Horngren et al., 2012; Richards & Laughlin, 1980; Rogers, 2009).

In contrast, entrepreneurial education demonstrates a significant bias in favor of VC, a rare and complex form of private equity finance (Lerner et al., 2012; Metrick & Yasuda, 2011). VC is primarily used during the growth and expansion phases of software, biotechnology, and energy companies (Gompers & Lerner, 2001; Zider, 1998) located in places like San Francisco, Boston, and New York City (Chen et al., 2010; Metrick & Yasuda, 2011). Firms attractive to venture capitalists must generate 20%–60% returns and scale very rapidly in sales in order to justify the risk to investors (Rogers, 2009; Smith & Smith, 2004). As a result, VC has such an acute connection to so few business models that many entrepreneurs have a better chance of winning a lottery than attaining VC funding (Bygrave & Zacharakis, 2008).

The types of businesses connecting with VC financing are attractive and exciting. Dot com firms like Amazon and eBay (Lerner et al., 2012; Metrick & Yasuda, 2011) used VC financing to grow their business models. Scholars, therefore, as well as textbook authors, and mass media use the term VC over and over again. In addition, VC is scarce and relatively unavailable (Cialdini 1985; Gierl & Huettl, 2010; Lynn, 1992; Lynn & Harris, 1997; Smith, 1876/1937; Veblen, 1899; Verhallen & Robben, 1994, 1995), heightening its appeal with scholars as well as students. Yet, despite the exposure, a majority of students surveyed really do not understand the intricacies of VC and how it fits into entrepreneurship.

As a result of the relative lack of exposure to trade credit, students may not understand how to negotiate with a supplier for better terms (Ng et al., 1999; Petersen and Rejan, 1997), align payments for merchandise with the sale of those goods (Ferris, 1991; Petersen & Rajan, 1997; Schwartz, 1974), and/or take an early-pay discount to increase the profitability of a firm (Ng et al., 1999, Weygandt et al., 2012). St. Paul, Minnesota's "Sound of Music," which eventually became Best Buy Corporation, was started using a $5000 personal loan to founder Richard Schulze, coupled with his ability to negotiate trade credit terms with his former employer, a home stereo equipment distributor (Rao, 2010). This is just one of many stories of using trade credit, essentially free financing, to bootstrap a start-up company with little or no actual cash (Kuratko, 2014; Van Auken, 2004; Winborg & Landström, 2001).

Implications for Practice

As a consequence of the bias revealed in this research favoring VC over trade credit, students are not being given an accurate representation of how to finance a

business venture. This bias appears so prevalent that some students may actually avoid starting ventures if they perceive their business model as unattractive because it does not fit with VC financing. Furthermore, if the lack of true understanding students possess about VC persists, nascent entrepreneurs could seek improper financing, resulting in dead ends and rejections or disastrous financial results. Historically, if would-be entrepreneurs perceived and summarily abandoned ideas not innovative enough for venture capitalists, over 97% of the products or services we enjoy today would be either significantly delayed or, worse, never see the light of day.

Recommendations and Final Thoughts

The results detailed here generated many interesting and insightful conclusions summarized throughout this chapter. Based on these findings it is clear that the entrepreneurial education community, including scholars, program directors, authors, and publishers, must do a better job of aligning the classroom message to students with that of real business practice.

Specifically, based on information detailed in the review of literature, it is clear that most entrepreneurs do not seek to launch a venture with the level of innovation, profitability, size, and growth that appeals to VC investors. This helps explain why VC is such an exclusive form of finance, located in such narrow geographical technology centers. To the contrary, some college students will graduate and chase the dream of a small business idea while possessing very little in financial resources. This lack of capital requires them to use any means of bootstrapping necessary to get a venture off the ground. Trade credit can help fill that void.

Based on the results of this study, I make the following recommendations to entrepreneurial educators:

1. Extensively discuss the use of trade credit in entrepreneurship courses, including the following:
    a. The effective use and appropriate exploitation of credit terms
    b. The impact of trade credit on venture cash flow
    c. Calculation of the cash gap formula
    d. How to ask for and negotiate for trade credit terms
    e. Examples of companies founded and/or managed using trade credit
2. Demand textbook publishers and authors better align entrepreneurship texts with practice, including better explanation of trade credit financing
3. Better educate students on the intricacies of VC, including the following:
    a. Deal flow and sourcing
    b. Monitoring
    c. Negotiating terms
    d. Valuation
    e. Implications of VC use
    f. Exits
4. Seek out or design assignments and cases incorporating a variety of finance options, including VC and trade credit

These recommendations address the primary concerns raised by the results.

Finally, entrepreneurial education does not have the lengthy history of other business disciplines nor does a degree in entrepreneurship guarantee either employment

or venture opportunities upon graduation (Katz, 2003; Kuratko, 2005; Napier, 2001; Pindur, Rogers, & Kim, 1995). As Kuratko (2014) so eloquently put it, entrepreneurs do not "preexist," meaning one must venture and innovate first to eventually emerge as an entrepreneur. In other words, a diploma does not an entrepreneur make. It is vital, therefore, that entrepreneurship programs offer students the most realistic curriculum possible in order to facilitate venturing and innovation, at some point, in all graduates choosing to embark on that journey. Central to any successful entrepreneurial endeavor, beyond a great idea, is the ability to secure the necessary capital to transform that idea into a sustainable business venture (Brue & McConnell, 2007; Horngren et al., 2012; Rogers, 2009). Teaching would-be entrepreneurs how to match the appropriate business model with the most suitable form of capital financing for that model should be one of the paramount goals of every entrepreneurship program.

Appendix A

Survey Instrument

Please take a moment to complete this **Entrepreneurial Finance Survey** by circling your desired responses. The survey is anonymous and voluntary and no incentives or rewards are offered for completing it. You may stop taking the survey at any time or elect not to participate and return a blank survey to the proctor. Thank you for your participation.

My gender is:	Male	Female				
My year in school is:	Freshman	Sophomore	Junior	Senior	Graduate Student	
My area of study is:	Entrepreneurship	Other Business	Engineering	Health Care	Other: _____	
Number of entrepreneurship courses completed is:	1	2	3	4	5	6	7	More

	Rate your level of agreement or disagreement with each statement to the best of your ability using the following scale: **(1 = Strongly Disagree, 6 = Strongly Agree)**	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1.	My professors have discussed "venture capital" in class.	1	2	3	4	5	6
2.	I have seen the term "venture capital" in a lot of different places.	1	2	3	4	5	6
3.	I am aware of the term "private equity financing."	1	2	3	4	5	6
4.	I am familiar with the term "scale" as it relates to business ventures.	1	2	3	4	5	6
5.	I have been exposed to the term "business valuation."	1	2	3	4	5	6
6.	My professors have discussed "high-growth companies."	1	2	3	4	5	6
7.	My professors have discussed "trade credit" in class.	1	2	3	4	5	6
8.	I have been taught that suppliers and vendors can finance a business.	1	2	3	4	5	6
9.	My professors have explained credit terms and what they mean to buyers.	1	2	3	4	5	6
10.	I have been given "trade credit" as a finance option on an assignment.	1	2	3	4	5	6
11.	I have been exposed to an in-depth discussion of accounts payables in class.	1	2	3	4	5	6
12.	I am familiar with the term "cash gap" and what it means to a business.	1	2	3	4	5	6
13.	I understand how "venture capital" works.	1	2	3	4	5	6
14.	I understand the risks and rewards associated with "venture capital."	1	2	3	4	5	6
15.	I know the kinds of companies that are a good fit for "venture capital."	1	2	3	4	5	6
16.	I can explain the importance of "valuation" in venture capital financing.	1	2	3	4	5	6
17.	I know the kinds of "returns" venture capitalists expect on their investments.	1	2	3	4	5	6
18.	I know what it means to "harvest" a venture.	1	2	3	4	5	6
19.	As an entrepreneur, I would know how to use trade credit to my advantage.	1	2	3	4	5	6
20.	I understand the finance relationship between suppliers and entrepreneurs.	1	2	3	4	5	6
21.	I am aware of the kinds of firms that use "trade credit."	1	2	3	4	5	6
22.	I can clearly explain what "Terms: 3/15 n60" means on an invoice.	1	2	3	4	5	6
23.	I can name at least one company that started by using primarily "trade credit."	1	2	3	4	5	6
24.	I understand how "trade credit" affects the cash flow of a business.	1	2	3	4	5	6
25.	When I hear "venture capital" I think "business partner."	1	2	3	4	5	6
26.	When I hear "accounts payables", I think "free money."	1	2	3	4	5	6
27.	Most successful entrepreneurs get financing from unrelated outsiders.	1	2	3	4	5	6
28.	The list of companies that use "trade credit" is probably pretty small.	1	2	3	4	5	6
29.	"$250,000 in exchange for 15% equity" is enough information to value a firm.	1	2	3	4	5	6
30.	Entrepreneurs receiving venture capital usually sell their business in 5 years.	1	2	3	4	5	6
31.	If I had to guess, at least 10% of all entrepreneurs receive "venture capital."	1	2	3	4	5	6
32.	I regularly watch TV programs like ABC's "Shark Tank."	1	2	3	4	5	6

Appendix B

Institutional Review Board Research Approval

REPORT OF ACTION: EXEMPT/EXPEDITED REVIEW
University of North Dakota Institutional Review Board

Date: 3/28/2013 **Project Number:** IRB-201303-288

Principal Investigator: Clement, Thomas A.

Department: Teaching and Learning

Project Title: Venture Capital vs. Trade Credit Financing: Is There a Bias in Favor of Venture Capital and What is the Impact on Students?

The above referenced project was reviewed by a designated member for the University's Institutional Review Board on 3/28/2013 and the following action was taken:

☐ Project approved. **Expedited Review** Category No. _____
Next scheduled review must be before: _____
☐ **Copies of the attached consent form with the IRB approval stamp dated _____ must be used in obtaining consent for this study.**

☒ Project approved. **Exempt Review** Category No. 2
This approval is valid until December 31, 2013 as long as approved procedures are followed. No periodic review scheduled unless so stated in the Remarks Section.
☐ **Copies of the attached consent form with the IRB approval stamp dated N/A must be used in obtaining consent for this study.**

☐ Minor modifications required. The required corrections/additions must be submitted to RDC for review and approval. **This study may NOT be started UNTIL final IRB approval has been received.**

☐ Project approval **deferred. This study may not be started until final IRB approval has been received.**
(See Remarks Section for further information.)

☐ Disapproved claim of exemption. This project requires Expedited or Full Board review. The Human Subjects Review Form must be filled out and submitted to the IRB for review.

☐ Proposed project is not human subjects research as defined under Federal regulations 45 CFR 46 or 21 CFR 50 and does not require IRB review.

☐ Not Research ☐ Not Human Subject

PLEASE NOTE: Requested revisions for student proposals MUST include adviser's signature. All revisions MUST be highlighted and submitted to the IRB within 90 days of the above review date.

☒ Education Requirements Completed. (Project cannot be started until IRB education requirements are met.)

cc: Dr. Steven LeMire

William L. Hancock 3/28/2013
Signature of Designated IRB Member Date
UND's Institutional Review Board

If the proposed project (clinical medical) is to be part of a research activity funded by a Federal Agency, a special assurance statement or a completed 310 Form may be required. Contact RDC to obtain the required documents.

(Revised 10/2006)

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