

8-2017

To grow or not to grow: Socio-cognitive determinants of small and medium firm growth and threshold mentality

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TO GROW OR NOT TO GROW: SOCIO-COGNITIVE DETERMINANTS OF SMALL AND
MEDIUM FIRM GROWTH AND THRESHOLD MENTALITY

A Dissertation

by

DAVID A. ALVARADO

Submitted to the Graduate College of
The University of Texas Rio Grande Valley
In fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

August 2017

Major Subject: Business Administration

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MEDIUM FIRM GROWTH AND THRESHOLD MENTALITY

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August 2017

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ABSTRACT

Alvarado, David A., To Grow or Not to Grow: Socio-Cognitive Determinants of Small and Medium Firm Growth and Threshold Mentality. Doctor of Philosophy (Ph.D.), August, 2017, 209 pages, 30 tables, 3 figures, 297 references, 5 appendices.

Small business owners (entrepreneurs) are heterogeneous in their motivations and goals, with some seeking to expand firm scope, size, and purpose, and others seeking stability. The small firm growth literature indicates that growth intention varies, but why does it vary so much, and so often? Why do some firms have a threshold mentality, represented by a stability intention, while others have a growth intention? To explore these questions, this dissertation empirically examines the socio-cognitive determinants of small firm growth intentions.

Participants included owner/managers of independent Small and Medium-sized Enterprises (SMEs) decision-making authority for their firms. 159 usable responses were obtained from the United States. Those responses were analyzed using hierarchical moderated regression and mediation analysis.

The results of this study indicate that Managerial Optimism predicts small firm Growth Intention, but Fear of Failure does not. Furthermore, Managerial Optimism's influence over growth intention is fully mediated by market information interpretation as opportunity. Market information interpretation as threat, however, does not predict small firm Growth Intention. Social Capital in the form of business and community organizations directly predicts small firm growth intention, regardless of market information interpretation outcome. Finally,

Entrepreneurial Orientation does not play any moderating role between market information interpretation and Growth Intention.

The findings presented here imply that the development of Growth Intention, even in small firms with relatively simple command structures, is a complex process that depends on both personal and social factors, and that changes in nature depending on how the manager perceives their market environment. This research significantly extends the literature in illustrating how these processes function, and in providing a guide for further research.

DEDICATION

For my father, my mother, my wonderful son, and most of all, for the best wife anyone has ever had or ever will have.

ACKNOWLEDGMENTS

For all of his support, not only through the dissertation process, but through my entire doctoral education, and for helping me enormously in pursuing my goals on my terms, I will always be grateful to Dr. Michael A. Abebe, who is not only my dissertation committee chair and professor, but a true friend. To my committee members, Dr. Sibin Wu, Dr. Jennifer L. Welbourne, and Dr. Philip G. Gasquoine, I owe great thanks for their advice and counsel over the years, and for their thoughtful insights and attention to detail in helping me produce this work. Through a difficult time in my life, I feel so lucky to have been in the company of such kind and supportive people.

I would also like to thank Dr. Ralph Carlson for his kindness, support, and help in understanding both the puzzling and the profound. Finally, I would like to thank Dr. Yong Lang, who first set me on the path I am on, and without whom my life would be immeasurably less happy. What I owe to your presence in my life is far too much to write here.

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CHAPTER I

INTRODUCTION

Small and medium-sized enterprises (SMEs), or firms with under 500 employees, are often touted as the driving forces behind economic growth, yet there does not appear to be a relationship between net growth rates and firm size. The small businesses that do make a large contribution to economic growth are nascent firms – firms being born (Haltiwanger, Jarmin, & Miranda, 2013). In these firms, the intention to grow is safe to assume; it is a requirement of firm creation. What best distinguishes one small firm's growth from that of another is whether a firm has the intention to grow, and then takes action to make it so. Growth intention is a choice, not a function of firm-smallness. For this reason, the study of small business growth and entrepreneurship (defined sometimes as starting a new business but more broadly as initiating new business activities) has been of both theoretical interest to business researchers and economists, and of practical interest to policymakers and business leaders. Again, this is not simply because such firms are small, it is because understanding what distinguishes growing small firms from stagnant small firms is essential to meaningful growth outcomes.

One of the problems facing small business growth research is that the facts of small business growth have often not mirrored the rhetoric. For example, policy initiatives have focused on the availability of financing, when the US Census Bureau's (2012) data has consistently indicated that personal or family assets are the predominant source of expansion

financing for small business owners. This may be an indication of the limitations of institutional financing, but it may also indicate that small business owners believe that their firms should be self-sustaining in order to be worthy of expansion; perhaps they believe that doing otherwise represents action contrary to that which is supported by the market. Likewise, firms may in some cases be limited by their confinement to a specific locale, or to the maturity of the industry they inhabit (Davidsson, Achtenhagen, & Naldi, 2005).

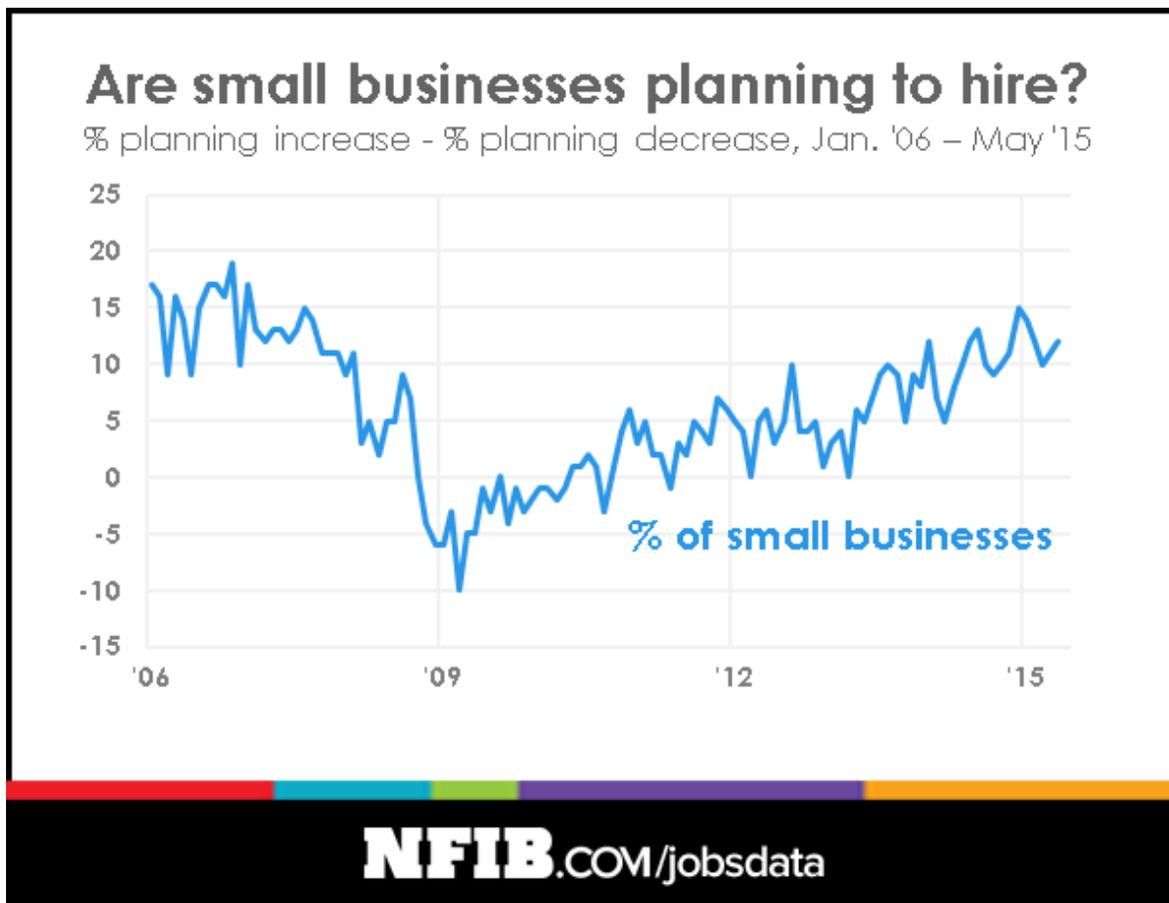
What this data does indicate is that small business owners depend upon their personal assets to determine the possibility of expansion. Owners are thus depended upon by their firms as the central determinants of whether or not expansion should be attempted. Aside from market forces, institutional support, and other external factors, expansion is highly dependent on the will of the small business owner to see it as a desired outcome.

Determining what is meant by expansion, however, is by no means simple. Recent data regarding the period post-Great Recession of 2007-2009 shows that for small businesses, growth in absolute head count was of interest to the overwhelming majority of owner/managers, but that roughly one third of such owner/managers targeted head count goals that represented their pre-Great Recession employment levels (Dunkelberg & Wade, 2011). For these owner/managers in particular, employment growth may have represented a return to their vision of the firm's proper or ideal (pre-recessionary) form, rather than anything like expansive aggression or what is commonly understood to be entrepreneurship, such as risk-taking, proactiveness, and innovativeness, (e.g. Miller, 1983; Covin & Slevin, 1989).

Another complexity in our understanding of small firm growth is made clearer by research that makes a distinction between firm size and firm age. While the discussion of small business growth frequently focuses on firm size (hence the "small" in small firm growth),

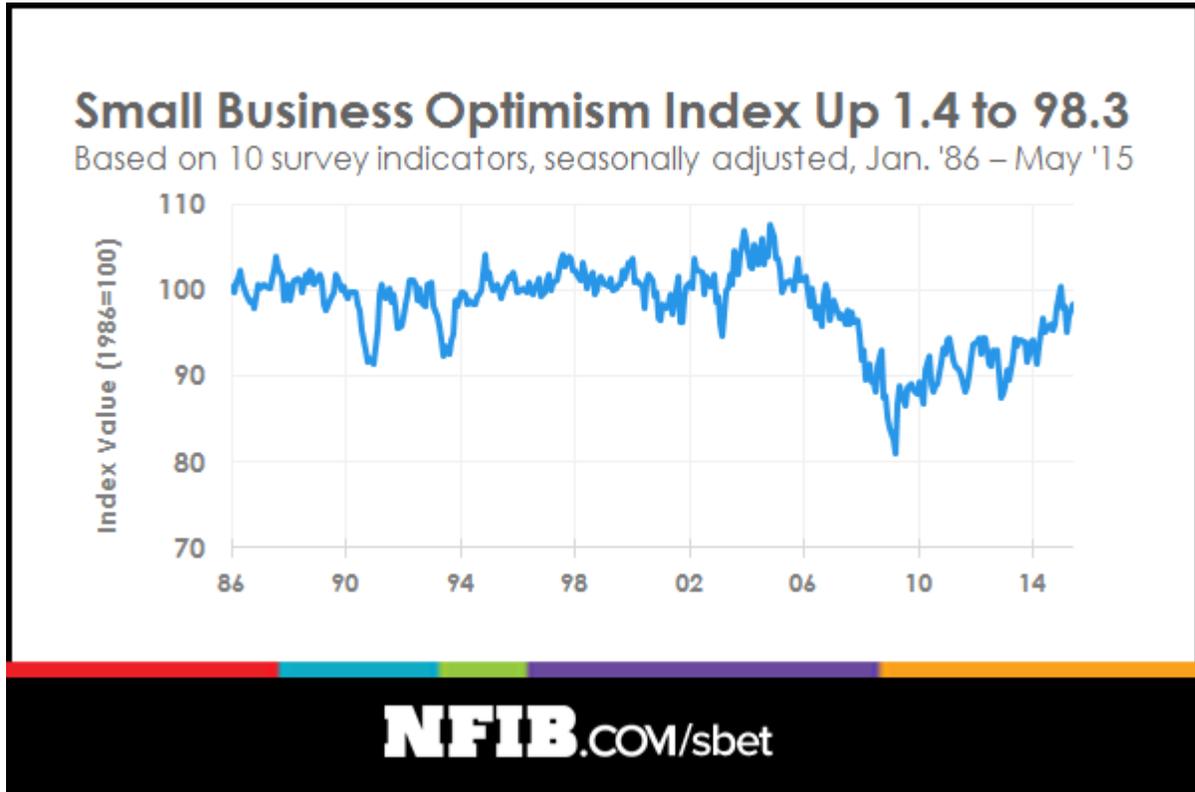
Haltiwanger et al. (2013) found that firm size and firm age were related to growth outcomes in notably different ways. During the Great Recession, firms that were both young and small went through relatively larger decline, as they were more susceptible to local economic factors including cyclical shocks and housing price shocks. Figures 1 and 2 (below) provide some indication of the extent to which the normal states of hiring and optimism were affected by that recession. Increases in both firm size and age appeared to reduce the impact of such shocks on small firm decline. On the other hand, Haltiwanger et al. (2013) also found that when it came to job creation, firm age was related, but firm size was not. Such findings agree with earlier studies noting a distinction between firm size and age (Calvo, 2006; Coad & Tamvada, 2012).

Figure 1. 2015 Survey of Small Business Growth Plans (2006-2015)



Source: National Federation of Independent Businesses (NFIB) Research Foundation

Figure 2. 2015 Survey of Small Business Growth Plans (1986-2014)



For all of the discussion of firm growth in the entrepreneurship literature, the question remains as to whether, or why, the small business owner/manager should want their firms to grow. A lack of growth intentions may be due to the firm's alignment with the personal goals that owner/managers have set for their businesses as an extension of their identities. The intention to seek firm-level stability may represent the desires of owner/managers for their firms to serve a function of providing stability for them or for their families (Runyan, Droge, & Swinney, 2008). The desire for stability may also be due to their perception that they have reached some sort of limit, or threshold, that exists due to their differing vision of what size and form of business entity is manageable and desirable (Cliff, 1998). There is a notable gap in the

literature in terms of addressing both social and cognitive contexts that might explain the existence of such a threshold, and this dissertation seeks to address that gap directly.

These and other studies that link firm growth intention to firm growth point our attention squarely in the direction of the owner/manager of the firm as we seek an explanation for the growth, or lack thereof, of the small firm (Morrison, Breen, & Ali, 2003; Wiklund & Shepherd, 2003a). In a small firm, the growth orientation of the firm is determined by the manager, not the other way around (Runyan et al., 2008). If financing from personal and family resources and friends are the primary determinant of growth-related investment in small firms (Carpenter & Peterson, 2002; U.S. Census Bureau, 2012), then the nature of one's close personal support is highly relevant to small firm growth, more so than commonly considered external financing sources. This also means that a commitment of an owner/manager to growth represents a commitment of the resources of those closest to them (including themselves).

Likewise, if firm age, rather than size, is more relevant to small firm growth characteristics, then we need to consider what it is about the firm that changes over time (Calvo, 2006; Runyan et al., 2008). If firm age is more determinative of firm growth than firm size, then there may be different goals over time, and changing levels of achievement relative to those goals over time (Davis & Shaver, 2012). These could account for differences in growth aspirations, as could the maturation of the manager's goals for the firm. In that case, the changing goal, rather than the changing firm, could determine whether a growth aspiration exists or not. To more completely address this problem, growth models need to be able to include factors that lead to changes in relevant firm characteristics, relevant owner/manager characteristics, and growth intentions as a function of these antecedents. Such models must be able to account for not only growth and failure, but also stability.

1.1 Statement of Problem

Entrepreneurship research has extensively studied the issue of growth, both as a means of evaluating the performance of firms, and in some cases, as a means of defining entrepreneurship itself. Research and discussion of the topic of entrepreneurship has focused repeatedly on growth as an outcome (Leitch, Hill & Neergaard, 2010; McKelvie & Wiklund, 2010; Pisano, Ireland, Hitt & Webb, 2007; Wiklund & Shepherd, 2003a), so much so that it appears to be the most common means of justifying entrepreneurial research or defining research as entrepreneurial. Positive growth intention has been so generally taken as a given when describing the small business manager, that there has been considerable study of antecedents and processes leading to growth as an outcome, or citing the importance of growth as a motivation for studying small firm behavior (Butler, Doktor & Lins, 2010; Davidsson, 1989; Davidsson, Delmar & Wiklund, 2002; Delmar & Wiklund, 2008; Zahra, Hayton & Salvato, 2004). The small firm growth literature has focused so extensively on the antecedents of a growth outcome, or positive growth intention outcome, that it has done so to the exclusion of factors that could explain why so many small firms neither grow nor fail. This creates a problem in that it may lead to confusion as to what, if anything, separates entrepreneurship research from firm growth research.

While growth is not universally accepted as definitive of entrepreneurship (Davidsson, 2003), and may be measured in many ways (Davidsson et al., 2005), it is easy to understand why it has nevertheless been described as “the very essence of entrepreneurship.” (Sexton, 1997, p. 97). Growth is a change process (Wiklund, 1998), and because firms in this body of literature have typically been presumed to have managers with strong growth intentions (Autio, Sapienza & Almeida, 2000; Chen, Williams & Agarwal, 2012; Feeser & Willard, 1990), most managers

are presumed to have an inclination toward changing the way in which firm resources are organized and used.

Many managers, however, appear to have a “threshold mentality”, which is to say, there is a size that represents a point beyond which growth is no longer desirable (Cliff, 1998). There are significant reasons to question the assumption that managers seek growth. It may be difficult to find research data identifying managers who intend for their firms to fail, but there is research indicating that many small firms do not aggressively pursue growth (Aldrich, 1999; Storey, 1994). This fact, that there are so many stable or only slowly-growing small firms, conflicts with the common assumption in the entrepreneurship literature that most managers seek growth, when in fact studies have indicated that a majority of managers do not have strong growth aspirations (Delmar & Davidsson, 1999; Human & Matthews, 2004). These studies align well with the notion that the growth of many small firms is constrained by managerial intention, and they may help explain the reason for the findings of Haltiwanger et al. (2013), that firm age, rather than size, was more predictive of growth intention. Nascency may be a more consistently reliable predictor of one’s distance from a threshold mentality than firm size.

Because growth is a change process (Wiklund, 1998), it poses a problem for those whose identities and personal values align closely with the nature of their existing firms. Within such firms are the managers that this research aims to understand: those who do not wish to fail, but who also do not wish to change or are not able to change. Many such managers do exist (Aldrich, 1999; Cliff, 1998; Davidsson, 1991; Davidsson et al., 2005; Greve, 2008; Runyan, Droge & Swinney, 2008, Samuelsson, 2004), but the literature has yet to connect the antecedents of firm growth intention in a model that simultaneously accounts for dispositional, cognitive and social influences. It has been argued that entrepreneurship research should focus its efforts “at

the intersection of the constructs of individuals, opportunities, modes of organizing, and the environment” (Busenitz et al., 2003, p. 285). This research aims to focus on the nature of individuals, on the sources of opportunity and methods of exploiting it, and on the means by which individuals interpret their environments. Research is needed that explores paths to both growth intention and a lack thereof, including an accounting for the possibility that some managers who do not seek growth would seek it if only they knew how, or believed it was possible. Such research should also, in the interests of strengthening the distinction between entrepreneurship and growth, acknowledge that the manager of a stable firm may engage in entrepreneurial activities, including opportunity and threat identification, new information discovery, issue interpretation, and exploitation, all in the interests of defending their firm’s form and vision and thereby preserving its identity. This too might be considered success.

1.2 Purpose of Dissertation

This dissertation makes several assumptions. Firstly, it assumes that small firm growth intention leads to actual growth. Secondly, it assumes that social context has a significant impact on small firm growth intention. Both of these assumptions are highly consistent with the vast literature on entrepreneurial intention (Mitchell et al., 2007) as well as the key arguments of the Theory of Planned Behavior (Ajzen, 1991). Finally, this dissertation assumes that small firm managers actively scan and interpret market information (Barreto, 2012).

This dissertation has multiple purposes. Firstly, this dissertation will attempt to provide a socio-cognitive model of firm growth intention that is capable of explaining not only growth intention but also stability intention. Managerial growth intentions among entrepreneurs have been shown to be heterogeneous, and also to change over time due to a combination of factors (Dutta

& Thornhill, 2008). The factors of interest for this research will include relatively stable owner/manager characteristics that influence managerial interpretation tendencies and differences, personal/social sources of interpretable information, the manner in which information is classified into distinctly different subtypes, and finally, owner/manager characteristics that shape how interpreted information is translated into intention.

Particularly in small firms, the manager's interpretations serve as the interpretations of the firm, and it is these interpretations of external factors, along with managerial tendencies, that ultimately determine the direction of the firm. Managerial tendencies include dispositions toward interpreted information, such as propensity towards risk-taking, proactiveness, and innovativeness as often measured through Entrepreneurial Orientation (EO: Miller, 1983; Covin & Slevin, 1989), and propensity to align one's personal and work life values with each other, as has been measured through Small Business Orientation (SBO: Runyan et al., 2008). Sources of interpreted information in small firms include the manager's own personal awareness of the environment, much of which comes from the information and resource access provided by social capital (Adler & Kwon, 2002). Such socially acquired resources and information are particularly relied upon for opportunity identification and resource acquisition in small firms (Stinchcombe, 1965; Singh, Tucker & House, 1986; Chollet, Géraudel & Mothe, 2014), and provide the basis for the manager's own models of behavior (Bandura, 1977). The issue to be addressed, then, is one that integrates issues of both nature and nurture through a socio-cognitive framework. For those firms in which the possibility of growth exists, but growth is not occurring, this dissertation hopes to provide an explanation of the factors that may be restraining growth. At the same time, this research will emphasize the importance of the owner/manager to firm growth, through a

discussion of the means by which growth intention leads to growth, and an exploration of the antecedents of growth intention.

1.3 Research Questions

Some small business owners are content with their firms as they exist, in form, size, and purpose, seeking stability (Cliff, 1998; Davidsson, 1991). They attain a threshold, and having done so, find a level of comfort that they seek to maintain. This threshold is something that is either desired from the origin of the firm, or something that becomes sufficiently well-known that it allows for relatively lower levels of mental effort, perhaps after a period of uncomfortable stress. For others, the threshold may itself be stressful, representing stagnation, or a failure to continue a vision for the firm that is defined by growth. The literature indicates that growth intention varies, but why does it vary so much, and so often? Why do some firms have a threshold mentality, represented by a stability intention, while others have a growth intention?

This paper seeks to address the existing gap in the literature by addressing the following research questions: (1) Do certain managerial characteristics such as optimism and fear of failure predict small firms' growth intentions? Drawing from the existing literature, I propose that they do. (2) What role, if any, does managerial social capital play in facilitating or hindering small firm growth intentions? If, after all, most small businesses finance their expansions through highly proximate sources, there is almost certainly a financial and physical resource role. It seems reasonable, then, that there should be an information resource role as well. (3) What are some of the cognitive processes that facilitate or hinder small firm managers' growth intentions? (4) Does managerial market information interpretation predict small firms' growth intentions? This research proposes that it does, and that because of the importance of information

interpretation, a greater focus on managerial characteristics and social capital is warranted. (5) Are managerial interpretations of market information as gain (opportunity) or loss (threat) related to small firm growth intentions? This issue needs to be explored with some detail, as research has shown that managers are differentially sensitive to threats and opportunities (Jackson & Dutton, 1988), and that categorizing information into one of these types does not preclude its simultaneous categorization into the other. (6) Finally, what role does EO play in small firms' growth intentions? Specifically, does EO moderate the relationship between managers' market information interpretation and small firm growth intentions? As a relatively stable managerial orientation, EO may very well be the difference between the intention to act or not once information has been interpreted as a threat or as an opportunity.

1.4 Contributions to Research & Practice

This research contributes to existing theory by laying out a model that not only asserts the importance of the owner/manager to firm outcomes, but also explains the process by which the connection is made from owner/manager characteristics, through cognition, to firm outcomes. At the same time, the proposed model explains firm outcomes that are both consistent with entrepreneurial literature that has focused on growth, and with the existing and somewhat contrary empirical findings that a great many firms exist in a state of intentional stability.

Such a view that integrates and explains social context, cognition, intention, and firm stability as they relate to each other has been missing from the literature thus far. This research explains how intention evolves from both stable and fluctuating influences, and from internal and external sources. In doing so, this research aims to provide contributions to both theory and

practice, by explaining the process leading to growth intention in a way that explains multiple firm growth and growth intention outcomes, including the understudied area of stability.

This dissertation makes the following three scholarly contributions. Firstly, this research makes a contribution by providing a model which clarifies that while some growth intentions and stability intentions represent a clear alignment between the interests of firm-level activity and the personal goals of the owner/manager, other growth or stability intentions represent a disconnect between available resources and utilized resources due to lack of initiative or vision, or issues of confidence and understanding of the firm's potential. Secondly, this research contributes to an explanation of why there may be a disconnect between the personal drive of the business owner/manager and the social reach required to gain market information about opportunities, threats, and needed firm resources. In other words, this research also provides a contribution to theory in terms of its emphasis on the importance of an alignment between the several factors that translate a general vision into intention, modeling how visions of both stability and visions of growth may be difficult to manifest in the context of social and cognitive misalignment.

Thirdly, this research extends the concept of threshold mentality, first explored in literature related to gender differences in growth intentions (Cliff, 1998), and expands that concept to broader application to more general entrepreneurial contexts. While such thresholds may exist due to perceptions of manageability and control, they might also be a function of the manager's interpretation that given their available resources and understanding of the market, there is no clear or safe path to growth. From a cognitive point of view, the manager may lack a mental model, or interpretive scheme through which information is interpreted (Huff & Schwenk, 1990). Such a model could help the manager understand how to proceed to growth given existing resources and market conditions. Likewise, a manager may have a mental model

of how growth could occur, but still make the interpretation that their resources and market conditions do not fulfill the requirements of that model. The concept of a threshold mentality can include limitations that managers deliberately set for themselves, but it can also include limitations that are set through a combination of external factors and internal cognitive interpretation. In this sense, the use of the term threshold mentality in this research is for practical purposes inclusive of the conventional sense of a threshold as a minimum, but also uses the term to refer to what are essentially self-imposed ceilings on growth. This research aims to discover how such limitations are reached, but also potentially how they might be overcome.

As such, this dissertation also contributes to practice. From a practitioner's point of view, this research addresses the need for both an analysis of one's own perspective and attitude with regard to a firm's possibilities, but also one's own position within a broader social context that ultimately brings with it more information, and potentially more resources. In doing so, and in clarifying the importance of the antecedents of growth intention, this research provides a model that emphasizes the need for owner/managers to consider, or reconsider, their own personal characteristics and social position, as well as the manner in which they interpret available information. In making the importance of these issues more apparent, they offer the practitioner a push toward self-awareness and self-reflection.

The importance of the owner/manager's position is addressed, as is the impact of owner/manager characteristics, and the influence of the owner/manager's social context. Finally, this research describes the way in which all of these factors combine to create an interpreted reality, intention, and ultimately growth outcome. In doing so, the practitioner is better able to determine how to make use of existing conditions, either reacting to them or enacting new conditions, all with the goal of attaining whatever outcome best represents the owner/manager's

vision of the firm. Through the use of established constructs, measures and theory combined in a relatively novel but logically consistent manner to address longstanding issues of both theoretical and practical significance, this research is designed with both falsifiability and utility in mind (Bacharach, 1989). This work seeks to develop a causal map that leads to small firm growth through growth intention and its antecedents, and in doing so, contribute a theoretical insight. At the same time, this research draws upon existing theory and empirical results that will be familiar to informed scholars, attempting to draw out new insights from non-controversial and established work, insights that articulate previously unconsidered complexities, and that are useful to theory building and practice.

1.5 Organization of Dissertation

The remainder of this dissertation is organized as follows. Chapter 2 will provide a review of existing literature relevant to small firm growth, firm growth intention, managerial cognition, social capital, and other managerial characteristics that are relevant to the topic of this research. A review of existing theoretical and empirical findings will provide the context within which this research takes place. Chapter 3 will describe literature specific to supporting the model presented in this research, including discussion of the constructs and the theorized relationships that are presented and tested in this research. Chapter 4 will describe the means by which the constructs in the model are to be measured, a justification for the use of those measures, and the analytical method by which the relationships in the model will be tested. Chapter 5 will provide the results of the analysis described in the methodology section of this work, and Chapter 6 will discuss the results in a conclusion that indicates implications for theory and practice, as well as future research.

CHAPTER II

LITERATURE REVIEW

The goal of this chapter is to review the major scholarly developments of small firm growth research, and to summarize the major findings thus far. In the following sections, I will present an overview of firm growth as it relates to entrepreneurship, a description of the contextual factors studied in relationship to firm growth, and studies of the relationships between socio-cognitive factors and both growth intention and firm growth. In doing so, this chapter attempts to provide a historical development perspective on the growth literature, a context for further research in the area, and an overview of the literature relevant to the specific research conducted in this dissertation.

2.1 Firm Growth and the Entrepreneurial Process

There are a few core elements to the entrepreneurial process: discovery, interpretation, and exploitation (Shane & Venkataraman, 2000). It is easy to see why they are so essential to new firm creation, and it is also easy to see that the context of new firm growth is not the only context in which such elements can exist (Zahra, Ireland & Hitt, 2000). The entrepreneurship literature understandably has some difficulty with disentangling whether entrepreneurship refers to new venture creation, to growth, or to broader entrepreneurial activities, especially as many entrepreneurial studies focus on new venture formation. Defining entrepreneurs in this way,

however, is too restrictive. All of these points have long since been well-made in Shane and Venkataraman's (2000) seminal work on entrepreneurship. Entrepreneurship, as they put it, is "the study of sources of opportunities; the processes of discovery, evaluation, and exploitation of opportunities, and the set of individuals who discover, evaluate, and exploit them." (p. 218)

The logic of this definition is consistent with Davidsson (1989), who notes that growth is to be considered more entrepreneurial than stability. From this point of view, as starting a firm is also growth, it is also considered a manifestation of entrepreneurial tendency. Davidsson (2003) notes that growth driven by opportunity-identification is distinct from demand-driven growth. The former is considered entrepreneurial, while the latter is not. In other words, entrepreneurship is not synonymous with new venture creation, although new venture creation may in many cases be a manifestation of entrepreneurship.

Likewise, growth is not synonymous with entrepreneurship, as it may occur in the absence of entrepreneurship, yet entrepreneurship can, and does, drive growth. Growth is a change process that manifests itself through a series of stages (Davidsson et al., 2005), and during such a process it would be an "oversimplification to assume that nothing else but size changes" (Wiklund, 1998, p. 87). Growth may mean many things. Specifying entrepreneurial growth provides a meaningful and distinct definition for the purposes of discussing growth related to managerial intention, cognition, and ability, without confounding the issue by the addition of growth that occurs without the consideration or intervention of the manager. There is also an argument to be made that even growth that does not occur at the behest of the manager, for example growth driven solely by demand for existing products, might not normally be considered entrepreneurial (Davidsson, 2003), but must nevertheless be successfully dealt with by the manager. This may be especially clear when such growth requires organizational changes

or new resource acquisition, as each stage of firm growth, including those beyond new venture creation, brings different challenges to the firm, and navigating those challenges requires continuous opportunity identification and response (Hite & Hesterly, 2001).

For the entrepreneur, firm growth is not only dependent upon growth motivation (intention), it is also dependent upon management's ability to identify opportunities to grow, and to develop methods to exploit those opportunities (Wiklund & Shepherd, 2003a). Calvo's (2006) findings, in a study of 1272 Spanish manufacturing firms, indicated that innovation, or the exploration and exploitation of new product and process opportunities, was associated strongly with both firm survival and firm growth. Accordingly, one could say that entrepreneurship is important to small firm survival, by way of its three stages of opportunity manifestation, discovery, and exploitation (Shane & Venkataraman, 2000). These stages of entrepreneurship are complemented by the characteristics required of the entrepreneur, namely: ability, need, and opportunity (Davidsson, 1991). Not only must the opportunity exist, be discovered, and chosen for exploitation by the firm, the firm must also have the need and the ability to exploit it. Other models of firm growth have included similar antecedents, including aspiration, education and experience, organizational resources, market constraints, and environmental dynamism (Covin & Slevin, 1997; Wiklund & Shepherd, 2003a), which arguably are manifestations of need, or ability, and opportunity (in some cases perceived, and in some cases objective).

The literature regarding small firm survival has provided some indications that firm stability may not be a primary focus of researchers, but it is a primary focus of many managers. Davidsson et al. (2005) note that successful small firms tend to grow organically, and by securing profitability before seeking growth (organic growth in this context is understood to mean growth that does not occur through acquisition). Their research also found that small firm

managers were commonly reluctant to pursue a growth strategy for their firms. In fact, it appears that the majority of managers do not have strong growth aspirations for the firms they found (Delmar & Davidsson, 1999; Human & Matthews, 2004).

At the same time, managers' attitudes towards growth and their vision for how growth meets the needs of the firm determine growth intentions, and growth intentions are not universally positive (Wiklund, Davidsson & Delmar, 2003). Wiklund et al. (2003) provided an analysis indicating that "financial gain is not the outstanding determinant of attitude toward growth" (p.264), noting the importance of the similarly-themed issues of maintaining the independence of the firm, of maintaining their managerial control over the firm, and crisis-management. At the same time, managers appear to be influenced by consistent concern for the well-being of their employees when considering firm growth. All of these factors point to managerial concern for a firm's nature, driven by an ideal or vision that exists in the mind of the manager, as being the force that compels or restrains growth intention.

2.2 Antecedents of Small Firm Growth

The antecedents of small firm growth have been studied extensively (see Table 1 below), and from several perspectives, including analysis of managerial characteristics, firm resources, and organizational demography. The following sections represent a review of small firm growth antecedent literature at all of these levels of analysis. As such, the literature reviewed in this section represents the mainstream research that has been conducted regarding small firm growth, including the issues considered and the measures most typically used.

2.2.1 Managerial Characteristics and Small Firm Growth

Both finance and managerial intention are important to small firm growth (Wiklund & Shepherd, 2003a), and further studies have shown the importance of managerial personality, long-term vision, and attitude toward growth in determining firm outcomes. Growth intention was found to be positively related to firm growth in Wiklund and Shepherd's (2003b) study of 326 Swedish small business CEOs. Growth motivation has been found to be somewhat influenced by past performance, but is otherwise relatively stable, and influences both employment growth and sales growth. In a study of 863 small Swedish firms, Delmar and Wiklund (2008) found that past motivation influenced future motivation, and that past growth influenced future growth. Also of importance in this study was the finding of notable variance in managerial growth motivations between managers, and the finding that such motivations influence the achievement of growth. This finding lends importance to the concept of motivational stability: "motivations have to be stable to be good predictors of behavior. Hence, growth motives are effective predictors of firm growth when they are stable over time" (p. 450). Research conducted by Manolova, Brush, Edelman and Shaver (2012) supports the contention that growth intention is a function of the manager's motives. At the same time, the manager's motives are often not economic growth or economic returns. Hence, motivation and motivation stability are significant, and at the same time they may not be aimed squarely in the direction of growth.

A study of rapidly growing Australian SMEs found that even firms aiming only for fast growth used different metrics to interpret their success, and that such firms have notable variation in their levels of motivation (Tan & Smyrnios, 2011). The interview-based case studies of 18 Australian SMEs found that metrics used by the firms included not only profitability and

growth, but also customer satisfaction, industry recognition in the form of awards, client appraisals, online popularity, quantity and quality of innovation, employee performance, and employee turnover. In other words, two managerial respondents who indicate that their firms are aiming for fast growth may have very different goals in mind.

There are indications that there are managerial characteristics that are precursors to firm growth intentions, and thus growth outcomes. In other words, there may be managerial characteristics that are self-limiting. Cliff (1998) described the existence of a business-size threshold, representing a point at which further firm expansion would be seen by the manager as no longer desirable. Possible indicators of such a threshold are described in that paper as “the size that enables him/her to maintain control of the organization, devote a reasonable amount of time and energy to the firm, and/or balance work and personal life” (p. 523). In other words, firm growth limits are not only set by real external market factors and interpreted internal perceptions, they are also set by internal perceptions of what role the business should play in the manager’s life. Does the business serve the manager, or does the manager serve the business? Decisions about the extent to which one sacrifices family or personal life are relevant to the manager’s intention to grow their firm. At the same time, the manager’s level of comfort with the issues that arise due to larger firm size are also determinative of whether the manager plans to grow their firm or not. As Human & Matthews (2004) found, founders tend to prioritize the manageability of their firms over the pursuit of higher levels of growth.

Cliff (1998) explores the issue of threshold from the point of view of gender differences, noting that female small business managers tended to approach expansion with more caution, more weight to personal considerations, and lower business-size thresholds than their male counterparts. Yet, gender in and of itself is not an adequate descriptor of the differences

underlying variation in desired firm outcomes, and thus growth intentions. Firstly, it is clear that most small firms reach a growth threshold (Leitch et al., 2010), so the arrival at a growth intention oriented towards stability is not characteristic of a subset of small businesses, it is the norm. Secondly, Fischer, Reuber, and Dyke (1993) found that between-gender differences were explicable in terms of motivation and other factors including experience differences (in some cases attributable to systemic discriminatory differences in opportunity) that appear to lead to firm outcome differences. This points to the importance of how managers are socialized towards or against certain values that shape their business-related orientations. In other words, some characteristics that are manifested in both genders, but exist more prominently in one, appear to explain outcome differences. Supporting this contention is the finding that differences in the effect of socialization on business attitudes appear to apply not only in terms of gender, but also in terms of national culture (Autio, Pathak, & Wennberg, 2013). In both contexts, different experiences lead to different goals, which in turn may lead to interpretations of success with widely varying degrees of correlation to common financial and market-based performance measures. Attitudes toward growth are often determined by non-economic concerns. Wiklund et al. (2003) found in a study of 1470 owner-manager respondents that employee well-being was the most likely explanation for growth motivation, not personal financial gain. Their study supports the contention that managerial attitudes regarding the value of growth were determined in large part by the perceived benefits and downsides of such growth.

Small Business Orientation (SBO) accounts for variation in the purpose a manager attaches to the business they run and the emotional connection the manager has with the business they run. Specifically, they found that a fit between personal and work life was an important determinant of SBO, as were the manager's love of their business, the extent to which the goals

of the business were connected to the manager's family needs, and the extent to which the business was considered by the manager to be an extension of their personality. The same study found that while the entrepreneurial constructs of risk-taking, innovativeness, and proactiveness (Miller, 1983; Covin & Slevin, 1989), which were operationalized into EO, were related to firm performance in younger (<10 years) firms, SBO was a better determinant of firm performance in older (>10 years) firm. Runyan et al. (2008) found that from the point of view of the firm, a managerial conversion from EO to SBO over time appears to be more beneficial than the unchanging dominance of either orientation. The finding that EO was positively correlated to performance in younger (<10 years) firms is accompanied by the finding that SBO was neither positively nor negatively correlated with performance in younger firms. Likewise, in older (>10 years) firms, although SBO was positively correlated to performance, EO was not a detriment, but neither was it consistently a benefit. Thus, these orientations do not have opposing influences on performance, but rather complementary influences that appear to be balanced by firm age.

Another indication that a relatively stable characteristic like EO may under certain circumstances have its presence overwhelmed by other factors is found in the research of Davis and Shaver (2012), who found that there were age and gender differences related to high levels of growth intention. Specifically, they noted that women and men exhibited different likelihoods of high growth intention depending on their age-related career state, using Becker and Moen's (1999) categories of anticipatory, launching, establishment, and shifting gears. These categories in turn were developed as a part of the larger body of work in Life Course Theory (Elder, 1994; Elder & Giele, 2009). In making use of these categories, Davis and Shaver (2012) point to a difference in gender perceptions of the importance of entrepreneurial behavior in the manager's

life, but also points to significant differences in both genders that indicate a generally declining presence of high growth intention as career stage progresses. “Both men and women are most likely to express high growth intentions early in their career development, a time associated with low levels of human capital but also with lower levels of familial obligations” (p. 506). Notably, however, the study did not test hypotheses related to either human capital or social capital, although controls for prior industry experience, prior industry experience, prior startup experience, and the attainment of a bachelor’s degree (human capital items) were used as controls.

2.2.2 Firm Resources and Small Firm Growth

Growth does not appear to be caused by factors that can be fully measured through the use of simple descriptive characteristics of firms or their owners. Anderson, Gabrielsson, and Ingemar (2004), in a study of 135 small manufacturing firms, found that firm size, firm age, firm technology level, CEO age, and quantity of formalized meetings did not determine firm internationalization. On the other hand, the firm’s interpretation of the existence of dynamic environments with innovation opportunities was determinative of firm international activity. This depends, however, on the firm’s ability to obtain information about (in this case) a distant environment, and to interpret that information as representing an opportunity. In some cases, the ability to muster resources in such a fashion might be interpreted in terms of top management team (TMT) size, composition, and breadth of experience (Eisenhardt & Schoonhoven, 1990).

Financial constraints on growth appear to have consistently significant effects. As in previously mentioned works regarding firm size, Carpenter and Peterson (2002) also found, in a

study of 1600 small U.S. manufacturing firms, that internal finance was a significant constraint on growth, and that smaller firms tended to retain their income, while using external equity finance to a relatively small extent (a finding in agreement with Bechetti & Trovato, 2002). While smaller firms tend to turn to internal resources as a means of achieving growth prior to seeking external resources, the ability to mobilize external resources is still an important element of small firm growth. In a study of 1902 firms in 203 industries, Jarillo (1989) found that the use of external resources was positively related to growth, and that larger firms were less constrained in their growth by limited access to external resources. Some reconciliation of this seemingly contradictory evidence may be found in an early study of social influences on firm growth, in which Birley (1985) found that managers of small firms depended heavily on familial and close social contacts prior to seeking more socially distant external resources. At the same time, dependence on such close social network resources tended to restrict firm managers' ability to innovate and acquire larger resource pools. In other words, the finance strategies of small firms may be the result of availability bias that functions contrary to the interests of growth, but such strategies are nevertheless widespread. This brings up the question of whether small firms tend to depend upon internal financial resources for growth because they lack the resources that tend to come from social capital, such as market information, supplier and customer support, and relationships with financial institutions. This issue is discussed further in a subsection discussing the influence of such contextual factors on firm growth.

2.2.3 Organizational Demography and Small Firm Growth

Firm-level characteristics appear to either influence behavior, or to make certain behaviors more or less possible. In a study addressing Gibrat's (1931) Law, which posits that firm size and growth are unrelated, Calvo (2006), found that older firms tended to experience less growth than younger firms, and smaller firms grew faster than larger firms. A similar result for firm age was found in Wijewardina and Tibbits (1999) as well, and similar findings related to firm size were found in a census-based study of over 671,111 small firms in India. Firm size and age both negatively impacted firm growth (Coad & Tamvada, 2012), and sole proprietorships appeared to exhibit slower growth relative to partnerships. Declining firms in the same study indicated (through surveys) that while large firms noted labor and market issues as inhibiting growth, smaller firms cited "lack of demand, problems obtaining working capital, power shortages, equipment problems, and management problems" (p.397). Younger firms and sole proprietorships similarly suffered from difficulty obtaining working capital. Firm size, age, and industry were also found to be related to differences between patterns of firm growth in Delmar, Davidsson and Gartner's (2003) study of 1501 Swedish firms, a study that developed distinctive categories for identified growth clusters including "super absolute growers", "steady sales growers", "acquisition growers", "super relative growers", and "erratic one-shot growth". That firm size influences organizational outcomes is especially relevant to the SME, as it indicates some of the specific challenges facing such firms.

Firm size and age are not the only determinants of SME growth outcomes, as Mateev and Anastasov (2011) found in their study of 4,561 SMEs in seven Central and Eastern European nations. Their findings supported the existence of a relationship between firm size and age and SME growth, but also found that those firms that grew more rapidly tended to have greater

access to external sources of capital when compared to firms that grew more slowly. As previously mentioned, smaller firms may have greater difficulty acquainting themselves with such external sources. At the same time, faster growing firms saw their growth rates more dramatically affected by changes in cash flow than their slower-growing counterparts, which is what one would expect given the tendency of smaller firms to both grow more rapidly and to depend more heavily upon internal sources of finance. An earlier study of Portuguese manufacturing (Oliveira & Fortunato, 2006) adds context to this result, finding that smaller, younger firms are also more sensitive to cash flow than larger, older firms. Bechetti and Trovato (2002) found that a firm's initial size was not related to later growth for large firms, but was related to later growth for small and medium-sized firms when access to external finance was problematic. Finally, Haltiwanger et al. (2013) found that firm size was less convincing in determining firm growth rates than firm age, and firm age was most determinative of growth rates when viewed in proximity to firm founding.

The specific characteristics of the manager, the firm's available resources, and the general characteristics of the firm all appear to be related to a firm's growth prospects. Yet, there needs to be some underlying logic that connects such factors to a firm's growth prospects and to a manager's intentions. This section has mentioned studies that sometimes link firm size and age to growth, but the reader should note that the reasons for such a relationship lie in what firm size and age mean to the manager's available options. Lower firm age tends to imply less legitimacy, less external support, and less integration within social networks that offer ties with value that is instrumental to growth. Lower firm size tends to imply, among other things, a smaller resource pool. The firm characteristics discussed in this section similarly speak to a firm's resource needs, specifically in the social terms required for information acquisition.

Finally, the manager's own tendencies toward external information search and processing, toward social interaction with potentially instrumental associates, and their ability to assess the value of their available resources all align to determine whether or not growth intention arises or lies dormant.

2.2.4 Contextual Factors and Small Firm Growth

Other factors that influence firm growth and growth intention include knowledge resources (discussed in the next section), industrial sector (Parker, Storey & Witteloostuijn, 2010), and financing difficulties (Kozan, Öksoy & Özsoy, 2006). Institutional and regulatory factors appear to have a notable effect on small firm growth, to the extent that such firms do not internally finance their expansion. Such issues are also related in part to cultural factors that influence small firm growth.

2.2.4.1 Institutional and Regulatory Factors. The institutional environment of an SME plays a role in its sensitivity to cash flow, and to external sources of financing, as Donati, Cinquegrana, and Sarno (2012) found in their study of 1957 Italian small businesses. Their study found that poor development of financial markets led smaller firms in less-developed regions to depend more heavily on internal sources of financing relative to their counterparts in more developed regions, but they also found that this dependency was mitigated when a close relationship existed between the firm and a financial institution (bank). Such institutional issues may be especially relevant to the SME in light of Oliveira and Fortunato's (2006) finding that smaller, younger firms face greater financial constraints. Gregory, Rutherford, Oswald, and Gardiner (2005) found that larger firms, on the other hand, were able to more easily make use of

public funding and long-term debt, and as such, needed to rely less on internal financial resources. Small firms may make more use of internal financing when it is available, but are constrained by institutional sources when it is not. Large firms tend to have greater access to internal financing, yet they also appear to have greater success in obtaining external financial support for their ventures. This apparent preference for use of internal financing, followed by debt, and finally external equity (Myers, 1984) may be related not only to issues of need for control, but also to the problem of relatively low legitimacy that newer firms face (Stinchcombe, 1965; Singh et al., 1986).

Institutional governmental factors such as taxation, incentives, and regulations also appeared to have an impact on the growth rate of firms, as seen in Davidsson and Henrekson's (2002) study of 30427 participants in Sweden, including 715 entrepreneurs. Castrogiovanni and Justis (2002) study of 246 franchisors in the United States found similar support for the influence of contextual factors in their analysis of existing franchise conditions including franchise start-up costs, and industry growth rate. The legal efficiency of a country relative to its banking sector, particularly with respect to creditor rights protection, also appears to influence SME financing choices, such that SMEs in countries with relatively low levels of legal efficiency are more likely to engage in multiple banking relationships so as to spread their risk (Hernández-Canovas & Koëter-Kant, 2010).

Interestingly, a study of micro and small enterprises (MSEs) in East Java (McPherson & Rous, 2010) found that access to credit from banks was less important to SME growth than what they termed "unobserved characteristics", which they estimated could include local economic factors, owner cultural background, owner entrepreneurial talent, and observed characteristics, which they measured as industry sector, human capital (in the form of worker education), and

entrepreneurial zeal. This may be a specific context that is only applicable to certain areas of developing nations, but it is nevertheless an interesting finding that complements the findings of Donati et al. (2012) in Italy by extending the research area to a context of even less development and access to financial institutions than that study considers. Hutchinson and Xavier (2006) similarly found that SMEs in Belgium, which they termed an established market economy, were less sensitive to internal financing constraints than SMEs in Slovenia, which they termed a transition country. The economic and legal development of a country, as a representation of that country's economic culture, clearly influences the norms and choices made by SMEs. This points us to cross-cultural issues as a further context of note to small firm growth.

2.2.4.2 Cross-Cultural and Gender Factors. Brown, Earle, and Lup (2005), in a study of 297 Romanian small enterprises, also found that external sources of financing could constrain small firm growth in a developing Eastern European economic context. Yet, their study also found that while entrepreneurial high school education was related to small firm growth, entrepreneurial university education, and worker education were not necessarily so. McPherson and Rous (2010) likewise found support for relationships between entrepreneurial high school education and small firm growth, as well as worker education and small firm growth. National culture appears to influence market entry mode for firms in general, and might specifically influence the degree to which entrepreneurship is perceived as personally and socially desirable (Kogut & Singh, 1988), while differences in culture in the form of cultural distance appear to create problems of social adaptation and job performance (Chen, Kirkman, Kim, Farh, & Tangirala, 2010) and could also create problems in terms of mustering social and institutional support. This is a reasonable conclusion given that firms in their earliest stages gain legitimacy

as their behavior increasingly aligns with the institutional logics of their environments (Suddaby & Greenwood, 2005). Immigrant entrepreneur language ability and local immigrant group size also appear to influence entrepreneurial status (Evans, 1989; Marger, 2006).

At the same time, Brown et al. (2005) found that younger, male entrepreneurs tended to lead their firms to growth more successfully than older entrepreneurs and female entrepreneurs, a result that may be connected to a greater likelihood among young males for expressing high growth intentions, and to declining growth intention experienced by both women and men over time as they pass from one career stage to the next (Davis & Shaver, 2012). McPherson and Rous (2010) found no such gender difference in East Java, implying that there may be a cultural issue behind the determination of whether gender is an entrepreneurial factor, in addition to the question raised regarding whether local context (Eastern Europe vs. Indonesia) determines the importance of external financing (it appears so). Other studies related to gender and growth intention provide further indication of the importance of expectation as it relates to growth goals. Coad and Tamvada (2012) found lower growth-rates among female-led firms in India. Such differences may be related to the earlier gender-correlated threshold issue mentioned in this research (Cliff, 1998), and to the findings of Manolova et al. (2012), which indicated a male tendency toward growth motivated more predominantly by financial success, and a female motivation toward new venture growth driven by a relatively more diverse set of rationales. Yet, as an explanation, gender seems only to be a starting point for investigating growth motivation, rather than an answer. After all, the same study found that both genders exhibited considerable variation in startup and growth motivations.

Another factor that appears to be linked to growth rate is the ratio of skilled to non-skilled workers, as was found in Wijewardena and Cooray's (1995) study of 300 firms in Japan. A new

venture's founding strategy similarly seems to be linked to future growth prospects (Sandberg & Hofer, 1987; Feeser & Willard, 1990), as do top management team experience, size, and heterogeneity (Eisenhardt & Schoonhoven, 1989). The environment in which a firm exists includes forces that compel very specific types of behavior that are not necessarily aligned with the goal of firm growth. Regulation, or lack thereof, may hinder choices or reduce the certainty of choice. The strength and development of financial institutions, as well as the development of institutional protections, can encourage firms, on average, to make use of more external financing, and thus potentially grow at a greater rate than would be allowed by internal financing constraints. Culture appears to also compel specific types of behavior, including arrangements of obligation between family members involved in the firm, comfort level with external financing, attitudes toward the desirability of entrepreneurship and toward entrepreneurs of one gender or another, and also toward a comfort level of control over a given firm. Culture also appears to influence the motivation behind new venture formation, and national characteristics that include available skill sets, which are also ultimately the result of institutional factors, influence the growth outcomes of firms as well.

Table 1. Summary of Selected Small Firm Growth Studies

Study	Variables Studied	Sample	Key Findings
Birley (1985)	Main: Entrepreneurial characteristics and the usage of formal and informal networks	160 responses in a US county of roughly 220000.	Firms in a relatively isolated local environment that are closely bound to strong local networks tended to depend on informal contacts with friends, family and colleagues for necessary resources. Formal (banking) resources tended to be enlisted only after other resources were enlisted. Strong local networks appear to limit entrepreneurial knowledge of resource availability and to stifle innovation. These findings held for both growth and no growth firms.
Sandberg & Hofer (1987)	Main: Entrepreneurial characteristics, industry structure, business strategy	17 startup firms selected from proposals submitted to four venture capitalists.	Entrepreneurial characteristics, industry structure, and venture strategy are positively related to new venture performance. Interactive effects of these factors are stronger than direct effects. Of the direct effects, industry structure had the greatest effect. Differentiated strategies outperformed focused strategies.
Jarillo (1989)	Main: External resource use Moderating: Firm Size	1902 firms in 233 industries	External resource use is positively related to growth rate and this relationship is negatively moderated by firm size.
Eisenhardt & Schoonhoven (1990)	Main: Firm environment, strategy, and top management team (TMT) characteristics	102 US semiconductor firms, including founders, current CEOs, and functional specialists, as well as financial and market reports	Market environment, TMT size, TMT experience together, and TMT industry experience heterogeneity are positively associated with growth; entrepreneurs tend to choose familiar markets.
Feeser & Willard (1990)	Main: Founding strategy - product, market, and/or technology, team size, product and market innovation, foreign market participation	39 high growth and 39 low growth firms in SIC 3573	Founding strategies of high and low growth firms differ.

Study	Variables Studied	Sample	Key Findings
Davidsson (1991)	Main: Ability, need, opportunity, growth motivation, and growth Moderating/Mediating: Subjective need, ability, and opportunity	322 small business firm managers in four industries in Sweden	Entrepreneurial growth is positively related to ability, need, and opportunity. Subjective factors are positively related to growth motivation, and objective factors are positively related to both subjective perceptions and growth.
Donckels & Lambrecht (1995)	Main: Small business networks, family influence	900 Belgian entrepreneurs	Network formation stimulates growth through contacts with national and international entrepreneurs. Family bound entrepreneurs do not appear less likely to interact with national and international entrepreneurs.
Hansen (1995)	Main: Entrepreneur pre founding network size, interconnectivity, and interaction	44 entrepreneurs	Entrepreneurial networks were strongly related to first year new firm growth.
Wijewardena & Cooray (1995)	Main: Firm age, advertising intensity, R&D intensity, capital intensity, export orientation, market competition, firm size, skilled worker to non skilled worker ratio	300 Japanese firms listed by the Kobe Chamber of Commerce and Industry	Firm size was related to sales growth, as was the skilled worker to non-skilled worker ratio. Other predictor variables were not significant.
Baum, Locke and Kirkpatrick (1998)	Main: Vision attributes and vision content: brevity, clarity, abstractness, challenge, future orientation stability, desirability, and vision growth imagery	183 entrepreneur employee pairs	Communication of vision through verbal and written communication positively mediates the positive relationship between vision attributes and vision content, and firm growth

Study	Variables Studied	Sample	Key Findings
Cliff (1998)	Main: Gender, threshold attainment, Growth attitude, no-growth decision	229 Vancouver area business owners	Males and females exhibited different business size thresholds, with female thresholds being lower. Attainment of threshold size appears to be a primary trigger of no growth decisions
Wijewardena and Tibbits (1999)	Main: Firm size, firm age, export orientation	500 Australian manufacturing firms	Older firms have lower growth than younger firms, relatively larger firms perform better, but the importance of size diminishes as size increases.
Autio, Sapienza & Almeida (2000)	Main: Firm age at entry, knowledge intensity, imitability	77 top level managers or chairmen	Early internationalization and knowledge intensity are both associated with higher rates of international growth. Imitability of firm technology was also related to growth.
Robson & Bennett (2000)	Main: External business advice acquisition	2474 British SMEs	Relationships with private sector advice sources (lawyers, suppliers, customers, business friends and relatives) are positively related to SME growth. Such arrangements with suppliers on a national/international level are strongly related to employment and turnover growth, while collaboration with local suppliers has a strong positive relationship with profitability growth. Government supported providers of business advice do not appear to significantly impact SME performance.
Bechetti & Trovato (2002)	Main: Firm size, access to external finance	4000 Italian firms	Firm initial size is not related to growth for large firms but is related for small and medium sized firms in environments in which access to external finance is difficult.
Carpenter & Petersen (2002)	Main: Internal finance availability	1600 small businesses	Most small firms are constrained by internal finance availability.

Study	Variables Studied	Sample	Key Findings
Delmar, Davidsson & Gartner (2003)	Main: Firm age, firm size, industry affiliation	1501 high growth Swedish firms	The study identified distinctly different types of growth patterns, lending diversity and categorization to the broad concept of growth. Firm size, age and industry were related to differences between these patterns, and governance/ownership was as well, but to a more moderate extent.
Wiklund & Shepherd (2003a)	Main: Growth, growth aspiration Moderating: Manager characteristics, environmental dynamism, access to financial capital	326 small business CEOs in four industries in Sweden	Financial resources and entrepreneurial growth aspirations are positively related to growth; aspiration's relationship is positively moderated by education, experience and environment.
Wiklund & Shepherd (2003b)	Main: Knowledge based resources applicable to discovery and exploitation of opportunities Moderating/Mediating: EO	384 Swedish SMEs	Knowledge-based resources relevant to the discovery and exploitation of opportunity are positively related to firm performance and this relationship is positively moderated by EO.
Wiklund, Davidsson & Delmar (2003)	Main: Workload expectations, more time on favored tasks, owner-manager income, control of operations, crisis survivability, and maintenance of quality	1470 Swedish owner-manager respondents	Noneconomic concerns are important determinants of attitude toward growth. Personal income is not the most important in any model, so money may not be the most important motivator, and employee well-being was the most consistent motivator. Managerial feelings about whether growth is good or not is explained in large part by what they expect out of growth

Study	Variables Studied	Sample	Key Findings
Baum & Locke (2004)	Main: Entrepreneurial traits, skills, motivations, and growth Moderating/Mediating: goals, self-efficacy, communicated vision	229 CEOs and 106 associates, woodwork firms, 6 year longitudinal study in North America	Vision, goals, and self-efficacy are primary factors positively associated with venture growth. The effect for self-efficacy is most pronounced.
Mishina, Pollock & Porac (2004)	Main: Expansion uncertainty, slack resources (human, financial). Product expansion logic, market expansion logic, product base expansion	112 manufacturing firms	Firms pursuing product expansion grow more slowly than firms that are not expanding their product base. This relationship is positively moderated by financial slack. Human resource slack enhances short-term market expansion and slows short-term product expansion.
Wiklund & Shepherd (2004)	Main: Entrepreneurial Orientation Moderating/Mediating: environmental dynamism and access to capital	413 Swedish small business managers	Firms with low EO perform better with high environmental dynamism and high capital access, and firms with high EO perform better with more environmental stability and low access to capital.
Kozan, Öksoy & Özsoy (2006)	Main: Environmental difficulties in financing and know how (included in entrepreneurial intensity)	526 small businesses	Primary factors affecting growth plans included financing difficulties (which hindered technological improvement and resource aggregation) and know how, which affected market expansion.
Oliveira & Fortunato (2006)	Main: Cash flow, firm size	7653 Portuguese manufacturing firms over 11 years	Smaller and younger firms have higher growth-cash flow sensitivities than larger and more mature firms. Financial constraints on firm growth may be relatively more severe for small and young firms. Small and young firms exhibited more persistent growth than larger, older firms.

Study	Variables Studied	Sample	Key Findings
Audretsch & Dohse (2007)	Main: Geographic location	212 knowledge-based firms in Germany	Knowledge-based firm employment growth is related to location, firm, and industry characteristics. Proximity in a knowledge rich agglomeration is positively related to firm growth.
Delmar & Wiklund (2008)	Main: Growth motivation, time lag, firm growth	863 managing directors of small firms in four industries in Sweden	Growth motivation is stable over time, and is directly related to growth. Past growth is directly related to future growth. Growth motivation is positively related to both employment growth and sales growth.
Achtenhagen, Naldi & Melin (2010)	Main: Academic or practitioner status, growth definition	Literature Review, Qualitative Study, and 827 respondents from Swedish firms	Academic and Practitioner definitions of growth differ, with practitioners focusing more on internal development
Maine, Shapiro & Vining (2010)	Main: Industry cluster proximity Moderating/Mediating: firm reliance on downstream supply chain effects	451 new technology based firms in the US.	Distance from a cluster is negatively related to growth, and the effect of cluster proximity within a metropolitan area on growth performance is moderated by reliance on broad downstream supply chain effects such that information and communications technology firms (biotech for example) are most influenced by cluster proximity.
Parker, Storey & Witteloostuijn (2010)	Main: Firm size, strategic and environmental factors	156 UK gazelle firms	Gibrat's Law does not generally hold (firm size and growth rate are related). Focus on a single dominant product or service was related to firm growth rate. Product diversification is negatively related to growth rate, as is international market diversification.
Mateev & Anastasov (2011)	Main: Firm size, firm age, indebtedness, internal financing, growth opportunities, process and product innovation, and organizational changes	4561 small and medium sized firms in seven Eastern European countries.	Firm size and age were related to firm growth, even when other factors are controlled for. High growth firms rely more on external sources of capital to support sales growth than other firms do. High growth firms are particularly sensitive to cash flows.

Study	Variables Studied	Sample	Key Findings
Stenholm (2011)	Main: Growth intentions Moderating/Mediating: innovative behavior	232 Finnish SME owner-managers	Innovative behavior negatively moderates the effect of growth intentions on growth. Launching new products and services impedes the ability of the firm to convert growth intention into growth
Chen, Williams & Agarwal (2012)	Main: Firm incumbency characteristics: firm size, industry tenure, technology capacity	77 US wireless telecom firms from 1983 to 2004	Established firms that diversify into a new business are more likely to succeed and overcome obstacles to growth, while new firms face greater difficulty and lag behind diversifying firms.
Coad & Tamvada (2012)	Firm size, firm age	671159 small businesses in India	Firm size and age negatively impact firm growth. Female-led firms have lower growth rates. Proprietary firms and young firms also have lower growth rates. Exporting is positively related to firm growth.
Schoonjans, Van Cauwenberge, & Vander Bauwhede (2013)	Formal business networking organization participation (government supported)	2143 PLATO participants	Formal business networking is positively correlated with both net asset and added value growth.

2.3 The Ability, Need, and Opportunity (ANO) Framework

The Ability, Need, and Opportunity (ANO) framework is the prevailing theory in the small firm growth literature (Davidsson, 1991; Grégoire & Shepherd, 2012), and was developed as a means of unifying entrepreneurial and small firm growth research into its core conceptual determinants. In what is perhaps the clearest explanation of the ANO framework, Davidsson (1991) argues that research into small firm growth and entrepreneurship has made use of explanatory variables in a paradigm that can be summarized in terms of ability, need, and opportunity. In doing so, the framework emphasizes the complementary effects of objective measures of ability, need, and opportunity in determining both growth motivation and actual growth. This section introduces the ANO framework and summarizes major work under that framework, including its contributions to the progress of entrepreneurship and small firm growth research. Following a description of research within the framework, this paper introduces a critique of the framework's applicability to explaining small firm growth intention, and a socio-cognitive perspective by way of which this dissertation aims to move beyond the ANO framework.

2.3.1 The Development of the Ability, Need, and Opportunity Framework

A review of research in the area of small firm growth (see Table 1) reveals that much of the literature thus far has focused on determinants that fit into the ANO framework. Even works that fail to explicitly describe the framework have generally followed its approach. The framework itself seeks to provide a means by which studies of such determinants can be put into context relative to each other. Thus far, small firm growth literature has focused in large part on

the types of variables and conceptual determinants described by Davidsson (see Table 1). The framework is used to describe both antecedents of firm growth and firm growth intention.

In simpler terms, Kirzner (1973) described entrepreneurship in terms of those who are both alert and fortunate (arguably, alertness represents ability and need, and fortune represents opportunity). Davidsson (1991) argues for a more elaborate model that focuses on how objective ability, need, and opportunity lead to their perceived alternatives, which lead in turn to growth motivation, and finally to actual growth. This model is necessary to disentangle micro-level entrepreneurial differences from broader factors of the environment, such as geography and economy. Motivation is based on cognition, and that environmental and micro-level objective variables “cannot affect Motivation unless they are perceived” (p. 409).

The question posed to small firm growth research, then, is one of how to model and measure ability, need, and opportunity. Davidsson (1991), for example, measured ability in terms of education and business experience, measured need in terms of firm age, managerial age, ownership dispersion, and firm size, and measured opportunity through the use of measures related to an entrepreneurial firm’s industry and geographic characteristics. Perceived ability, need, and opportunity were measured using attitude items and items interpreting external obstacles, barriers to entry, and room for market expansion. The objective measures used could only partially account for variation in the perceived measures used, and that the perceived measures used, in turn, were a partial explanation for growth motivation. One of the possible causes of this is described as a definition of growth that was too narrow to be clearly understood by practitioner respondents, an issue further addressed in Wiklund, et al. (2003) and Achtenhagen, Naldi, and Melin (2010).

In any case, the components of the ANO framework have been found consistently throughout entrepreneurial small firm growth research, in one form or another. Shane and Venkataraman (2000) describe entrepreneurship as the nexus of the individual and the opportunity, and a great deal of entrepreneurship research has focused either on characteristics of entrepreneurial individuals, or on the nature of opportunity (Koellinger, 2008; Ucbasaran, Westhead, & Wright, 2001). One of the issues that has naturally arisen is that of how to determine appropriate measurement of entrepreneurial ability. Demographic measures of ability, for example, appear to have been in fairly common use over time (Delmar & Davidsson, 2000; Jones & Tullous, 2002; Mosey & Wright, 2007).

2.3.1.1 Ability. With regard to ability, some ability measures appear to be more useful than others in terms of their efficacy in explaining successful opportunity identification and pursuit, with, for example, entrepreneurship-specific measures outperforming general human capital measures (Ucbasaran, Westhead, & Wright, 2008). Business ownership experience has been used repeatedly as a proxy measure of entrepreneurial ability (Davidsson, 1991; Westhead, Ucbasaran, & Wright, 2005). Likewise, technical information exposure shapes technically-relevant opportunity interpretation ability, while social information appears to influence the perception of need for entrepreneurial action (Autio, Dahlander, & Frederiksen, 2013). This is in accord with findings that information regarding opportunities is highly connected to its perceived relevance to a specific domain (Dencker, Gruer, & Shah, 2009; Grégoire & Shepherd, 2012). Social factors are also relevant to ability, as both the perception and reality of one's resource pool are socially-influenced (Batjargal et al., 2013; Sullivan & Ford, 2014). If ability is conceived of in the form of firm resources, or the perception thereof, then there is support for

their influence over the determination of the attractiveness of opportunities (Haynie, Shepherd & McMullen, 2009).

2.3.1.2 Need. The ability to identify opportunities does appear to be distinct from the decision to exploit them (Ucbasaran et al., 2008), indicating a difference between ability and need in the mind of the entrepreneur. Need perception drives entrepreneurial activities (Hechavarria, Renko, & Matthews, 2012), but some measures of entrepreneurial need, such as risk-taking propensity, do not clearly distinguish between entrepreneurial success and failure (Gartner & Liao, 2012), implying that the propensity to perceive need is less important than the accuracy with which it is perceived. Of the three elements of the ability-need-opportunity paradigm, need appears to be the least directly addressed, as most of the measures either identify entrepreneurial characteristics, or opportunity perception (see Table 1).

Carland, Hoy, Boulton, and Carland (1984) describe need in terms of managerial desire for achievement, autonomy, responsibility, and internal control, but Davidsson's (1991) approach to measuring need included ownership dispersion, age, maturity, and firm size, and many of the small firm growth studies have focused on these determinants as well (see Table 1). Davidsson's measures of perceived need included economic satisfaction and need for achievement (with the former negatively related to perceived need and the latter positively related), in line with Carland et al. (1984). Covin and Slevin (1988), argue for the importance of considering perception in interpreting the effect of need, noting that rational managers could perceive both high and low performance by their firms as pointing to the need for a more entrepreneurial approach. Extending this work, development of the EO construct (Covin & Slevin, 1989; Covin & Wales, 2012; Lumpkin & Dess, 1996) has attempted to further explore

the determinants that shape need into perceived need, focusing on measurements of entrepreneurial innovativeness, proactiveness, and propensity for risk-taking (with some scales also including measures of competitive aggressiveness and autonomy).

2.3.1.3 Opportunity. In the entrepreneurship and small firm growth literature, there has been some focus on measures of entrepreneurial affect as they relate to opportunity and opportunity perception, and some focus on cognition. Minniti and Bygrave (1999) argue that determining whether or not to exploit an opportunity is a rational (in subjective terms) decision made by the entrepreneur after weighing the benefits of one choice to its alternatives. Yet, certain emotional states, such as those associated with certainty, appear to lead to reduced perception of risk (McMullen & Shepherd, 2006; Foo, 2011), while negative emotions appear to direct an entrepreneur's attention toward temporally immediate tasks, and potentially away from opportunities that represent a longer time horizon (Foo, Uy, & Baron, 2009). These and other similar findings (Baron, 2008) have implications not only for opportunity perception, but also indicate that emotional control may function as an "ability" with respect to improving the quality of opportunity identification. This is further explored in work addressing how opportunities are perceived through cognitive factors (Cornelissen & Clarke, 2010; Gaglio, 2004). It is clear, too, that the ability to leverage social capital relationships is important to entrepreneurial opportunity exploitation (Lim, Busenitz, & Chidambaram, 2013).

2.3.2 Moving Beyond Ability, Need and Opportunity – The Socio-Cognitive Perspective

Shane and Venkataraman (2000) defined the study of entrepreneurship as involving "the study of the sources of opportunities" (p. 218), emphasizing process issues of discovery,

interpretation, and exploitation of such opportunities. At the same time, they note that such research is also concerned with understanding the individuals who engage in such processes. Thus far, much of the literature in the fields of entrepreneurship has focused on characteristics of individuals that serve as proxies for ability or need, or characteristics of the environment that serve as proxies for opportunity. If entrepreneurship is the nexus of the individual and the opportunity, then it makes sense to understand the characteristics of both, but explanations of the entrepreneurial processes are incomplete without also understanding the interlinking relationships that define entrepreneurship and determine small business growth. It is not sufficient to understand what discovery, interpretation, and exploitation are. How does discovery occur? How does discovery lead to interpretation, and how does interpretation lead to opportunity? What is it that explains these relationships? Entrepreneurial research is replete with models of static abilities, needs, and opportunities, while research findings increasingly emphasize the importance of more complex and context-based influences (Dimov, 2007). Progress in the field requires more integration of these findings.

The ANO paradigm offers much to entrepreneurial research, but that is not an indication that it is a paradigm suited to all purposes. Separating ability, need, and opportunity makes an important distinction between constructs that are genuinely distinct, and which are each, on their own, necessary but not sufficient conditions for growth to occur. Another strength of the paradigm is that it emphasizes the separate natures of perceived measures of ability, need and opportunity from more objective measures. This is an acknowledgment, at least in part, that the existence of these factors is considerably less relevant if they are not perceived by decision-makers. Yet another strength of the paradigm is its separate consideration of factors that are internal to the decision-makers involved in determining growth intention and those that are

external. Davidsson's own tested model of growth intention antecedents (1991, p. 421) helps to clarify some of the weaknesses inherent in the paradigm. The model indicates that its measures of objective ability are significant antecedents of both perceived need and perceived opportunity, with objective measures of ability (education and entrepreneurial experience) predicting perceived opportunity nearly as strongly as perceived ability ($r=.27$ vs. $r=.29$). Likewise, objective measures of opportunity (industry character, geographic dispersion, and geographic location) predict perceived need nearly as well as they predict perceived opportunity ($r=.22$ vs. $r=.23$). This indicates a significant problem for the paradigm's ability to create a parsimonious interface between common objective measures of ability, need, and opportunity, and growth intention. Framing the growth intention antecedent question in terms of the ANO paradigm also compels research into more readily available measures of those constructs. This would be less of a problem if managers perceived all things objectively, but they do not.

The issue of how perceived measures are to be considered separately also made apparent by the finding in Davidsson's (1991, p. 421) model of growth intention antecedents, which finds objective measures of need (ownership dispersion, age/maturity, firm size) as differentially ($r=.22$) direct predictors of growth intention compared to perceived need ($r=.18$). While a prediction of actual growth (not growth intention) based upon objective measures appears logical (internal or external factors could benefit the growth of the firm without the intervention or perception of the manager), on what basis can it be said that objective but non-perceived need determines intention?

Perhaps the most prominent weakness of the ANO paradigm is that it forces an adherence to a framework that has not been borne out by more recent literature. The question of perception is philosophically significant, but from a practitioner's point of view, it is useless. If ability,

need, and opportunity are not perceived, then for decision-making purposes they do not exist. Social and cognitive forces clearly influence the perception of ability, need, and opportunity, but each of the elements of that paradigm also influences the other. Believing an opportunity exists makes it more exploitable, which improves one's sense of ability. Perceiving need leads to confirmation biases that increase opportunity perception. Perceiving ability leads to the entrepreneur's desire to do something with that ability. As Maslow (1966, p. 15) said, "it is tempting, if the only tool you have is a hammer, to treat everything as if it were a nail."

In contrast to the ANO paradigm, the model presented in this research asserts that for the purposes of determining growth intention, no distinction between the perceived and objective is needed, because when it comes to intention, all information is filtered through perception. The logic of the model proposed in this research has two fundamental premises.

Firstly, it is presumed that when it comes to actual growth, not all things are perceived. Unperceived factors such as environmental munificence, entry barriers, and customer characteristics, may assist or hinder the growth of the firm. These factors and outcomes are not the focus of this research, but they do shape the model presented herein, in that this model actively attempts to exclude them. This is not an argument that the strategic choice view is the only valid means of understanding small firm growth, only that models for understanding managerial choice should be disentangled from models that describe the relationship of actual firm growth antecedents that fall outside of the realm of both managerial perception and managerial decision-making. In this sense, the model presented in this research agrees with the ANO paradigm that non-perceived factors can lead to firm growth, and agrees that perceived factors can directly determine growth intention without interpretation, but differs in terms of the extent to which models of intention and actual growth overlap.

Secondly, antecedents of small firm growth intention must logically be factors that at least partially influence the cognition of the decision-making manager. In addressing this issue, the matter of the actual and the perceived can be collapsed, at least relative to the way in which they have been previously measured. In other words, growth intention is presumed to be intentional. If managers perceive need in a manner that cannot be measured by established measures of perceived need, the result is still growth intention. This model asserts that for the purposes of establishing growth intention, what is most meaningful is understanding which antecedents (stable and flexible, internal and external) generally compel managers toward growth intention (without interpretation), which antecedents determine the perception of opportunity and threat, and how opportunity and threat perceptions differentially influence growth intention. The constructs used by this study include interpretation of market information as Gain(Opportunity) and Threat of Loss (Jackson & Dutton, 1988) that are specific to immediate circumstances, as well as more stable measures of EO (Miller, 1983; Covin & Slevin, 1989), Managerial Optimism (Hmieleski & Baron, 2009), and FOF (Atkinson, 1966; Mitchell & Shepherd, 2010). The use of these factors not only manages issues of temporal stability, it also integrates the internal and external forces that shape decision-making.

In other words, the model in this research does not exist merely to overcome measurement issues by mimicking the existing ANO model with more recently developed measures. It seeks rather to resolve the actual/perceived ability, need, and opportunity issue by focusing on managerial characteristics that are logically and empirically aligned with growth intention, and by emphasizing an issue that is completely absent from the ANO paradigm: the processing of perception, rather than the perception itself. In doing so, this research addresses a major shortcoming of the current small firm growth literature, which is that other research in the

social capital and cognition research literature has greatly developed the concepts described in the ANO framework, but the small firm growth literature has yet to develop a model that integrates and re-interprets that fundamental model.

What is perhaps most remarkable about this area of research is that at least as early as Davidsson (1991) and Herron and Sapienza (1992), the integration of models that began to address perception was attempted, albeit without the inclusion of social factors. Granovetter (1973) addressed the importance of social ties with regard to their ability to spread information, albeit in a manner non-specific to the entrepreneurial process. Later work supports the contention that social capital is a defining element of entrepreneurship (Gartner, Shaver, Gatewood & Katz, 1994; Gedajlovic, Honig, Moore, Payne, & Wright, 2013), and a significant explanatory antecedent of opportunity creation (Shane & Cable, 2002), yet without an analysis of cognition, the explanation appears to be lacking (De Carolis, Litzky, & Eddleston, 2009). One might reasonably expect that research development would at times focus on elements of the ANO paradigm, and on building upon that work through the inclusion of newer developments in cognition (which is at least indirectly addressed in that work in the form of perception), and social factors to build more integrated models. So far, however, there appears to have been a relative lack of integration of these issues, which is surprising given that their study is not novel (Mitchell, Smith, Seawright, & Morse, 2000), and given how well-studied they have been in relative isolation from each other. The insufficiency of this approach is addressed directly in Mitchell et al. (2007). Even in De Carolis et al., (2009), a work that address the importance of a perspective that includes both social capital and cognition, the cognition measures of the integrated model do not appear to note the actual cognitive process of interpretation, but rather are measured in terms of Illusion of Control and Risk Propensity. These are measures of

tendencies that might lead to certain types of cognitive interpretations, but they do not represent the current state of cognition research with regard to issue interpretation. Cognition is not only the interpretation of opportunities that exist, cognitive acumen provides the potential to imaginatively create opportunity (Lachmann, 1986). The socio-cognitive model proposed in this research addresses these problems by disentangling the body of entrepreneurial research from the constraints of the ANO paradigm. It does so by focusing on the interaction between characteristics of the entrepreneur and the opportunity, and by delving into the processes that lead to the perceptions that influence managerial behavior.

2.3.2.1 Managerial Cognition. Managerial cognition includes firm tasks related to inflow, processing, and outflow of information. Inflow by necessity includes gathering, which is, in turn, selective. Outflow can represent both the transfer of processed information, or its translation into externally observable behavior. A classic model depicting this process is depicted in Daft and Weick (1984) as: (a) scanning, or data collection, (b) interpretation, through which data is given meaning, and (c) learning, the stage at which action is taken and results are observed. Along with the sequence of inflow, processing, and outflow, Walsh (1995) notes that information is processed in two directions, as also implied in Daft and Weick's (1984) Learning stage, which leads to both more Scanning and more Interpretation. Pre-existing mental models influence how new information is interpreted, and new information can alter pre-existing mental models.

The issue of cognition in a managerial setting arose out of the need to address the overall importance of the manager to firm performance (Walsh, 1995), including implications of the strategic choice view of organizations (Astley & Van de Ven, 1983), and out of literature more

directly addressing the distinct effects of managers on their firms. This includes studies arising from agency issues, (e.g. Fama, 1980; Jensen & Meckling, 1976; Eisenhardt, 1989). Walsh's (1995) retrospective on the origins of managerial cognition research traces the roots of one important concept, the schema, to neurologist Henry Head's (1920) work on mental models related to sensory and positional awareness. According to Walsh, the work of Neisser (1967) was essential to marking a shift away from more strictly behaviorist research, toward psychology focusing on cognition, and this was followed in turn by research into socially-acquired information through social cognition research (Fiske & Taylor, 1984).

The roots of managerial cognition, then, lie in broader social science research, such as the aforementioned work of Neisser (1967, 1976), Axelrod (1976), and Fiske and Taylor (1984). Those works focused on fundamental issues of cognition, social cognition, and the interpretation of information by way of structures, cognitive maps, and mental models. The specificity of March and Simon's (1958) work to organizations similarly marked a turning point from earlier management research toward a cognitive focus. In such works, cognition is described as including information transformation, elaboration, storage, recovery, and usage (Neisser, 1967). The psychology, social psychology, and managerial cognition literature addresses cognition using a great many measures and perspectives. These including among others the study of assumptions (Mason & Mitroff, 1981), inertia and commitment (Greenwood & Hinings, 1988), frames of reference (Dunn & Ginsberg, 1986; Shrivastava & Mitroff, 1983), causal and cognitive maps (Axelrod, 1976; Bougon, Weick & Binkhorst, 1977; Hall, 1984), selective perception and limited perception (Ashforth & Fried, 1988; Dearborn & Simon, 1958; Gioia, 1986; Lorsch, 1985; Murray, 1978; Porter, 1980).

Some of the early managerial work that best reflects its contemporary developments in cognition and social cognition research includes organizational theories such as the Neo-Institutional Theory of the Firm (DiMaggio & Powell, 1983; Meyer & Rowan, 1977). Neo-Institutional Theory emphasizes the power of institutional models, or rules, to influence social groups, but it also depends upon the creation and legitimization of such models in the first place. The organizational theory work of Daft and Weick (1984) also draws upon cognition research, modeling the organization as an interpreting system, and drawing conclusions about how a firm's interpretive attitudes and behaviors will affect organizational behaviors and forms. Specifically, Daft and Weick (1984) discuss how the manager's (or firm's collective) understanding of the interpretability of the environment, and their willingness to participate in the creation of their environment (organizational intrusiveness) interact to produce different behaviors in firms. Sociologists such as Berger and Luckmann (1966) have discussed similar themes, noting that the instability inherent in the self requires either acceptance of a change in the self (or vision of one's firm, for example), or enactment of one's influence over the environment such that the self is maintained. The cognitive perspectives of managerial teams, at least as measured in demographic terms, do appear to be linked to firm strategy (Wiersema & Bantel, 1993). Thomas, Clark and Gioia (1993) took on the task of empirically developing a process model through which they explored the links between cognition, action, and performance, incorporating these concepts as scanning, interpretation, and action. In their model, the use of information and its source were important scanning determinants, and perceived gain and perceived controllability were important interpretation determinants. This empirical result is not at all unlike one would expect given earlier conceptual developments in the field. It is notable as well because it clarifies the distinct paths that lead to managerial actions and firm outcomes, issues

which in this dissertation and in key works that inspired it, such as Davidsson (1991), are similarly separated into growth intention decisions and growth outcomes. The findings in Thomas et al. (1993) also support earlier theory (Gioia, 1986) indicating the pitfalls of overdependence on schemata when such overdependence leads to dismissal of new information or unwarranted certainty. This issue is of importance as well, as it reflects the need to consider both internal (personal) and external (social) sources of information and bias.

From a strategy perspective, perhaps the greatest influence of cognition has been in the strategic choice perspective (Astley & Van de Ven, 1983; Child, 1972; Hambrick & Mason, 1984; Miles & Snow, 1984), where the role of the manager's learning and decision-making is emphasized over the selective processes of the environment (Hannan & Freeman, 1977). Yet, part of what determines managerial behavior is also determined through interaction with the environment, including the manager's social environment, as Zbaracki (1998) demonstrated in his investigation of the development of organizational understanding and implementation of total quality management practices, and describing how perception and preference alter managerial understanding and interpretation of ideas. Managerial learning about the environment, decision-making, and meta-cognition have all been established as related to strategic decisions. This dissertation focuses on the strategic decision to seek firm growth (Lant, Milliken & Batra, 1992). And, as firm growth and firm growth intention have consistently been a focus of entrepreneurship and managerial research (see Table 1), understanding the cognitive causes of the strategic decision to seek firm growth is highly relevant to the larger body of that literature as well. As Daft and Weick (1984) and Smircich and Stubbart (1985) explain, this decision is not only determined by managerial cognition related to understanding the environment and firm conditions through sensemaking (Weick, Sutcliffe, & Obstfeld, 2005), it is also determined by

the meaning attached to changing or maintaining the firm's path, and to influencing, reacting to, or ignoring external influences.

When interpreting external influences in light of pre-existing beliefs, managerial characteristics and cognitive factors appear to operate in different, sometimes complementary ways. Daft and Weick (1984) reasoned that managerial tendencies regarding organizational intrusiveness toward the environment, along with assumptions about the analyzability of the environment would determine a firm's mode of information interpretation. Along similar lines, Dutton and Jackson (1987) explained that managerial motivations and cognitive factors influence both information processing and organizational responses. Kunc and Kabanoff (2010) found, even when firms have similar resources available, variation in the interpretation and utilization of those resources can determine whether those resources improve firm performance or not. Further support for the importance of accurate mental models, which can be socially acquired, and which provide the cognitive basis for issue interpretation, is found in Gary and Wood's (2011) study, emphasizing the value of understanding a firm's capability as well as its environment. Failing to comprehend the changing nature of the external environment can have consequences as well, as Tripsas and Gavetti (2000) explain in their case study of the decline of Polaroid Corporation. Without accurate managerial cognition, firms are less able to adapt to changing conditions.

Other areas of management research have been influenced by the cognitive perspective, such as in the case of agency theory (Eisenhardt, 1989; Fama, 1980; Jensen & Meckling, 1976) and its analysis of conflicting strategic interests of owners and managers. Cognition finds its place most firmly, however, in management research that focuses on the distinctions between environmental and managerial influences (Miles & Snow, 1978; Miles, Snow, & Pfeffer, 1974;

Mintzberg, Raisinghani, & Théorêt, 1976). Yet, what is at the core of all of these bodies of research, and of all managerial cognition research, is the study of the transmission and processing of ideas to and from both groups and individuals (Lounsbury, 2001). And, while organizations as a whole (at the firm level) are often the focus of legitimacy studies, Ocasio (1997) reminds us that ultimately decision-makers, or individuals, must decide whether and where to focus attention, and what to do once attention is focused. All of this depends upon either socially received or internally created rules. In Daft and Weick's (1984) earlier work, this same process is described as a process of scanning, interpretation, and action. These and other non-entrepreneurial works provide a basis for examining how we conceive of the entrepreneurial process.

In Davidsson (1991), the entrepreneur is described as interpreting the existence of opportunity, the need to explore it, and the ability to do so. This paradigm has persisted in the growth literature, which has focused its attention away from direct consideration of issues of cognition (see Table 1). Often this is due to a focus on the view that the manager is less important to firm growth than other factors (Astley & Van de Ven, 1983). Addressing the issue of firm growth intention rather than firm growth redirects this focus. In emphasizing managerial decision-making, the cognition literature implies several questions for the ANO paradigm. How can consideration of ability, need, and opportunity occur without scanning and interpretation? On what basis does the manager interpret information without rules for doing so? Repeated reviews of the entrepreneurship literature have emphasized the lack of research addressing these questions, and the importance of addressing them (Barreto, 2012; Busenitz et al., 2003; Cardon, Foo, Shepherd, & Wiklund, 2012; De Carolis & Saporito, 2006; Mitchell et al., 2002; Mitchell et al., 2007). Even in larger, less entrepreneurial firms, it is clear that a cognitive component is

necessary to the explanation of strategic action (Kabanoff & Brown, 2008; Kaplan, 2011; Nadkarni & Barr, 2008). This is most apparent when one considers entrepreneurs in relation to the environment in which they exist. Davidsson (1991) makes the important distinction between objective and perceived opportunity, but it is cognition that alters the objective into the perceived, and only the perceived can be acted upon, and shape intention. Models of the entrepreneurial process are incomplete without an attempt to explain not only how the manager determines that ability, need, and opportunity exist at all, but also how ability, need and opportunity can combine to create growth intention, which is a key determinant of growth. A focus on growth intention implies that relevant ability, need and opportunity are perceived, so what matters is not whether they exist, but rather how the small business manager determines that they do. A more complete model of this process is what the socio-cognitive perspective has to offer.

However growth is measured, whether as an increase in firm asset value, gross or net revenue, production, head count, or expansion into a new market, growth represents the firm changing from what it is into something else. Seeking growth implies that the manager finds their future vision of the firm to be more desirable than the firm as they perceive it in its present form. Shifting from a growth intention to a threshold mentality implies one of two things. Either the manager's vision has been fulfilled, or the vision has been changed, perhaps due to a perception that it cannot be fulfilled, or by its replacement with a different set of priorities. Contrarily, a shift from a threshold mentality to a growth intention implies that the manager has discovered some new possibility that they have interpreted as both desirable and achievable. As for the vision itself, that might be set according to what one values personally, even in non-economic terms (Douglas & Shepherd, 2000), but it is also influenced by the manager's

conception of what is desirable and achievable. Where there is conflict between the firm's vision and the firm's strategy, such conflict may be interpreted as a threat to the firm (Bundy, Shropshire, & Buchholtz, 2013), and the manager accordingly could be expected to resolve the conflict by altering the firm's vision, its strategy, or both. Sources of such values and interpretations of achievability could come from the manager's beliefs prior to business activity, from new possibilities understood through personal interpretation of the market, and also from the external resources and human interpretations that derive from social networks. Social networks may provide access to external assets, but they also provide alternative interpretations of current and possible future markets, and schemata that clarify how assets and information can be used to the advantage of the firm (Axelrod, 1976; Greenwood & Hinings, 1988). New information, regardless of its source, however, must be filtered through the manager's own preexisting knowledge structures (Porac & Thomas, 1990; Balogun & Johnson, 2004).

It is also worth considering that mental models, or schemata, that are relevant to the managerial roles of a stable organization may not align well with those needed to exploit entrepreneurial opportunity (Gioia, 1986), and this conflict may be more apparent in well-established firms than in startups (Corbett & Hmieleski, 2007). For the professional manager, a misalignment between decision-making style and firm characteristics may lead to an exit from the firm (Brigham, De Castro, & Shepherd, 2007). But, for the founder of a firm, it may create a sort of identity crisis, manifested either in the form of a recommitment to the firm's entrepreneurial vision, or an assessment that the original vision has been fulfilled, and a stable, desirable threshold has been reached. If experience teaches an entrepreneur how to successfully defend their firm's position, in some cases the cost of the struggle to learn such an ability may be seen as justification for maintaining a defensive posture.

This section has sought to explain the origins of cognition research, its development in the area of management, and some of the key areas of interest and unresolved issues that are most relevant to this dissertation. Those areas include issue categorization and attention, selective perception, cognitive inertia and issue salience with respect to organizational vision, and to a lesser extent, knowledge structures/schema, and specific mental models. A focus on these specific cognitive issues will provide the basis for establishing the means by which pre-existing attitudes and newly gained information are acquired and combined to determine intention. Managerial cognition research has laid the groundwork for understanding the decision-making processes of management individuals and teams, as well as managers engaging in entrepreneurial activity. In the next section, this dissertation will discuss how cognition research has been adapted into the entrepreneurship literature more specifically.

2.3.2.2 Entrepreneurial Cognition Research. Entrepreneurs may benefit from the accuracy of their perceptions, but even though risk-taking is generally considered an entrepreneurial characteristic, and is a dimension of EO (Miller, 1983; Covin & Slevin, 1989), Palich & Bagby (1995) found that entrepreneurs do not consider themselves to be risk-takers any more than the average manager. Rather, entrepreneurs tend to have relatively positive outlooks, and tend to be less threat-sensitive than the average manager.

Mitchell et al. (2007) note a relative paucity of research into the entrepreneurial individual during the 1980s and 1990s. This, they note, was due in part to an issue of measurement development, specifically the use of proxy variables that failed to capture individual-level managerial characteristics, cognitions, and behaviors. Davidsson (1991) recounts several of these proxy variables. Ability, he notes, has often been measured through

general and business education, business experience, and founder status. Need has often been measured through firm age, managerial age, and firm size. Opportunity has been measured through industry characteristics related to employment and firm environmental characteristics, including population total, density, and change, as well as university presence and customer concentration. There may be better measures of objective need and perceived need, however, such as a firm's financial well-being, competitive environment, and psychometric interpretation of the manager's vision and distance from the attainment of that vision, with the last of these falling squarely in the realm of cognition research.

These issues of measurement have been important to the development of not just entrepreneurial cognition research, but to entrepreneurship research in general. As Baron (2004) wrote, there are three basic questions addressed by entrepreneurial literature: the question of why certain individuals become entrepreneurs while others do not, the question of why certain individuals are better than others at identifying exploitable product or service opportunities, and the general question of why entrepreneurial success varies. Of these three questions, the second can only be explored through the use of a framework that includes cognitive elements. Mitchell et al. (2007, p. 5) rephrase this line of questioning in socio-cognitive terms, bounded by the entrepreneurial situation: "How do entrepreneurs think, reason, and behave, such that they create value and wealth through the identification and implementation of market opportunities?" The authors proceed to argue that insight into this question may be found in the areas of heuristics-based logic, perceived connections and alertness, entrepreneurial expertise, and effectuation. To the point of entrepreneurial expertise, Baron and Ensley (2006) found that experienced entrepreneurs had markedly different opportunity recognition than novice entrepreneurs.

Palich and Bagby (1995) note another reason that cognitive considerations are important to entrepreneurial research. Their findings indicate that the cognitive processes of entrepreneurs, which are amenable to training, influence the extent to which business situations are categorized as positive opportunities. Threats and opportunities are to be distinguished from each other, as they are not mere opposites, nor are managers equally sensitive to them, generally responding more strongly to threats than to opportunities (Jackson & Dutton, 1988). The importance of recognizing threats is apparent from studies like Chattopadhyay, Glick, and Huber (2001), who found that while threats influenced organizational action, opportunities did not, contrary to what was predicted in previous literature. Butler et al. (2010) argue, however, that opportunity does influence firm action, specifically in determining international expansion. At the same time, tolerance of ambiguity improves the likelihood of interpretation as opportunity. Fear, on the other hand, is negatively related to entrepreneurial exploitation, and contrary to tolerance of ambiguity, fear negatively moderates the positive relationship between interpretation and exploitation (Welppe, Spörrle, Grichnik & Audretsch, 2008). The use of information itself is positively related to optimistic issue interpretations of gain and controllability, (Thomas et al., 1993; Ucbasaran et al., 2008), such that both social sources of information, and the use of information itself can both be understood as related to greater likelihood of entrepreneurial activity.

Table 2. Summary of Selected Entrepreneurial Cognition Studies

Study	Orientation	Variables Studied	Sample	Key Findings
Palich & Bagby (1995)	Empirical	Cognitive categorization, entrepreneurial status	92 complete responses from a sample of 548 members of a business organization	Entrepreneurs do not see themselves as less risk-averse than non-entrepreneurs. Entrepreneurs categorize business scenarios more positively than their non-entrepreneur counterparts.
Busenitz & Barney (1997)	Empirical	Cognitive biases and heuristics, entrepreneurial status	124 entrepreneurs	Entrepreneurs and managers behave substantially differently in large organizations. Entrepreneurial cognitive biases may be an advantage in the early years of a firm and a liability as the firm matures.
Mitchell et al. (2000)	Empirical	Individualism, power distance, arrangements, willingness, and ability scripts; new venture creation decision	753 respondents in seven countries	Individualism and power distance were positively correlated with willingness and ability scripts; arrangements, willingness and ability scripts were correlated with the new venture decision. Individualism and power distance were associated with new venture creation decisions through interaction with willingness and ability scripts.
Gaglio & Katz (2001)	Conceptual			Authors note methodological issues in the study of entrepreneurs' opportunity identification and propose an agenda for study of the concept of entrepreneurial alertness.
Mitchell et al. (2002)	Conceptual			Summary of the existing state of entrepreneurial cognition and calls for more use of the cognitive perspective in the field of entrepreneurship research.
Mitchell et al. (2007)	Conceptual			Assesses the state of entrepreneurial cognition research and provides suggestions for further integration of cognition into the field of entrepreneurship.

Study	Orientation	Variables Studied	Sample	Key Findings
Ucbasaran, Westhead & Wright (2008)	Empirical	Human capital and entrepreneurship-specific measures, business opportunity identification and pursuit	588 private firm owners	Entrepreneurship-specific measures were better predictors of business opportunity identification and pursuit than general human capital variables.
Butler, Doktor & Lins (2010)	Conceptual			Proposals for integrating ability to absorb uncertainty and ability to bear uncertainty into a process model leading from cognition to opportunity recognition to the decision to engage in international entrepreneurship.
Lim et al. (2010)	Empirical	Institutional factors (legal and financial), venture arrangements and willingness scripts, venture creation	757 entrepreneurs and non-entrepreneurs	Institutional elements influence entrepreneurial cognition in the form of venture arrangements and willingness scripts. These in turn influence the venture creation decision.
Grégoire, Corbett, & McMullen (2011)	Conceptual			Proposals to address poorly articulated concepts in entrepreneurial cognition research, calls for the disentanglement of cognitive antecedents, further study of process interactions, and further consideration of levels of analysis.
Autio, Dahlander, and Frederiksen (2013)	Empirical	Opportunity interpretation, technological probing, community attention, community spanning	275 online community members	Lead user attributes and technological probing are positively related to opportunity interpretation, Community attention and community spanning are positively associated with entrepreneurial action. Information exposure reduces demand uncertainty and increases the likelihood of entrepreneurial action.

Study	Orientation	Variables Studied	Sample	Key Findings
Nyock Ilouga, Nyock Mouloungni, & Sahut (2014)	Empirical	Self-determination, initiative, resistance to uncertainty	1010 university school students in France	Personal dispositional factors are related to individual commitment to entrepreneurial activity.
Wood & Williams (2014)	Empirical	Novelty, resource efficiency, perceived magnitude of worst-case scenario, market and technology knowledge, opportunity attractiveness	498 decisions from 62 entrepreneurs	Novelty and resource efficiency enhance the attractiveness of opportunities, the magnitude of worst-case scenario conceptualization reduces opportunity attractiveness, worst-case scenarios negatively moderate the relationship between novelty and opportunity attractiveness and the relationship between resource efficiency and opportunity attractiveness. Technology and market knowledge positively moderates the same novelty-attractiveness and resource efficiency-attractiveness relationships.
Oyson & Whittaker (2015)	Empirical		12 case studies from New Zealand firms undergoing the process of internationalization	Discovery of international opportunity was a necessary condition of internationalization. Both socially-acquired information and internally-developed (imagined) knowledge led to opportunity discovery. Opportunity can be largely subjective, and opportunity exploitation requires purposeful processes of both cognition and action.

2.3.2.3 Social Capital and Entrepreneurial Cognition. Managerial cognitive ability is important to entrepreneurial activity. So too is the social capital that derives from interpersonal relationships, intra-industry connections, and institutional support (Hoskisson, Covin, Volberda, & Johnson, 2011) The ability to increase the knowledge resources of a firm and social or relational proximity (“trust-based interaction between actors”, Petrou & Daskalopoulou, 2009, p. 1595) influence the firm’s innovation activity, and thereby its growth prospects. The importance of relational proximity to innovation is magnified by the presence of greater spatial distance. Maine, Shapiro, and Vining’s (2010) study of new technology firms in the United States also found that spatial proximity to metropolitan clusters (which offer access to both institutional and other specialized resources) was related to firm growth. This advantage gained from proximity to clusters was found to be particularly strong in firms with limited internal resources in an earlier study (Audretsch & Feldman, 1996). In their study of US manufacturing small firm growth, Acs and Audretsch (1990) found that small firm growth was “negatively related to industry capital-intensity, advertising intensity, and the extent of unionization,” while it was “positively related to the extent of human capital, the amount of innovation in an industry, and apparently the share of innovations contributed by small firms.” (p.151) This earlier work emphasized innovation as a means by which small firms can overcome any disadvantages related to size. Aside from proximity, the nature of social network members is of consequence to the value of information and resources gained from the network. Advisors with business-relevant information, such as lawyers, suppliers, customers, business friends, and business relatives (Robson & Bennett, 2000) significantly improve SME growth prospects.

Informational influences gained from social capital that engage in formal business networking is also relevant to growth outcomes, as Schoonjans, Van Cauwenberge, and Vander

Bauwhede (2013) found in a study of Belgian Flemish SMEs, comparing those participating in the PLATO networking program run by the Flanders Region Chamber of Commerce (VOKA) to those that did not participate in that program. The PLATO program is privately organized and government-supported and consists of “team building activities, meetings in fixed groups and coordination meetings” (p. 172). Their study linked net asset growth and added value growth to formal business networks, but no relationship between short-term employment growth and formal business network participation was found. The authors noted that this was not surprising as their study looked at employment growth over the course of one year, and in such a time period employment tends to be “relatively fixed” (p.177). The effectiveness of programs like PLATO emphasizes the importance of social engagement to SME behavior and outcomes, but as Schoonjans et al. (2013) note, their study was not able to explore SME manager characteristics and demographics in detail. Other, non-informational resources can be gained from social capital, such as the financial advantages to be gained from close social ties with banks (Uzzi & Gillespie, 2002), and these ties also improve the financial outlook of the firm.

Social learning theory (Bandura, 1977; Manolova et al., 2012), posits that motivations are socially acquired, and that outcomes such as firm growth intention, or ultimately firm vision, are shaped by external factors such as role models, and social acceptability or social desirability, as well as by internal personality factors. The presence or absence of mental models, which may be acquired through social capital resources, is an essential component in the manager’s cognitive toolbox through which opportunity and threat can be identified and interpreted in terms of a response (Gary & Wood, 2011; Weinstein & Standifird, 2010). In this sense, social capital clearly influences the manner in which managers interpret information. Additionally, when information about financial or other resource support, market characteristics, or competitor

activity is made available to the manager through social capital, it is inevitably interpreted in some way, and that interpretation can influence the manager's growth intentions for the firm (Burt, 1992; Granovetter, 1973; Hansen, 1995). Social capital also offers some proportion of its influence over growth intention directly (Greve, 2008), when the information about the social desirability of growth acquired through social comparison does not require interpretation, but rather serves as a model for expected or celebrated behavior. As such, it should not be surprising that entrepreneurial network embeddedness is related to new firm growth (Hansen, 1995). Social capital then is important to entrepreneurial cognition, but it also intermingles with cognition to influence entrepreneurial activity.

2.4 Chapter Summary

This section has presented a review of existing literature regarding entrepreneurial and small business growth outcomes, including firm growth and firm growth intention as outcomes, and a variety of previously studied antecedents of those outcomes, including managerial characteristics, firm resources, organizational demographics, contextual factors, cognitive issues, and social influences. The existing literature indicates that while the body of work related to small firm growth is substantial, it is still fit for further development. Small firm growth research in general has underemphasized both cognitive and social factors (see Table 1), and accordingly the literature has repeatedly called for a greater focus on information processing and network theory. Of the many antecedents of firm growth in the literature, few directly address topics related to the development of growth intention, as opposed to growth.

Committing to growth requires the perception of an opportunity, the belief in one's ability to make use of the opportunity, and the perceived need to take action that will involve a change process. The socio-cognitive perspective explains how the entrepreneur acquires these

perceptions and makes these determinations. Multiple factors may constrain growth intention, even when opportunity exists, and even when it is identified. For example, financial concerns might constrain growth intention, but so might firm vision, comfort level with firm size, or the need for independence. Understanding how socially-acquired information, mental models, and feedback interact with managerial cognition and inclination to produce growth intention is the major concern of this research. In bringing together these issues that have been studied independently, but rarely in concert, this research aims to illuminate the social and psychological processes that explain in large part whether or not growth intention occurs. In the next chapter, this dissertation will further develop these concepts into a process model that attempts to resolve some of the logical implications of the previous literature. Specifically, the next chapter will explain why a distinct and socio-cognitive process model is warranted for growth intention, to clarify and separate issues of managerial decision-making from other growth-related factors that are outside of the decision-making process.

CHAPTER III

THEORY AND HYPOTHESIS DEVELOPMENT

This chapter will detail the rationale behind a model of firm growth intention that includes managerial characteristics of Social Capital, FOF, and Managerial Optimism, interpretation categories of Gain(Opportunity) and Threat of Loss, and the moderating effect of EO on interpretations that lead to growth intention. Section 3.1 will briefly discuss the nature and importance of a Socio-Cognitive approach in understanding small firm growth intention. Section 3.2 will explain the theoretical foundations of the dissertation. Section 3.3 will explain the model in greater detail, including background related to constructs not yet discussed in this research. Section 3.4 will present research hypotheses, and section 3.5 will provide concluding remarks on the research model. In summary, this chapter will propose a model that extends research beyond the Ability-Need-Opportunity (ANO) framework by disentangling the issue of growth intention from growth, it will address the need to consider issue interpretation beyond opportunity, drawing upon the strategic issue interpretation literature, and it will include social factors as important antecedents of issue categorization.

3.1 A Socio-Cognitive Approach to Small Firm Growth Intention

Chapter 2 of this dissertation presented the ANO framework as the prevailing paradigm (Davidsson, 1991) in small firm growth research. Measurement items related to that paradigm have frequently been demographic in nature, including general measures of human capital such

as education and experience, often in the form of organizational or industry tenure, or business ownership and firm creation (Delmar & Davidsson, 2000; Jones & Tullous, 2002; Mosey & Wright, 2007; Ucbasaran et al, 2008; Westhead et al, 2005). By presenting the model described in this chapter, this work extends entrepreneurship models developed from the ANO framework by emphasizing the role that the individual's cognition plays in influencing decision outcomes, and by addressing the managerial and social antecedents of such cognitions.

While social capital, managerial influences and cognition have been used to explain growth intention and actual growth (Davidsson, 1991), the ANO framework is problematic, because it does not disentangle growth intention from actual growth. One of the problems arising from this is a greater difficulty developing models that accurately result from managerial disposition as an antecedent. For example, while optimism leads to greater sensitivity to positive information, and is positively related to entrepreneurship, at higher levels it is negatively related to accurate issue interpretation (Hmieleski & Baron, 2009; Muir, 2007), because it is also related to the dismissal of negative information. For this reason, it may serve well as a predictor of growth intention, but not of growth. Models that do not make the distinction between growth intention and actual growth as outcomes have tended to confound information resources and managerial interpretations with other social and environmental factors that do not involve managerial decision-making, and thus intention. Certainly, social capital, managerial factors, and interpretation influence both growth and growth intention, and interact with each other to do so, but this dissertation argues that they do so in ways that are distinct to the growth intention outcome and likewise to the growth outcome. The model presented in this dissertation significantly extends the ANO framework in that it integrates factors long argued to be related and interactive, yet not previously studied in concert. Nor have these factors been integrated in a

model specifically addressing Growth Intention as an outcome that is completely separated from the larger concern for Growth Outcome.

The model presented herein also seeks to redirect the focus of entrepreneurship research in another way: entrepreneurship has previously been described as the nexus of promising opportunities and interested individuals (De Carolis et al., 2009; Shane & Venkataraman, 2000), but research suggests that it is more than that. In brief, this dissertation will make use of developments in socio-cognitive research to explain a model and hypotheses that provide an explanation of how internal and external influences, both in terms of static tendencies and dynamic information resources, combine to determine small firm growth intention. Figure 3 (below) presents the model used in this study, including Managerial Optimism, FOF, and Social Capital as socio-cognitive characteristics that predict Market Information Interpretation as Gain(Opportunity) and Threat of Loss. These interpretations in turn predict Small Firm Growth Intention. The relationships between the interpretations and Growth Intention are moderated by EO, which is the manager's stable propensity for risk-taking, innovativeness, and proactiveness.

The socio-cognitive approach to understanding small firm growth intention is also important in that it combines two developed areas of research (Social Capital and Cognition literatures). It does so in a way that acknowledges that these two areas mutually imply several conclusions about each other, they explain a great deal about each other, and each requires the acknowledgement of the other in order to achieve some form of completeness. Social capital is created collectively but possessed individually, and those individuals and their cognitions, certainly for those in managerial roles that muster human resources, are themselves influenced by social capital. In the case of this research, Social Capital will be considered both in terms of

its ability to influence mental models that play a role in issue interpretation, and in terms of influencing the perceived desirability of growth itself.

The model in this research addresses these theoretical concerns by focusing directly on some of the “open questions” described by Mitchell et al. (2007) and echoed in Cardon et al. (2012). It addresses the possibility of entrepreneurs considering noneconomic values, includes consideration for the sources and nature of mental models and attitudes toward venturing, and seeks to explain how entrepreneurs acquire some of their cognitive structures. It also measures the relative influence of stable dispositions and momentary judgments over growth intention.

3.2 Theoretical Foundations

Previous research in the area of cognition emphasizes the interacting nature of long-term tendencies and shorter-term beliefs about the interpretability of the environment. Through scanning, information is gathered. It is then interpreted, and an action is taken, or not taken (Daft & Weick, 1984). Research into strategic choice (Astley & Van de Ven, 1983; Child, 1972; Hambrick & Mason, 1984; Miles & Snow, 1984) emphasizes learning as an important element of the decision-making process. This requires an internal tendency to gather information, but it is also dependent upon external information sources, both those within the reach of the manager independently, and those acquired socially. The interpretation stage of decision-making determines whether information from one of these sources compels an active, passive, or resistive decision, as the manager chooses to select such inputs for analysis or ignore them (Weick et al., 2005). Drawing upon entrepreneurial cognition (section 3.2.1), social capital (section 3.2.2), and Prospect Theory (section 3.2.3) literature, the model presented in this paper argues for the centrality of information interpretation as a determinant of growth intention.

3.2.1 The Firm Growth Decision as a Product of Managerial Interpretation

Entrepreneurs exhibit cognitive characteristics that contribute to their decision-making outcomes. These include significant cognitive biases that include counterfactual thinking, biased attribution, and tendencies toward self-justification (Baron, 1998). The richness and clarity of cognitive frameworks that contribute to decision-making also play a significant role in the entrepreneurial process by providing guidance to the entrepreneur as they identify opportunities (Baron & Ensley, 2006). Cognition is a determining factor in entrepreneurial decision-making with regard to mustering resources, interpreting opportunities, and managing firm size and organizational structure, all of which are part of the larger process of determining whether or not growth intention occurs (Cliff, 1998; Wiklund et al., 2003).

The entrepreneurial decision-making process requires information search in light of the entrepreneur's predisposition to environmental interaction (Daft & Weick, 1984), but also requires categorization of information once it is acquired. Such categorization ability determines how information is handled, whether it receives attention and action, or whether it is disregarded (Kirzner, 1979; Thomas & McDaniel, 1990). Apart from the personal impulses toward or away from entrepreneurial change, a significant amount of growth intention derives from cognitive processing of external information (Dutton, Fahey, & Narayanan, 1983). The entrepreneur's ability to interpret external information may be hampered by the volume and variety of that information, requiring cognitive sorting into familiar categorizations as a convenient form of information reduction. The familiar categorizations used during this process of information reduction may come from previous experience, or they may derive from external social sources (De Carolis & Saporito, 2006; Corbett & Hmieleski, 2007). Whatever the case, achieving interpretability, and thus intention, requires this cognitive process (Daft & Weick, 1984; Dutton

& Jackson, 1987; Schwenk, 1984). Without accounting for cognition, predisposition and social pressure can only influence growth intention via a path that does not include market information interpretation.

Cognition then, is an essential process in determining entrepreneurial growth intention, as entrepreneurs will encounter market information to some extent whether they seek it or not. Likewise, the predispositions and experiences of the entrepreneur, coupled with social factors, influence both the complexity with which the entrepreneur can understand market information, and the frequency with which market information is categorized as representing an opportunity for growth.

3.2.2 Social Capital Theory-Firm Growth Decision in the Social Context

For the purpose of understanding its role in managerial interpretation, this research considers the ways in which the goodwill derived from Social Capital provides access to cognitive resources. Social capital influences the information available to managers (Burt, 2000; Schoonjans et al., 2013), the way in which managers make decisions through schemata (Axelrod, 1976; Greenwood & Hinings, 1988; Gary & Wood, 2011), and the way in which managers are viewed and treated by other interested parties (Shane & Cable, 2002). In providing information that makes the manager aware of the existence of opportunity, mental models help the manager consider new ways of exploiting opportunity and make value judgments about growth itself. Thus, social capital influences managerial cognition directly, and growth intention both indirectly (through cognition) and directly (Greve, 2008; Manolova et al., 2012; Robson & Bennett, 2000).

Social Capital plays another important role in the development of entrepreneurial intention. Information gathering and interpretation lead to information access and search (discovery), interpretation of meaning, and decision-making (Zahra et al., 2000). The entrepreneur's personal perspective provides access to interpretable information about the environment, but so does Social Capital (Adler & Kwon, 2002). Nahapiet and Ghoshal (1998) noted this same ability of Social Capital to create new information, and posited that firms with greater Social Capital resources would be more effective in developing information. What this means in light of cognitive research is that Social Capital enhances the development not only of mental models, as mentioned previously, it also provides access to information about the market environment. Hence, Social Capital enhances the volume of gathered and developed information as well as the diversity of mental models through which the manager can interpret such environmental data, as mental models are themselves developed information (Axelrod, 1976; Greenwood & Hinings, 1988). Finally, Social Capital provides information that directly addresses the issue of whether or not growth itself is desirable.

Entrepreneurial action has a cognitive basis, but it also has a basis in Social Capital. Cognitive factors such as interpretation require the consideration of how a matter is interpreted, whether it is as threat or opportunity, or as gain or loss, and these interpretations depend upon cognitive frameworks, which can be socially acquired (Bandura, 1986; Baron & Ensley, 2006; Jackson & Dutton, 1988). At the same time, more stable tendencies influence the likelihood of a given event's interpretation as threat or opportunity (Mohammed & Billings, 2002), so there is a need for the inclusion of such relatively stable tendencies in a model of growth intention.

3.2.3 Prospect Theory-Firm Growth Decision as Gain and Loss

Prospect Theory (Kahneman & Tversky, 1979) explores the influence of risk perception upon decision-making. According to Prospect Theory, decision-makers focus their attention on conditions of certainty as opposed to conditions of uncertainty. This greater attention paid to certainty leads the decision-maker to follow a path that leads to risk-aversion (maintaining the present course) when gains are perceived as certain, and to risk-taking (changing course) when losses appear certain. Prospect Theory assumes a tendency toward loss-aversion, such that decision-makers “find the displeasure of losses to be greater than the pleasure of equivalent magnitude gains” (Holmes, Bromiley, Devers, Holcomb, & McGuire, 2011, p.1076), and that the perceived gain (or loss) of a condition increases (or decreases) at a decreasing rate. The entrepreneurial implication of prospect theory is that potential gains of starting a new business venture will be perceived not only in light of the absence of that venture, but also in light of the perception that possible gains are being lost by not pursuing a given venture (Baron, 2004). In that sense, the entrepreneur may perceive a lack of risk-taking as a loss in and of itself.

This work also emphasizes the importance of understanding how attention is directed, such that certain issues are weighted more heavily than others based not upon their potential outcomes, but upon other characteristics that either place them in the front of the mind of the entrepreneur, or render them discarded from attention altogether. Thus, if entrepreneurs favor decisions in which they feel they have greater expertise, it is because that expertise adds certainty and feelings of control to those decisions. Likewise, perceptions can be inhibited, and decisions selected against, where uncertainty is perceived (Ocasio, 1997). This associates Prospect Theory with the concept of FOF (Wood, McKinley, & Engstrom, 2013). Further research indicates that decision-makers will go to greater lengths (take greater risks) to mitigate certain loss or failure

than they will to seek gain (Holmes et al., 2011), a finding in accordance with the original formulation of Prospect Theory. Theoretically, this result also aligns well with work related to threat sensitivity, which indicates that while threats are less likely to be identified, they elicit stronger reactions once identification occurs and creates loss-sensitivity (Dutton & Jackson, 1987; Jackson & Dutton, 1988).

What this may mean for the new and growing firm depends upon how the entrepreneur perceives the performance of their organization. This perception, which may be not in absolute terms, but rather in relative terms that are framed by the mind of the individual engaged in decision-making. In contrast to the Behavioral Theory of the Firm (Cyert & March, 1963; March & Simon, 1958), which explains decision-making and behavior at the organizational level, Prospect Theory (Kahneman & Tversky, 1979) is concerned with analysis at an individual level, and as such is appropriate in considering the decisions of the small business owner or entrepreneur. Prospect Theory seeks to describe choices made by individuals that are sometimes irrational or idiosyncratic, rather than modeling ideal rational choices or making normative suggestions (Holmes et al., 2011; Tversky & Kahneman, 1992). If decision-makers in poorly performing organizations have a greater propensity for risk than successful organizations (Bowman, 1982), then it is worth considering that an entrepreneur may not see growth as a success in and of itself, but rather as an ongoing struggle to reach a goal that remains out of reach. Firm targets play an important role in determining the way in which a return is interpreted relative to a given risk (Fiegenbaum & Thomas, 1988). Accordingly, the place that a firm has in the manager's life appears to be a determinant of risk perception. Stewart and Roth (2001) found that entrepreneurs have a higher level of risk propensity than non-entrepreneurial managers, and that there is a marked difference between entrepreneurs whose primary focus is firm growth

versus those whose primary goal is producing family income. This difference in firm vision may over time account for the adoption of an orientation away from growth intention and toward a threshold mentality.

So, a non-entrepreneurial manager of a stable small business without growth aspirations may not see firm size and revenue stagnation as a lack of success; it may be perceived as an indication that the firm has attained a goal of sustainable stability. For the manager leading a firm in its nascent stage, greater risk-taking is warranted by the firm's proximity to absolute failure. Such a manager may perceive lower risk levels as half-measures that are less likely to result in a turn-around and growth for the organization. For the manager of a stable firm, seeking growth also represents risk. It is important to note, however, that Bowman (1982) found that firms that perform more poorly on objective measures do tend to seek more risk, indicating that for most business owners, performance measures are interpreted with relative consistency.

3.3 Theoretical Model

The theoretical model presented below in Figure 3 is an illustration of the proposed relationships discussed in this dissertation. It is intended to indicate the relationships between managerial characteristics (Managerial Optimism, FOF, and Social Capital), cognitive interpretations of market information as Gain(Opportunity) or Loss(Threat), and stable managerial tendencies toward risk-taking, innovativeness, and proactiveness in the form of EO. This proposed model is a starting point for the measurement and interpretation of these issues. The relationships between these constructs have theoretical support, but in concert, empirical support has not yet been established. This model focuses on two issues in order to establish such support.

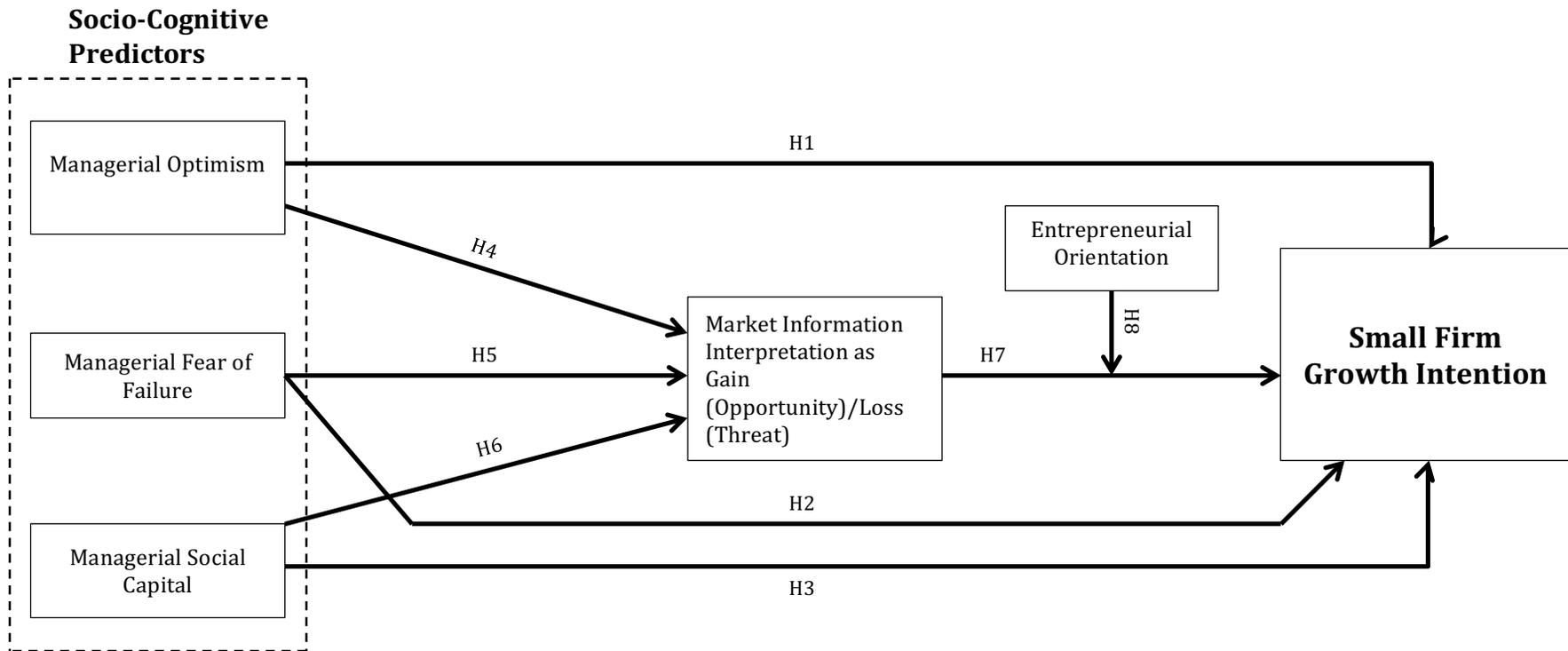
Firstly, the model focuses on Growth Intention as a dependent variable, rather than emphasizing Growth as an outcome. This is done in order to acknowledge that Growth Intention is a precursor of Growth, but a coherent model of Growth Intention should be resolved before considering a larger model that encompasses all of the precursors of firm Growth. With Growth Intention as a dependent variable, its predictors in the model include Managerial Optimism, FOF, Social Capital, Managerial Interpretation, and EO (as a moderator of the effects of Managerial Interpretation).

Secondly, the model focuses on Managerial Interpretation as a dependent variable, focusing on the influence of Managerial Optimism, FOF, and Social Capital over the manager's interpretation of market characteristics as representing either a Gain(Opportunity) or a Loss(Threat). While some interpretation literature (Dutton & Jackson, 1987) emphasizes evaluation as positive/negative, gain/loss, and controllable/uncontrollable as distinct aspects of Managerial Interpretation, later research emphasizes that controllability is likely a separate issue from the determination of Opportunity and Threat, and that measures of positive/negative and gain/loss evaluations perform essentially as elements of the same scale (Chattopadhyay et al, 2001; Thomas & McDaniel, 1990). For this reason, the model represents Managerial Interpretation in those terms, as a single construct. The representation of Managerial Interpretation as Gain(Opportunity) and Loss(Threat) is further supported by the results of the Pilot Study conducted for this research and described in Chapter 4.

This dissertation recognizes, however, the existing ambiguity of the discussion of empirical findings regarding the nature of control and gain as antecedents or components of Opportunity/Threat categorizations. As there is not yet an empirical model that clearly defines a single configuration, the model presented below in Figure 3 represents a starting point based

upon existing findings, against which data will be collected, focusing on what is generally agreed to be the core question in decision-making interpretation. In doing so, this research hopes to contribute to the literature through a model that integrates social and cognitive factors in a way that emphasizes the most relevant results of market information interpretations.

Figure 3: Dissertation Research Model



3.4 Hypothesis Development

3.4.1 Managerial Optimism and Small Firm Growth Intention

Davidsson (1991) describes the entrepreneur as interpreting the existence of opportunity, the need to exploit it, and the ability to do so. In a concrete sense, these issues are measurable as an overall interpreting of market information as Opportunity/Threat, and furthermore, these interpretations must also lead to growth intention if entrepreneurial activity is to occur, as attempts at new business activity are the ultimate defining outcome of entrepreneurial predictors. Given the findings regarding the relationship between optimism, Growth Intentions, and the interpretations associated with entrepreneurship, it does not seem reasonable in any sense to consider that entrepreneurship is an antecedent of these characteristics with which it is clearly associated. Rather, it seems much more logical to consider that the outcome associated with entrepreneurship (Growth Intention) is preceded by positively-valenced Gain (Opportunity) interpretations, and in turn by Managerial Optimism. The optimistic manager engages in more environmental scanning, believes in general that their firm will experience better outcomes than less optimistic managers, and believes that the results of their actions are more likely to result in positive (successful growth) outcomes. In other words, they exhibit more growth intention because they are more confident that such intentions will lead to positive results. Entrepreneurs, when defined as managers of nascent firms, are generally found to exhibit higher levels of optimism relative to their non-entrepreneurial counterparts, and this tendency does not appear to be strictly related to objective measures of experience with firm management (Cooper, Woo & Dunkelberg, 1988). Regardless of whether their interpretations are accurate, managers of nascent firms are more optimistic than those who do not (Cassar, 2010). Optimism is also a relatively stable human characteristic (Lounsbury et al., 2012; Wood et al., 2013), even in the

face of significant negative information (Schou, Ekeberg, Sandvik & Ruland, 2005). Optimism then, is related to entrepreneurship in a way that is not shared with non-entrepreneurs.

It is also worth noting that while Managerial Optimism (MOP) is expected to lead to higher levels of Small Firm Growth Intention (GI), studies have found both curvilinear and negative relationships between optimism and Firm Growth, measured in terms of both revenue and employment (Hmieleski & Baron, 2009; Muir, 2007). As noted earlier in this dissertation, the distinction between Growth Intention and Growth is of great importance to creating a parsimonious and consistent model of either. When considering the relationship between optimism and Growth Intention, it is essential to consider that the outcome of ever-higher levels of intention will not always be helpful to the firm, nor will they result in firm growth. At some point, optimism is no longer appropriate to the situation, and crosses into the realm of delusion. Higher levels of optimism may be an indication of blindness to real and present threats to the firm, or lead to false positives when attempting to identify opportunities. That explains the earlier findings related to growth.

The logic of this relationship is straightforward; the optimistic manager believes in their ability to succeed, and business growth is the most conventionally known measure of firm success (see Table 1). Mitchell and Shepherd (2010) further found that positive self-images (measured in their case as human capital and entrepreneurial self-efficacy) exerted a positive influence on entrepreneurial interpretations of opportunity. Hmieleski and Baron (2009) noted that entrepreneurs, when defined as managers attempting to develop new ventures, tend to score higher on measures of optimism than non-entrepreneurial managers. For growth intention then, as opposed to growth, consistent empirical support is found for a positive relationship with Managerial Optimism. Based on the above argument, I propose the following hypothesis:

Hypothesis 1: The level of Optimism among small firm managers is positively related to Small Firm Growth Intention.

3.4.2 Managerial Fear of Failure and Small Firm Growth Intention

Fear of Failure (FOF: Elliot & Church, 1997) is associated with defensive pessimism and self-handicapping (Elliot & Church, 2003) and has been shown to influence both the likelihood of entrepreneurial activity such as founding a new business, and the manager's interpretation of the meaning of growth success or failure. The manager that experiences FOF is preoccupied with the potential losses imagined as a result of action, so much so that the action is not taken, even when it may also represent significant potential gain. This poses a significant problem for achieving Growth Intention, because growth requires change, risk, and action. Stability, on the other hand, is very much in accordance with the defensive pessimism associated with FOF.

According to Prospect Theory (Kahneman & Tversky, 1979), interpretations of potential loss can have quite different influences on decision-makers, depending upon the decision-maker's interpretation of the certainty of that loss. Whether a risk is seen as loss-inducing depends largely upon the emotional impact that the risk poses to the manager. For example, attempting small firm growth is a proposition that involves risk. Managers must interpret not only how risky a decision is, but also how risky its alternative is. They must ask themselves the question, "If I attempt growth, will I lose more than I will gain?" If the answer is affirmative, FOF exists, and risk will not be taken. Given conditions where decline is already certain, however, FOF is low, as failure is a foregone conclusion. This in turn lowers the apprehension a manager might feel regarding risk-taking. Likewise, if a business is doing well, FOF will be relatively high, and they might be less likely to engage in risk-taking.

Fundamentally, FOF's negative influence over Growth Intention results from the entrepreneur's lack of belief in positive outcomes resulting from their efforts, and greater concern for and focus on the negative results that might occur if effort is made. Growth intention requires change and acceptance of the unfamiliar, which requires speculation about outcomes as opposed to the known quantity of the status quo. FOF can indicate both a lack of confidence that positive outcomes will result, and the sense that expectation that failure will extract an undesirable cost, whether to the firm, to self-worth, or to perception among peers and potential business partners. Even for relatively small firms, if the manager is not experiencing decline, FOF can restrain Growth Intention if the entrepreneur feels that the strategic change required to seek growth represents a threat to firm practices that have up to that point sustained the firm's existence. Its association with self-handicapping undermines performance-attainment and favors goals associated with performance avoidance (Elliot & Church, 2003).

At its core, then, FOF is the fear that a willful act of change will be identified shamefully with the manager that initiates it, and that the potential gain, both in terms of internal and external interpretation, is outweighed by the potential loss of initiating such an act and not succeeding. This in and of itself makes the initiation of acts of change less likely. Based on the above argument, I propose the following hypothesis:

Hypothesis 2: Managerial Fear of Failure among small firm managers is negatively related to Small Firm Growth Intention.

3.4.3 Managerial Social Capital and Small Firm Growth Intention

As previously discussed in this dissertation, Social Capital provides the means (physical and informational) to grow firms (Burt, 1992), the means to identify opportunities, and the

means to understand how opportunities can be exploited (Adler & Kwon, 2002; De Carolis & Saporito, 2006; Lim et al., 2013; Nahapiet & Ghoshal, 1998). The ability to create and utilize Social Capital is also a characteristic that distinguishes entrepreneurs from non-entrepreneurs (Liao & Welsch, 2005). At all stages of entrepreneurship, then, (discovery, interpretation, exploitation), Social Capital is of use in mustering resources and providing a framework for ultimately exploiting opportunity (Gary & Wood, 2011; Granovetter, 1973; Hansen, 1995; Weinstein & Standifird, 2010).

The effect of Social Capital toward Growth Intention can be both direct and indirect. Direct influence (without requiring interpretation) toward Growth can occur through the good will and material assistance provided by another participant in a social/business relationship because they value the relationship or see the potential for mutual benefit. Direct influence over Growth Intention comes from the social influence that provides information that growth itself, regardless of the interpretation of present market information, is a desired outcome. Social Capital's primary direct contribution to Growth Intention comes through the sense the entrepreneur gains from having sources of support. Even in the absence of market information regarding a specific, support in the form of tangible and intangible assets made available through networking give the entrepreneur the sense that attempted growth will be more likely to succeed if it is attempted. In other words, the support itself represents an opportunity in the mind of the entrepreneur. Relational issues including approval and prestige also compel the entrepreneur to seek growth, as greater social awareness of the entrepreneur's performance creates pressure to satisfy social expectation (Nahapiet & Ghoshal, 1998). Finally, there are tangible resource benefits to Social Capital. Empirical findings regarding finance, for example (Birley, 1985), indicate the dependence of small firm growth financing upon close familial and social relations.

The presence of Social Capital expands that important resource pool. All of these factors support the existence of a positive relationship between managerial Social Capital and firm Growth Intention. Social Capital does not require the interpretation of market information events to influence Growth Intention, it can provide meaningful resources and substantial encouragement that Growth Intention is possible or desirable without the consideration of specific market events. Based on the above argument, I propose the following hypothesis:

Hypothesis 3: Managerial Social Capital is positively related to Small Firm Growth Intention.

While it is considered that stable managerial characteristics may exert direct influence over Growth Intentions (Elliot & Church, 2003; Hmieleski & Baron, 2009; Nahapiet & Ghoshal, 1998; Mitchell & Shepherd, 2010), especially in the absence of clear external cues, the literature strongly suggests that the interpretation of discrete market information events is a notable predictor of Growth Intention (Conroy, Metzler, & Hofer, 2003; Gary & Wood, 2011; Geers, Handley, & McLarney, 2003; Kahneman & Lovallo, 1993; Li, 2011). Again, the hypotheses are supported by research, but they are also supported by logic. To argue that managerial characteristics and social influences do not influence interpretation is a contention not supported by the literature. Furthermore, to argue that Growth Intention is determined in the absence of information interpretation, in the complete absence of thought or consideration, seems logically untenable. Thus, the following three hypotheses enumerate the relationships between stable managerial characteristics and growth intention by the interpretation categories discussed in this and previous sections.

3.4.4 Managerial Optimism and Market Information Interpretation

Firm performance (actual growth) outcomes aside, research into optimism indicates both that it influences overall intentions, and that it also influences the interpretation of events, be they positive or negative, acting to amplify positive interpretations and suppress negative interpretations (Geers et al., 2003; Mitchell & Shepherd, 2010; Schou et al., 2005). Optimistic individuals consistently view their conditions as conducive to growth (Jaroslav, Jiří, Přemysl, Roman, & Hudáková, 2014). Optimistic individuals also consistently form their interpretations of success probability to the dismissal of other, objective forms of environmental feedback, including viewing business startup itself as a viable opportunity, and dismissing threats from other business rivals (Kahneman & Lovallo, 1993). Consistent again with Davidsson's (1991) description of the entrepreneur, and with Daft and Weick's (1984) model of scanning, interpretation and action, this research considers that stable characteristics like Managerial Optimism prompt information search and shape its interpretation.

Optimism leads to greater information search for positive information, and thus a greater amount of market information gathered because of the belief that such search will be fruitful. The belief that a positive outcome is possible leads to the search for evidence of such an outcome. This greater information search increases the probability that perceived opportunities in the marketplace will be uncovered. This is not optimism's only effect on information search, however. Optimism also shapes the interpretation of all potential market information. In some cases, issues which are not necessarily promising for the entrepreneur's firm will nevertheless be seen as such by the optimistic manager. In other words, high levels of optimism lead to higher levels of both market information being both correctly and incorrectly identified as Gain(Opportunity) (Hmieleski & Baron, 2009). This increases the total amount of market

information interpretation as opportunity. Some amount of information that represents possible negative consequences for the manager may be improperly interpreted to the firm's detriment and dismissed as non-threatening when it in fact represents a likely loss. Regarding the direction of the relationship, while Daft and Weick's (1984) model presumes that action permits learning that influences both scanning and interpretation, it does not seem logical that the interpretation and action taken regarding a single external event will strongly predict Managerial Optimism, which is stable over the long term. Over time, multiple events may have a cumulative effect upon managerial characteristics, but with respect to the interpretation of discrete events, the stable characteristics of management are a more reasonable choice as predictors of interpretations and intentions. Accordingly, the extant literature supports a positive linear relationship between Managerial Optimism and interpretation as Gain(Opportunity). Based on the above argument, I propose the following hypothesis:

Hypothesis 4a: Managerial Optimism is positively related to Market Information Interpretation as Gain(Opportunity).

Hypothesis 4b: Managerial Optimism is negatively related to Market Information Interpretation as Loss(Threat).

3.4.5 Managerial Fear of Failure and Market Information Interpretation

FOF has already found support in the literature (Mitchell & Shepherd, 2010) as a negative predictor of opportunity interpretations, and a positive predictor of threat interpretations (Conroy et al., 2003). Lower levels of FOF are related to a greater likelihood of interpretation of a condition as an opportunity. Similarly, higher levels of FOF have found empirical support as negatively influencing the likelihood of interpretation of a condition as opportunity (Li, 2011;

Mitchell & Shepherd, 2010). Specifically, the self-image of vulnerability induced by FOF was shown to negatively affect managerial interpretation of opportunity.

Just as FOF is a negative predictor of opportunity and a positive predictor of threat, it also functions as a predictor of general avoidance of risk-taking (Conroy, Kaye, & Fifer, 2007). FOF thus appears to function not only as a predictor of intentions toward actions, but also as a predictor of the interpretation of external information. FOF is a characteristic that compels self-defeating thoughts in the mind of the manager. The manager experiencing FOF does not want to engage in risk, and so does not bother to seek opportunities for risk-taking through market information search. So, just as Managerial Optimism leads to higher levels of information search due to the inclination that such search will be fruitful, FOF leads to lower levels of information search for fear of what may be uncovered, and for fear that such information search will result in disappointment. To the extent that the manager with FOF does gain market information, they interpret such information with a bias toward low opportunity potential and high threat potential in order to avoid facing the possibility of failure that growth attempts necessarily require. FOF causes the manager to direct their attention away from opportunity, and results in a lower total number of identified opportunities (Mitchell & Shepherd, 2010).

Whatever information is gained from information search or from the passive acquisition of information, FOF increases the likelihood of its interpretation as a threat of loss, compelling the manager to overlook the upside of opportunity in the market and focus on the downside of threat as a greater concern. This makes the avoidance of loss the focal concern of information interpretation. The exception to this relationship is the same special case as that for optimism: the failing firm. When a manager is already facing failure with a high degree of certainty, such

fear will override concerns about the risks required to attempt the survival of the entrepreneurial venture. Based on the above argument, I propose the following hypotheses:

Hypothesis 5a: Managerial Fear of Failure is negatively related to Market Information Interpretation as Gain(Opportunity).

Hypothesis 5b: Managerial Fear of Failure is positively related to Market Information Interpretation as Loss(Threat).

3.4.6 Managerial Social Capital and Market Information Interpretation

The value of Social Capital to the manager can be understood in terms of its contribution to experience-based cognitive frameworks contributed by social connections to the manager. The breadth and depth of socially-acquired frameworks are essential to entrepreneurial (growth related) opportunity recognition, as experienced entrepreneurs possess cognitive representations of opportunity that are markedly more clear and content-rich (Baron & Ensley, 2006). Social Capital not only brings tangible resources, it also enables intellectual capital creation (Nahapiet & Ghoshal, 1998). From this point of view, Social Capital can contribute to the likelihood of opportunity identification through a social contact's assessment, using that contact's own framework, that something is an opportunity, and through a socially-acquired framework used by the manager to make the decision on their own that something is an opportunity. Social Capital's influence over decision-making includes a greater variety of mental models (Gary & Wood, 2011; Weinstein & Standifird, 2010) appropriate to interpreting and managing external market information to the benefit of entrepreneurial activity. Social Capital thus not only increases the likelihood that a framework will exist that identifies an opportunity, it also gives the manager a greater sense of certainty, and a greater volume of information, resources, and mental models to manage market information, improving the probability of interpreting market

information as useful to the advantage of the manager (De Carolis et al., 2009; Hoskisson et al., 2011).

Social Capital's role in interpreting opportunity derives from several sources. One is the direct assistance of others in identification of opportunity, which occurs because Social Capital exposes the manager to more information about the market. Another derives from socially acquired mental models that help the manager identify, understand, and make use of opportunity on their own. At the same time, however, the presence of a greater variety of mental models for managing market information increases the likelihood that a given market condition of possible gain will be more exploitable as an opportunity, or that a given market condition of possible loss will be minimized as a source of threat. Based on the above argument, I propose the following hypotheses:

Hypothesis 6a: Managerial Social Capital is positively related to Market Information Interpretation as Gain(Oppportunity).

Hypothesis 6b: Managerial Social Capital is negatively related to Market Information Interpretation as Loss(Threat).

3.4.7 Market Information Interpretation and Small Firm Growth Intention

Interpretation categories themselves, as previously discussed, are supported by the literature as predictors of managerial intention (Choi, Levesque, & Shepherd, 2008; Dutton & Jackson, 1987; Jackson & Dutton, 1988; Thomas & McDaniel, 1990; Sharma, 2000; Staw, 1976; Thomas et al., 1993). Interpretation as Gain(Oppportunity) as opposed to Loss(Threat) also reduces reliance on previous courses of action and de-escalates commitment to the status quo, which reduces apprehension regarding new business activities and encourages organizational change. This leads to a hypothesis regarding positively and negatively-valenced interpretations of Market Information.

These hypotheses are further supported by recent research indicating that information that influences interpretation and exploitation decisions is gained not only by personal and social means, but that emotional factors such as fear are similarly processed as information, and influence interpretation and exploitation as well (Welppe, Spörrle, Grichnik, Michl, & Audretsch, 2012). In accordance with Daft and Weick (1984), it is presumed that scanning and interpretation of events are necessary antecedents of decisions regarding action. Interpretations of certainty (De Carolis et al., 2009) have been shown to be positively related to the progress of new venture creation. Cognitive interpretation is similarly supported as a predictor of growth intention (Greve, 2008; Manolova et al., 2012; Robson & Bennett, 2000). If market information is interpreted by the manager as an opportunity, the manager believes that its exploitation will benefit the firm, and that the manager is capable of making it do so (Thomas & McDaniel, 1990). Failure to attempt an exploitation of such an interpreted opportunity will represent a loss to the firm, and avoiding such a loss means adopting a posture of Growth Intention.

On the other hand, the entrepreneur's attempt to exploit an interpreted opportunity through Growth Intention will be perceived as a low-risk activity that avoids the risk of financial, personal, and social losses. The manner in which interpretation of market events relates to Growth Intention is largely similar to the way in which Managerial Optimism and FOF do. One of the important distinctions, however, is that Managerial Optimism and FOF represent stable dispositional traits of the manager, while market interpretation is specific to the interpretation of new and potentially transient external conditions, requiring cognitive analysis. After interpretation of market information, if the manager believes there is significant opportunity for gain and non-significant threat of loss, a posture that expands the firm's operations to exploit the opportunity is warranted. If, on the other hand, the threat of loss is perceived to be greater than

the opportunity for gain, a defensive posture that maintains current operations without expansion is adopted. Based on the above argument, I propose the following hypotheses:

Hypothesis 7a: Market Information Interpretation as Gain(Opportunity) is positively related to Small Firm Growth Intention.

Hypothesis 7b: Market Information Interpretation as Loss(Threat) is negatively related to Small Firm Growth Intention.

3.4.8 The Moderating Effect of Entrepreneurial Orientation (EO)

EO, introduced in Miller and Friesen (1982) and Miller (1983), and developed by Covin & Slevin (1991) and Lumpkin & Dess (1996) is proposed as a moderating influence on cognitive interpretations leading to Growth Intention (GI). In the model above in Figure 3, EO is expected to moderate interpretations of internally and externally-acquired information with respect to firm Growth Intention (GI). EO itself is a stable attribute, typically measured at the firm level, but in the case of the manager who is responsible for firm-level decision-making, may be considered at an individual level. Indeed, the effects of EO can be strongest in such relatively autocratic conditions (Covin, Green, & Slevin, 2006).

EO measures managerial characteristics that have more behavioral (proactiveness, innovativeness, and risk-taking) outcomes than outcomes that would precede cognitive interpretation of external events into categories. Its dimensions also measure characteristics specific to growth and organizational change-related action rather than the general outlook issues addressed by Managerial Optimism and FOF, or the resource and information influences of Social Capital. Finally, EO, in measuring risk-taking, proactiveness, and innovativeness, is a tendency that requires interpreted information with which it can interact. If no risk is identified, for example, no risk can be taken. As such, it is proposed as a moderator of the interpreted categorizations that predict Growth Intention in this research model. This dissertation argues

that given a categorized interpretation of a market event, the manager will have a certain level of consistent tendency measurable by EO that further influences whether the categorized interpretation leads to Growth Intention. Based on the above argument, I propose the following hypotheses:

Hypothesis 8a: Entrepreneurial Orientation positively moderates the relationship between Market Information Interpretation as Gain(Opportunity) and Small Firm Growth Intention.

Hypothesis 8b: Entrepreneurial Orientation negatively moderates the relationship between Market Information Interpretation as Loss(Threat) and Small Firm Growth Intention.

3.5 Chapter Summary

The above hypotheses are supported both by empirical evidence in the literature, and through their areas of overlapping theory and mutual implications of logic. In addition, together they form a Socio-Cognitive model of Growth Intention that accounts for internal and external sources of information, for interpretation, for stable tendencies, and for the unstable, specific nature of the information that arises out of an individual situation that a firm might find itself in. At the same time, the model and hypotheses presented above in Figure 3 are consistent both with recent empirical findings, and with established theory in both the Social Capital and Cognition literatures. And, although this study focuses on small business, this model also provides an important contribution in that it is applicable to the explanation of managerial intention regardless of firm size or specific managerial disposition, so long as the manager in question is in a position to make decisions regarding the expansion of their firm's operations. In other words, its utility is not limited to the conventional entrepreneurial context.

It is important to note, that both while both Managerial Optimism and FOF are relatively stable and generally considered individual personality characteristics, they are susceptible to

social influence. Cardon, Stevens, and Potter (2011) found that entrepreneurial failure more greatly stigmatized managers in geographic locations that more publicly attributed failure to internal (managerial) sources than external (environmental) sources. For this reason, it may be suitable to conduct future research regarding the influence of Social Capital on both. It is important, too, to note that the effect of FOF appears to be diminished in some circumstances, most notably in the unemployed (Wood et al., 2013). This may be an example of how having “nothing to lose” can significantly change one’s perspective and interpretations of risk factors, self-worth, and social stigma. The factors included in this model include those that are characteristic of managers and those to whom they are socially tied, and as such, this model is intended to serve as a model that distinguishes the degree to which one decision-maker is likely to react to external input relative to another decision-maker. By necessity, this isolates the model from the specific and objective characteristic of the external events that are themselves interpreted.

Table 3. Summary of Hypotheses

	Hypothesized Relationship
H1	The level of Optimism among small firm managers is positively related to Small Firm Growth Intention.
H2	Managerial Fear of Failure among small firm managers is negatively related to Small Firm Growth Intention.
H3	Managerial Social Capital is positively related to Small Firm Growth Intention.
H4a	Managerial Optimism is positively related to Market Information Interpretation as Gain(Opportunity).
H4b	Managerial Optimism is negatively related to Market Information Interpretation as Loss(Threat).
H5a	Managerial Fear of Failure is negatively related to Market Information Interpretation as Gain(Opportunity).
H5b	Managerial Fear of Failure is positively related to Market Information Interpretation as Loss(Threat).
H6a	Managerial Social Capital is positively related to Market Information Interpretation as Gain(Opportunity).
H6b	Managerial Social Capital is negatively related to Market Information Interpretation as Loss(Threat).
H7a	Market Information Interpretation as Gain(Opportunity) is positively related to Small Firm Growth Intention.
H7b	Market Information Interpretation as Loss(Threat) is negatively related to Small Firm Growth Intention.
H8a	Entrepreneurial Orientation positively moderates the relationship between Market Information Interpretation as Gain(Opportunity) and Small Firm Growth Intention.
H8b	Entrepreneurial Orientation negatively moderates the relationship between Market Information Interpretation as Loss(Threat) and Small Firm Growth Intention.

CHAPTER IV

RESEARCH DESIGN AND METHODOLOGY

This chapter presents the methodology used for the empirical study of the hypotheses described in Chapter 3, investigating the role of socio-cognitive factors in shaping market information interpretation and ultimately growth intention. This chapter will address 1) the survey approach, 2) the population targeted for sampling, 3) the type of sampling used, 4) the procedure by which the sample data was acquired, 5) measurements that were used in the operationalization of model constructs, and 6) the statistical analyses that were used to interpret the collected data. The questionnaire used in the study is also discussed in this chapter, as are some of the limitations of the chosen approach.

4.1 Research Design Approach – Survey Methodology

This study presented targeted respondents with self-administered surveys that included some scale items previously used in similar contexts, where such scales are established and in sufficiently consistent use. In cases where no single scale prevails relevant to the context of this dissertation, a set of items was developed based upon analysis of items previously used in multiple studies. Finally, interpretation items related to opportunity and threat were measured through the use of structured scenarios. The structured scenario approach has been used in

previous studies related to opportunity and threat interpretation, but such scenarios will require adaptation for relevance to the specific target chosen for this study.

The survey used for this study was made available to respondents online, in order to provide respondents with greater ease of returning the survey, to simplify the data collection and coding process, to reduce time costs and expenses relative to physical printing and mailing, and to allow for targeting respondents over a broader range of markets. Anticipated response rates were low, and the desired number of responses was somewhat high, so attempts were made to contact a very high number of respondents (see discussion in 4.3.1). The survey was designed to be completed in roughly 15 minutes, and was sent in multiple (6) waves to respondents in an effort to improve response rates (Dillman, Smyth, & Christian, 2009). Also following guidelines in Dillman et al. (2009), communications were personalized to the extent possible given what information was accessible prior to contact. Dillman (2000) touted the tremendous cost advantages of online surveys, noting in later studies however (Messer & Dillman, 2011) that online contact followed by postal mail contact, although more costly, results in higher response rates.

Due to the use of human subjects in the study, the research methodology and survey was presented to the Institutional Review Board (IRB) at the university for approval. All requested changes by the board were made, and final approval was given to proceed with this dissertation's data collection. The previously discussed scale items were presented online, both to the review board, to respondents in a pilot study, and to respondents in the main phase of the study, using the university's approved system for survey administration, Qualtrics. Information regarding the Qualtrics survey was sent to targeted respondents for the main phase of the study, in the form of an IRB-approved introductory statement and consent form. The questionnaire and final IRB

approval documents are attached to this document as appendices, and pilot study results are reported later in this chapter, while main phase study results are reported in Chapter 5.

The survey approach in general, as self-report, does pose some issues, but is used in this case as for most of the issues represented by variables in this study, there is no alternative and more objective data source or method of extracting information to test the hypotheses. Certainly, there is not such a method that could be as easily and practically used with on a sample of the size desired by this research. That said, surveys are considered to be relatively acceptable, for interpreting the types of issues explored in this study, including demographic, personality, and behavioral measurements as well as attitudes and motivations (Evans & Mathur, 2005; Podsakoff & Organ, 1986), in no small part because there is not a clear alternative means of conducting such research on many of these variables. One concern with this approach is that the managers with decision-making authority will give responsibility for survey response to a subordinate. This may be an issue due to the nature of who is being surveyed (owner/managers of businesses), as response rates of executive-level organizational representatives exhibit lower response rates than non-executives (Baruch & Holtom, 2008). Once the survey is in the hands of the intended respondent, there is little that can be done to verify that this has not occurred, given the anonymity assured to the respondent. The faking of answers is also a concern, both due to carelessness or to social desirability. Careless answers may be difficult to detect except through the use of the reverse-coded items on the survey or other response characteristics (such as straightlining) that seem out of accord with consistent responses on multiple items representing a variable. Social desirability is reduced to some extent by anonymity and confidentiality (Maguire, 2009), but cannot be ruled out. Another concern for this approach is common method variance, which is discussed later in this chapter.

There was also a concern that response rates would be an issue. When response rates were unacceptably low to meet the sample size desired, or when the response rate created the impression of a non-response bias, methods recommended by Dillman et al. (2009) including follow-up mailings with greater degrees of personalization were considered. Ultimately, Qualtrics itself, one of several survey firms and organizations mentioned later in this chapter, offered data collection alternatives which ultimately met the needs of this research.

4.2 Target Population and Sampling Parameters

The target population for this study consisted of top-level owner and/or managers of small and medium-sized enterprises (SMEs) in the retail industry, defined in the United States by the Small Business administration as a firm with less than 500 employees that are independently owned and operated, and which do not dominate their industry or field. The retail industry is of particular interest as it remains competitive, has relatively low barriers to entry, is the second largest consumer sector in the US economy, and is geographically and demographically diverse (Mergent, 2014). The sample of interest to the study consisted of owner-managers over 18 years of age, as these are the parties with decision-making responsibility for their firms, and their firms are sufficiently small such that their decisions will encounter relatively less diffusion throughout lower levels of management during implementation.

4.3 Sampling Procedures

Sampling in studies of this lack a single uniform approach and may be simple random, systematic, stratified, clustered, or convenience. The sample obtained for the main phase of this study was collected after several attempts at different methods. The first attempt at the collection

of a usable sample included the use of a business mailing list obtained from InfoUSA, for Owner/Manager contacts at firms matching the study criteria in the United States, including some individuals in all 50 states, and generally distributed according to population. Surveys were distributed to 2,274 individuals on this mailing list in four mailings over a period of three months, resulting in a total of only 13 complete responses. Individuals needed reply only to one mailing. Attempts were then made to contact national and state retail federations, and the New Hampshire Retail Association, Retail Association of Nevada, Oklahoma Retail Merchants Association, Pennsylvania Retailers' Association, and Washington Retail Association agreed to assist in survey distribution. Ultimately, no complete responses were received from distribution of the survey through those organizations. An effort was also made to obtain a local sample in the Rio Grande Valley through contacts with Chambers of Commerce and Economic Development Corporations. Only the Weslaco Area Chamber of Commerce offered their assistance, and that distribution effort also did not result in any usable responses.

Given the results of the a priori data analysis (see section 4.3.1 below), it was clear that other approaches to data collection needed to be explored. Organizations considered for assistance in data collection included professional firms such as Qualtrics, Research Now, Critical Mix, Toluna, SSI, Lightspeed GMI, Clearvoice, and Experian, all of which provide access to a diverse array of customizable mailing lists, but only some of which appeared to have a record of providing a sufficient number of responses. Based upon multiple contacts with these firms, and the pre-existing relationship between the University and Qualtrics for survey distribution, Qualtrics was enlisted for assistance in survey distribution to mailing lists for which they had a record of higher response rates, after assurances from them that those contacted would clearly fit all of the criteria for the target population of interest of this research. This approach

has been in use by top empirical management journals for some time (Colbert, Bono, & Puranova, 2016; Neubert, Kacmar, Carlson, Chonko, & Roberts, 2008; Piccolo & Colquitt, 2006). For further assurances in the use of Qualtrics as a survey distributor, screener questions were included at the beginning of the survey to assure that those completing the survey were appropriate respondents. Of the 357 individuals who began the survey, there were 159 usable responses; those responses were used for the main phase data analysis described in Chapter 5. Responses not included were removed due to not meeting screener question criteria, not being complete, giving conflicting answers on reverse-coded items, giving wildly inconsistent answers on highly similar items, for indications of straightlining, and finally, several outliers were removed after the Firm Size measure was logarithmically transformed to improve normality.

4.3.1 A Priori Power Analysis

Given the analytical procedure (multiple regression), Hair, Black, Babin, Anderson, and Tatham (2006, p. 195) provide guidance for determining an appropriate sample size for a multiple regression with 10 predictor variables, including both research and control variables, assuming an alpha level of .05 and a power of .80. Under these conditions, a sample size of 50 will detect R^2 values of .29. A sample size of 100, will detect R^2 values of .15. A sample size of 250, will detect R^2 values of .06, and further increasing sample size to 500 will detect R^2 values of .05. From the point of view of interpreting relationships of even low levels of strength, samples larger than 250 appear to offer relatively diminishing returns. Further analysis indicates similar results (Soper, 2015), with a sample size of 333 required to detect R^2 values of .05, and a sample size of 251 required to detect R^2 values of .067. R^2 values of .20 or lower are generally considered weak (Cohen, 1988; Hair et al., 2006), and in the words of Hair et al. (2006, p.196),

“sample sizes of 100 will detect fairly small R^2 values (10 percent to 15 percent) with up to 10 independent variables and a significance level of .05”. In light of these points of reference, the sample size of 159 used in the main phase of the research appears to be adequate.

4.3.2 Desired Sample Size

Concerning the impact of sample size upon generalizability, Hair et al. (2006) indicate a minimum ratio of observations to variables of 5 to 1, and a desired level of between 15 and 20 observations per independent variable. In the case of this study, this guideline would prescribe a sample size of approximately 100 observations. For the purposes of this study, given these two sets of concerns, and a lack of data that would give prior estimates of effect sizes of the relationships being tested, the desired sample size is between 150 and 200 observations, representing a middle ground between concerns of practicality, power, and generalizability. Based upon this point of reference as well, the sample size use of 159 used in the main phase of the research appears to be adequate.

4.4 Questionnaire Design and Procedures

The survey for this study was self-administered online at the convenience of the respondent, without time limits or location requirements (other than online accessibility). Administration was done through the Qualtrics survey administration system, as required by university policy. Distribution of introductory letters and consent information, as well as the online location of the Qualtrics survey was done via email, with introductory and consent information repeated at the beginning of the online survey as well. Most of the measures used by the survey are pre-existing, but all measures that were used in the second (main) phase of the

study, including those developed specifically for the purpose of this study, were analyzed during a pilot (initial) phase to gauge item performance (results later in this chapter). In its measurement of Market Information Interpretation, this study makes use of structured scenarios (Jackson & Dutton, 1988; Lee & Kwon, 2006; Wally & Baum, 1994). The surveys used in both the main and pilot studies are included in the appendix section of this document. Administration of the surveys received IRB approval. Survey sections are presented as seven-point Likert scale items that include measures of growth intention, Small Business Orientation (Runyan et al., 2008), FOF, Social Capital, Managerial Optimism, EO, and finally, two structured scenarios with response items indicating perception of the scenario as Positive/Gain, Negative/Loss, and Controllability/Uncontrollability. Small Business Orientation and Controllability/Uncontrollability items have been included for further research. The first structured scenario presented focuses on an opportune economic environment, and the second focuses on a challenging economic environment.

4.5 Variable Operationalizations

This research makes use of measurement scales used in previous literature, as well as scales adapted specifically for the purposes of this research, which were developed from relevant theory and empirical results found in earlier research literature.

4.5.1 Dependent Variable

Small Firm Growth intentions items have been developed as a list of items combining the issues measured by Davidsson's (1991) five growth motivation items, Delmar and Wiklund's (2008) single growth motivation item, Cliff's (1998) and Kolvereid's (1992) measures of growth

intention, and Wiklund and Shepherd's (2003a) four-item index of growth aspiration. These measures focus primarily on growth in manpower and revenue. Items used to measure growth intention in this study were 7-point Likert questions phrased to measure growth intention with growth defined according to the respondent's understanding of growth, including "*As a retail manager I intend to grow and expand my business in the next few years*", and "*My primary goal is to grow this business beyond its current level.*" Note that in the "Growth Intention and Perceived Growth" section of Appendix B, the first four items are the items to be used for measuring Growth Intention, and the last two items are intended for future research.

4.5.2 Independent Variables

This section briefly discusses the scales used to measure responses in this study, including the conceptual definition and details of the specific scale used. A complete listing of items used is included in Appendix B, and factor loadings and reliabilities from this dissertation's pilot study are included in Appendix C.

Managerial Optimism is a measure of the extent to which the respondent is dispositionally optimistic, or optimistic in a generally stable sense not attached to specific events or prompts. In this dissertation it is being measured using items developed from the Revised Life Orientation Test or LOT-R (Scheier et al., 1994), a 7-point Likert scale that includes items such as "*Overall, I expect more good things to happen to me than bad*", and "*If something can go wrong for me, it will*" (a reverse-coded item). In the original study, Scheier et al. (1994) reported a reliability (calculated as the average inter-correlation among items) using Cronbach's alpha of .78, and more recently, Hmieleski and Baron (2009) reported a Cronbach's alpha of .80

in their sociocognitive study of managerial optimism and its relationship to new venture performance. The pilot study conducted for this dissertation produced a Cronbach's alpha of .81.

Fear of Failure (FOF) is a measure of the extent to which the respondent perceives negative consequences of failure, and includes concern for both internal and external sources of those consequences. In this dissertation, it is being measured using items developed by Conroy and Metzler (2003) in their analysis and comparison of the long and short forms of the Performance Failure Appraisal Inventory (PFAI) (Conroy, 2001). This study uses the short (5-item) form of the measure, a 7-point Likert scale which includes items such as "*When I am failing, it upsets my plan for the future*", and "*When I am failing, important others are disappointed*". Conroy (2003) reported a Cronbach's alpha for the PFAI scale of .82; the pilot study conducted for this dissertation produced a Cronbach's alpha of .81.

Entrepreneurial Orientation (EO) is a measure of the extent to which the respondent exhibits characteristics strongly associated with entrepreneurial behavior, including risk-taking, proactiveness, and innovativeness. In this dissertation, EO is being measured using the widely-used items developed by Covin and Slevin (1989). This scale is also often referred to as the Miller/Covin and Slevin scale and its use represents the most pervasive operationalization of the construct in the entrepreneurship literature (Covin & Lumpkin, 2011). Some of the items on the scale developed by Covin and Slevin (1989) were adapted from Miller and Friesen (1982) and Khandwalla (1976/77), but they are generally accorded credit for the EO scale in its current and most widely used form. Items in this scale measure tendencies toward (and away from) risk-taking, innovation, and competition (proactiveness), and include ratings of agreement from one related tendency to its opposite. For example, a rating of 1 corresponds to "*Changes in product or service lines have been mostly of a minor nature*" and a rating of 7 corresponds to "*Changes*

in product or service lines have usually been quite dramatic". Likewise a rating of 1 corresponds to *"My firm typically responds to actions which competitors initiate"* and a rating of 7 corresponds to *"My firm typically initiates actions which competitors then respond to."* Covin and Slevin (1989) reported a Cronbach's alpha of .87 in their initial study using the scale they developed; the pilot study conducted for this dissertation produced a Cronbach's alpha of .84 using the same scale.

Social Capital is a measure that evaluates the quantity and quality of the respondent's social relationships. In this dissertation, social capital is being measured using items developed for this dissertation to represent the themes explored by the majority of social capital research in the field of entrepreneurship, including issues of bonding and bridging (Pirolo & Presutti, 2010; Stam & Elfring, 2008; Yli-Renko, Autio, & Sapienza, 2001) and both structural and relational capital (Liao & Welsch, 2005). To that end, a 7-point Likert scale was developed for this study to address the issues of social networking and relational capital based largely on work done by De Carolis et al. (2009), which was in turn developed from Davidsson and Honig (2003). Items on the scale used in this dissertation include *"Friends and family members often provide support and advice for my business"*, *"I currently belong to a number of business and professional associations and groups"*, and *"My involvement in business and community organizations gives me access to new information."* De Carolis et al. (2009) reported a Cronbach's alpha of .76 for their relational capital items (a score including their social network items was not included). The pilot study conducted for this dissertation produced a Cronbach's alpha of .80 using an adapted scale addressing both structural and relational issues.

Interpretation as Gain(Opportunity)/Loss(Threat) is the extent to which the respondent (manager) identifies the presented scenarios as either representing Gain(Opportunity) or

Loss(Threat). This is measured using items adopted from Thomas and McDaniel (1990) which were in turn developed from Jackson and Dutton (1988). The items of interest to this study are the gain/positive and loss/negative items from the latter work, which were found to perform consistently in a scale, as supported by theory (Dutton & Jackson, 1987), and empirically. Thomas & McDaniel (1990) indicated that “the positive-negative and gain-loss labels are so highly correlated that future studies may wish to employ only one or the other as an issue descriptor.” The pilot study confirmed this, finding a Cronbach alpha of .96 for a positive/gain scale and of .94 for the loss/negative scale under the opportunity scenario, and of .96 for the positive/gain scale and .86 under the threat scenario.

4.5.3 Structured Scenarios

Structured case scenarios were used for measurement of opportunity and threat responses. Such scenarios are useful in framing specific strategic issues and providing context, and this capability is especially important to providing respondents with a common basis for understanding scale items indicating the interpretation of opportunity and threat conditions. A structured case scenario provides a context through a clear description of the terms by which response items are to be understood; in the case of this dissertation, one of the case scenarios represents an opportunity condition, and the other represents a threat condition. Such scenarios have been used for similar purposes precisely because they provide specific parameters of understanding to the respondent, and in doing so they are particularly well suited to studies of strategic issue interpretation (Jackson & Dutton, 1988; Kuvaas, 2002; Thomas & McDaniel, 1990). In accordance with this literature, opportunity and threat scenarios were separated for

emphasis on each issue in isolation. The full text of the scenarios can be found in Appendix B of this document.

The scenarios used in this dissertation were developed based largely upon the case scenarios in these earlier works related to information processing and opportunity/threat issues, but also with consideration of the chosen industry (retail). Key issues in the retail sector were interpreted through analysis of market reports in the retail sector, including both US and worldwide trends. Industry surveys from KPMG (2014), Reingold and Wabha (2014), and Mergent (2014) detailed the positive trends and competitive challenges of the retail industry. Based upon this information, scenarios were developed to emphasize positive trends in the retail sector (opportunities), and challenges facing the retail sector (threats). The retail sector is currently well-suited to the development of both scenarios as it is experiencing structural and technological change, as well as consumer behavior and consumer resource change. In spite of the broad challenges to the entire US economy and the recent poor performance of the retail industry, some firms have shown the ability to take advantage of consumer behavior and adapt to changes in consumer behavior. Salient issues include changing responses to discounting and price-sensitivity, online shopping, increasing household debt, growing income inequality, and a general rise in retail sales. It is in light of these developments that the scenarios used in this dissertation were developed.

The 15 response items that follow each case scenario are taken directly from Thomas and McDaniel (1990), for the purposes of measuring interpretation as positive/gain, negative/loss, as well as control, which are not the focus of this research, but nevertheless are of interest to opportunity/threat research literature. Examples of included response items include *“To what extent would your company label the situation as potential gain?”*, *“To what extent would your*

company feel the future will be better because of the situation?”, and “*To what extent would your company feel it has the capability to address the situation?*”. Answers were given on a 7-point Likert scale ranging from 1 = Strongly Disagree to 7 = Strongly Agree. For the purposes of the main phase survey, the original survey item order was altered to group positive/gain, negative/loss, and controllable/uncontrollable items together. In the pilot study, the original order in Thomas and McDaniel (1990) was used.

4.5.4 Control Variables

Control variables used for this study include *Gender, Formal Education Level, Work Experience, Firm Age, and Firm Size*. These controls have been chosen for reasons cited in the theoretical section of this dissertation, including previously discovered differences in goals linked to gender, life stage, and career stage, and in order to clarify the separation of some aspects of individual human capital from social capital. *Gender* was chosen as a control due to findings that female and male entrepreneurs tend to have different attitudes toward work-life balance, and different attitudes toward firm size thresholds (Cliff, 1998). For the purposes of this study, the two most common identified genders are used and coded as a binary dummy variable (sample sizes for other gender identifiers were not expected to be large enough to be statistically useful given the expected total sample size). *Work Experience* has been included as it addresses the accumulation of business-related information and mental models that are useful in navigating the entrepreneurial endeavor; it enhances entrepreneurial cognition, and thus new venture creation and expansion (Mitchell et al., 2002). *Work Experience* is measured as the total number of years for which a manager has work experience regardless of industry, in part chosen as a control due to research indicating changes in attitude toward growth related to life stage (Davis

& Shaver, 2012). *Firm Age* controls for the time since a firm's founding, and the variation in growth rate that is accorded to the initial task of startup and survival during the development of a firm's life cycle (Adizes, 1989). This is measured as the total number of years for which the firm has been in existence, and is of particular interest due to data indicating that many small firms, post-founding, enter periods of stability, often intentionally. Hence, recording this data is intended help identify a typical time frame within which a threshold mentality may take hold, if one does. Finally, *Firm Size (head count)* was included to capture the magnitude of growth already experienced by the firm. Originally, Firm Size (revenue) was also considered for inclusion, but due to the nature of the current economy, with several firms being very small in terms of head count and very high in revenue, that choice seemed problematic. *Firm size (head count)* was also deemed appropriate to this particular study in that it more accurately represents the complexity of communication and potential layers of management involved in decision-making than revenue does.

Other control variables were considered and even included in data collection during both the pilot study and main phase of the study. These included Age and Industry Experience. Both were ultimately removed due to unacceptably high correlation with *Work Experience*.

Table 4. Summary of Measures and Variable Operationalizations

Variables	Definition	Operationalization	Source of Adopted Scale
Small Firm Growth Intentions	The extent to which a firm intends to seek growth beyond its current size.	Four items, 7 point Likert scale	Davidsson (1991), Delmar and Wiklund (2008), Cliff (1998), Kolvereid (1992), and Wiklund and Shepherd (2003a)
Interpretation as Gain(Opportunity)/ Loss(Threat)	The extent to which market information is perceived as representing opportunity for the firm, or a threat to the firm.	10 items, 7 point Likert scale based on gain (opportunity)/loss(threat) structured scenarios	Jackson and Dutton (1988), Thomas and McDaniel (1990)
Entrepreneurial Orientation	The degree to which the manager is predisposed to an entrepreneurial outlook and entrepreneurial behaviors.	9 items, 7 point Likert scale	Miller (1983), Covin and Slevin (1989)
Managerial Optimism	The tendency to expect positive outcomes and dismiss negative possibilities.	Six items, 7 point Likert scale	Scheier et al. (1994)
Fear of Failure	The degree to which the concept of failure induces fear due to personal or social sources of pressure.	Five items, 7 point Likert scale	Conroy (2001), Conroy and Metzler (2003)
Social Capital	The content and structure of the manager's social network.	Six items, 7 point Likert scale	De Carolis et al. (2009)
Age	The chronological age of the manager.	Measured in years	Davis and Shaver (2012)

Gender	The identified gender of individual.	Measured as a binary dummy variable, 0=male, 1=female	Cliff (1998)
Formal education level	Conventional categories of educational achievement in the form of received degrees.	Measured as ordinal, including high school, associate, bachelor's master's, and doctoral level education.	
Work experience	Years of employment experience.	Measured in years	Mitchell et al. (2002)
Firm age	Chronological age of each firm in the sample.	Measured in years	Adizes (1989)
Firm size (head count)	Number of individuals employed by sample firms.	Absolute number of employed individuals	

4.6 Analytical Approach

Data were analyzed using a hierarchical ordinary least squares (OLS) moderated regression analysis, including a control model, following the guidelines set by Hair et al. (2006), testing for main effects and interaction effects. First, main effects were evaluated, and following analysis of main effects, the effects of market information interpretation was tested. The regression model and its predicted relationships are as specified according to the theory presented earlier in this work. Concern for specification error is also addressed in the theory section of this research: there is by design an omission of variables representing constructs that are generally not the focus of this study, but otherwise, the variables selected attempt to capture the totality of distinct issues implied by this work's theoretical background.

Five regression analyses were conducted in order to fully evaluate the research model. In the first regression, the dependent variable was Growth Intention, and the hypothesized main socio-cognitive effects on that dependent variable were tested in four models. These main effects included Managerial Optimism, Fear of Failure, and Social Capital. In model one of the first analysis, the control variables were entered, and in the subsequent models of the first analysis, the three main predictors were entered together after ensuring there was no issue of multicollinearity.

The second and third regression analysis tested Managerial Interpretation as the dependent variable, with three predictors (Managerial Optimism, Fear of Failure, and Social Capital). This analysis was run first (Regression 2) for Gain(Opportunity), and then (Regression 3) for Loss(Threat). The first model of the second and third analysis included the control variables, and the subsequent models of the second and third analysis included the controls and predictors, including Managerial Optimism, Fear of Failure, and Social Capital.

In the fourth and fifth regression analyses, the dependent variable was Growth Intention, and the predictors were Gain(Opportunity) and Loss(Threat). Additionally, Entrepreneurial Orientation was tested as a moderator. Consistent with Aiken and West (1991), Managerial Interpretation and Entrepreneurial Orientation were centered before creating the interaction term used to test moderation. The first model of the fourth and fifth analysis included the control variables, the second model included direct effects, and the third model included the interaction term.

Assumptions of OLS multiple linear regression include concerns for normality, linearity, homoscedasticity, and independence of the error terms. Linearity expresses the extent to which there is a constant rate of unit change in the dependent variable that corresponds to a similarly constant rate of unit change in an independent variable. Homoscedasticity is a measure of the extent to which error term variance remains constant for all values of the independent variable. Checking independence of error terms removes another possible source of bias in OLS results, assuring that the error terms of explanatory variables are not correlated. Assumptions for each of the variables were interpreted through the use of residual plots (for linearity and homoscedasticity), normal probability plots (for normality) and Levene's test for homogeneity of variance (for homoscedasticity), and corrective procedures (e.g. transformations) followed where appropriate. For main phase data, only a Firm Size transformation was deemed necessary.

Concern for multicollinearity was addressed through an evaluation of the correlations between independent variables, and through tolerance values, where higher values were more desirable. The model estimation in the study was confirmatory rather than sequential search or by means of stepwise estimation, due to the nature of the study, and the primary interest of testing the hypothetical relationships developed from existing theory.

4.7 Methodological Concerns

4.7.1 Common Method Variance

This study, in making use of a single data collection method (self-reported survey) is subject to the concern of common method variance (CMV). The primary concern of common method variance is that some variance that derives from the data collection method or source itself (in this case, self-reported survey) creates the appearance of a relationship between two or more of the variables in the study (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

Common method variance (CMV) arises from common raters, common contexts (item and measurement) or common item characteristics. A notable concern is the case of individuals providing data for both independent and dependent measures (Podsakoff et al., 2003). CMV is addressed in two ways. Firstly, from a theoretical standpoint, the development of measurement items is conducted in order to provide coverage of distinct and non-overlapping issues. Secondly, analysis of measurement item loadings and the possibility of collinearity will be conducted. Other potential CMV remedies are not practical in this research.

The use of different sources to provide predictor and criterion variables would belie the intention of this research to understand processes that are processed through single individuals, combining traits of those individuals with external information that is processed within those individuals to produce outcomes that are manifested by the same individuals. Temporal and proximal separation present issues as well. Temporal separation of measurement would capture individuals at different stages of maturation or with different environmental influences such that the interpretations of such information could no longer be reasonably said to indicate growth intention measured at a different time. Proximal separation, like temporal separation, also creates a significant concern for response rate, which in turn increases the likelihood of non-

response bias. Podsakoff et al. (2003) also note the disadvantages of memory inaccessibility and contaminating factors due to lag, as well as the aforementioned concern for practicality.

The assurance of anonymity reduces concerns of social desirability and other sources of CMV, and also alleviates privacy concerns which represent a significant ethical and in some cases legal concern. Anonymity also precludes the aforementioned separation remedies to CMV (Podsakoff et al., 2003), which in the case of this study (given the overriding concern for identity protection of respondents and data security) makes the desired approach manifest. The primary remedies for remaining CMV concerns, then, were statistical, including initial use of Harman's single-factor test, and the single-common-method-factor approach used by Carlson and Kacmar (2000), MacKenzie, Podsakoff, and Fetter (1991), Mackenzie, Podsakoff, and Fetter (1993), and Podsakoff, MacKenzie, Moorman, and Fetter (1990), as recommended by Podsakoff et al. (2003) in their evaluation of alternative recommendations for CMV management. Harman's single-factor test indicated no issues of CMV, with the highest amount of variance explained by a single factor in main phase data at 19.08%. Likewise, the single-method-factor approach, performed through a confirmatory factor analysis performed in AMOS with the addition of a single additional latent factor common to all items, did not reveal issues of CMV, indicating common variance of 24%.

Although other partial correlation procedures exist for evaluating CMV, there is not a single ideal alternative method for addressing the issue, and many of the available alternatives are impractical for the purposes of this study. Given that CMV is generally considered an item-level rather than a construct-level concern, it is believed that factor analysis and the methods described above sufficiently serve the purpose of evaluating the issue. Finally, in the case of initial data collection efforts, response rates were an issue, but the with the final approach

chosen, it was fortunately not. During initial data collection efforts, however, the response rate was unacceptably low to meet the sample size desired, and thus created the impression of a non-response bias, so methods recommended by Dillman et al. (2009) including follow-up mailings with greater degrees of personalization were used for those samples in an attempt to improve response rates and thus the representativeness of the sample.

4.8 Pilot Study

Prior to the main phase of the study, a pilot study was conducted to evaluate the performance of measurement items, especially those newly developed for this study. Subjects of the pilot study were adult (at least 18 years of age) university students at the University of Texas-Pan American (now the University of Texas Rio Grande Valley). These subjects were administered the same survey items that were used in the main phase of the study, with the exclusion of some demographic items that were deemed inapplicable. Analysis of their responses was not concerned with the performance of predicted relationships represented by hypotheses in this research. Rather, their data was intended for analyzing whether or not items load on the variables for which they were designed, and whether there were other problems that required attention prior to the main study, such as undesirable levels of correlation between independent variables. Students in the pilot study were not financially compensated for their participation, but were given the option of obtaining course credit (extra credit) for their participation as an alternative to another classroom assignment of equal course credit value. Data for the pilot study were obtained using the same Qualtrics interface that was used in the main phase of the study.

An application for access to Qualtrics was sent and approved, and the survey was entered into the university's Qualtrics system in two forms: one for the pilot phase, and one for later use in the main phase of the study. The pilot-phase study did not assume or require that respondents were business owners, and as such, demographic items related to business ownership were excluded from that version of the questionnaire. All other items remained identical to their main-phase equivalents. Approval for the pilot study was obtained through submission of appropriate forms to the university's Institutional Review Board (IRB), as the study included the use of human subjects. These forms addressed the purpose of the research (focusing on Entrepreneurial Social Capital and Cognition as they relate to Small Firm Growth Intention), the intended subjects (graduate students at the university of no less than 18 years of age), recruitment methods (availability given to online students through their online class interface), the voluntary nature of the study and avoidance of the perception of coercion through an alternative credit mechanism, and the precise language to be used in communicating with pilot-phase respondents during the study (including consent form language and consent verification, which was achieved via a survey-item check that exited the survey when consent was not given). The submission to IRB also detailed the mechanism by which course credit would be assigned (through a separate survey made available upon completion of the pilot study, which reported participant names to their respective professors for credit, but which did not link those identities to responses). The final approval for the pilot study from IRB is included in the appendix section of this document.

The pilot survey was made available to a total of 103 students enrolled in three online Master's level business courses, and was open for responses for two weeks, although some students were made aware of the survey for a shorter period during the allotted open response time. Because the respondents for the pilot study were not selected as business owner/managers,

they were instructed to respond based upon the assumption that they were managers of retail businesses. The survey items in the Appendix, however, reflect the phrasing that was used in the main phase of the study. Fifty-two students provided usable responses on construct items. A smaller number (24 respondents) provided age data. The average age reported by those respondents was 29.25, with a standard deviation of 7.86 years, and the range of respondents was from 21 to 45 years of age. Fifty-two respondents provided data on gender; 24 (46.2%) of respondents were male, and 28 (53.8%) of respondents were female. 52 respondents also reported their current level of education, with 1 (1.9%) respondent indicating an Associate-level degree, 22 (42.3%) reporting a Bachelor's-level degree, and 29 (55.8%) reporting a Master's-level degree.

The factor analysis method used for the Pilot Study was exploratory, using principal components extraction based upon Eigenvalues greater than 1, analyzed according to their correlation matrices, with a maximum of 25 iterations for convergence, and Varimax rotation. Missing cases were excluded listwise. A separate factor analysis was performed for each of the variables, each using all of the items intended to measure that variable. Results of the study (see pilot study factor loadings and reliabilities in Appendix C) indicated that most of the items loaded well on their intended measures, and that reliabilities for most scales were acceptable. Hair et al. (2006) describe 0.70 as acceptable, and the lowest result in the pilot study was 0.80. Notable issues in the factor analysis include reverse-coded items in the Managerial Optimism scale loading on their own factor, and Social Capital loading on two factors, one for personal/familial relationships and the other for institutional and professional relationships. Results of the pilot study also indicate both distinct and inconsistent behavior of control-related interpretation items, even within positively-valenced items relative to each other, or negatively-

valenced items relative to each other. This was not a concern for the main phase of the study, as understanding the control issue as a distinct entity apart from opportunity identification is not a focus of this dissertation, but it is a result potentially worth examining at some point. At this time, there does not appear to be a clear reason for the inconsistent performance of the control-related issues, so further research into understanding why such items behave the way they do is warranted, as is research into the extent to which they relate to the larger issue of opportunity identification. This is, however an issue that is not central to the dissertation.

As previously mentioned, in the pilot phase, the response items accompanying the opportunity and threat case scenarios followed Thomas and McDaniel (1990), but given the performance of the items, for the main phase of the study the items were re-ordered to reflect a grouping of items as positive/gain, negative/loss, and controllable/uncontrollable. This is a reflection of both the lack of literature justifying a strong distinction between positive interpretations and interpretations of gain (likewise for negative/loss), and a reflection of the factor loadings and reliability scores in the pilot study, which indicate the strong alignment of these issues with each other under both opportunity and threat conditions. It is also worth noting that a reverse-coding of negative/loss items and subsequent grouping of those items with positive/gain items resulted in diminished reliability and more complicated factor loadings, indicating that negative/loss items behave as distinct factors and not merely as inverse values of their positive/gain equivalents.

4.9 Chapter Summary

This chapter has described the various methods used to evaluate the research hypotheses that have been developed. Survey methodology and multiple sampling approaches were used,

the questionnaire was developed using previous research as a guide to the greatest extent possible. Additionally, the questionnaire has been evaluated through a pilot study.

Chapter 5 will use the data collected for the main phase of the study to present an examination of correlations, the results of hierarchical regression analyses, a summary of supported hypotheses, presentation of updated research models, and supplementary analysis of mediation.

CHAPTER V

RESULTS

This chapter will present the results of data collection and analysis as proposed in Chapter 4. Section 5.1 will describe the characteristics of the sample used in the data analysis, including details relevant to the analyses that follow. Section 5.2 will present the results of Socio-cognitive predictors' effects on Small Firm Growth Intentions, in an analysis of the direct effects of those predictors on the ultimate outcome variable in the research model (Figure 3, page 81). Section 5.3 will present the results of Socio-cognitive predictors' effects on Market Information Interpretation, focusing on the first portion of the proposed intermediate processes included in the research model. Section 5.4 will present the results of Market Information Interpretations' effects on Small Firm Growth Intentions, focusing on the second portion of the proposed intermediate processes included in the research model. Section 5.5 will present the results of tests analyzing the role of Entrepreneurial Orientation as a moderator of Market Information Interpretations' effects on Small Firm Growth Intentions. Section 5.6 will present a summary of hypothesis tests is also included in this chapter, and provide concluding remarks on the data analysis. Finally, Section 5.7 will present a supplementary analysis of the data using a bootstrapping method that tests the entire model, including tests for mediation and moderation.

5.1 Descriptive Statistics

Table 5.1a presents means, standard deviations, and correlation coefficients (marked when significant), for all of the variables used in hypothesis tests for this study, and Tables 5.1b-5.1i present factor loadings, reliabilities, and correlation coefficients for individual items.

Table 5: Respondent Demographics

Average Age	Male	Female	Owner/Manager	Manager	Family Business
35.94	34.6%	65.4%	54.7%	45.3%	49.7%
Education Level:	High School	Associate's Degree	Bachelor's Degree	Master's Degree	
	37.7%	24.5%	29.6%	8.2%	

Respondents were more female than male, generally possessed some post-secondary education, had slightly more than 16 years work experience, and worked in firms that were slightly more than 21 years past their founding date. There was, however, considerable variation in the sample in terms of both work experience and firm age, indicating the inclusion of both experienced and novice owner/managers, and the inclusion of managers from both young and mature firms. Firm size as measured by employees is presented as it was reported on an open-ended survey item, but two things are worth noting with respect to that measure. Firstly, participants in the survey were only included if they indicated through a screener question that their firms had 500 or fewer employees (falling into one of several size categories of less than 500, but not into one of 500 or more). According to the screener question at the beginning of the survey, all respondents met the criteria for inclusion in the sample. In some cases, however, reported head counts at the end of the survey (typed as a number) did not correspond to values indicated at the beginning of the survey in the screener question. This would seem to indicate that some of the reported numbers may be inflated or otherwise inaccurate, perhaps due to

fatigue at reaching the end of the survey. A second issue worth noting is that head count (firm size) values represented in the correlation matrix table (Table 5.1a) are given as-reported, while head count (firm size) values included in the data analyses on Tables 5.2a through Table 5.4b underwent a logarithmic (base 10) transformation, followed by the removal of outliers. This variable transformation is indicated on regression analysis tables with a dagger (†) symbol.

Several significant correlations were found; particularly significant ($p < .01$) examples are discussed here in descending order of magnitude. There was a positive correlation between Growth Intention and perceived Gain(Opportunity) ($r = 0.46, p < .01$), which is addressed by Hypothesis 7a). There was a negative correlation between Managerial Optimism and Fear of Failure ($r = -0.41, p < .01$), a relationship indicating the intuitive but not mutually exclusive nature of fear and optimism, in which both may exist simultaneously within an individual, yet more of one tends to indicate less of the other. There was a positive correlation between employees and Firm Age ($r = 0.41, p < .01$), which is expected inasmuch as firms require time to accumulate resources with which they may hire employees. A positive correlation was found between Entrepreneurial Orientation and Gain(Opportunity) ($r = 0.33, p < .01$), a relationship addressed later by the results for Hypotheses 8a and 8b. A positive correlation was found between Fear of Failure and Social Capital ($r = 0.28, p < .01$), which was not predicted by this model, but is not surprising given the social nature of some of the items comprising the measure of Fear of Failure. A positive correlation was found between Growth Intention and Entrepreneurial Orientation ($r = 0.27, p < .01$), a relationship also addressed later by the results for Hypotheses 8a and 8b. A negative correlation was found between Fear of Failure and Years of Work ($r = -0.23, p < .01$), a finding not predicted by this study, but perhaps an indicator of the emotional reassurance gained from the experience of having more employment. A negative

correlation was found between Loss(Threat) and Gain(Opportunity) ($r = -0.23$, $p < .01$), a predictable result as this study posits them as forces in opposition, albeit non-exclusive opposition. A positive correlation was found between Entrepreneurial Orientation and Managerial Optimism ($r = 0.22$, $p < .01$), again not a surprising finding in that the EO characteristics of innovativeness, proactiveness, and risk-taking (especially risk-taking) would seem to be advanced by an optimistic view.. Finally, a negative correlation was found between Loss(Threat) and Managerial Optimism ($r = -0.21$, $p < .01$), a finding addressed by Hypothesis 1. It is also worth noting that multicollinearity diagnostics did not indicate any concerns with the variables included in the analyses presented here (there were no tolerance values less than 0.20 or VIF values of 5 or greater).

Table 5.1a: Means, Standard Deviations, and Correlations – Main Study Variables

		Mean	Standard Deviation	1	2	3	4	5	6	7	8	9	10	11
1	Gender	1.65	.47											
2	Education	2.08	1.00	-0.10										
3	Years of Work	16.21	11.13	-0.09	0.06									
4	Firm Age	21.40	24.89	-0.16*	0.08	0.02								
5	Social Capital	4.41	1.34	0.06	0.19*	-0.07	0.03							
6	Managerial Optimism	4.85	1.05	-0.08	0.06	0.20*	0.05	0.12						
7	Fear of Failure	3.99	1.35	0.06	0.07	-0.23**	0.02	0.28**	-0.41**					
8	Gain (Opportunity)	5.21	1.18	-0.03	0.04	0.08	-0.11	0.18*	0.23**	0.03				
9	Loss (Threat)	4.09	1.36	-0.05	0.08	-0.15	0.22**	0.19*	-0.21**	0.15	-0.23**			
10	Entrepreneurial Orientation	4.36	0.98	-0.12	0.13	-0.10	0.02	0.21**	0.22**	-0.03	0.33**	0.03		
11	Growth Intention	5.87	1.04	0.02	-0.05	-0.03	-0.10	0.28**	0.17*	0.06	0.46**	-0.02	0.27**	
12	Employees	2057.74	17731.67	0.08	-0.08	-0.08	0.41**	-0.08	0.12	-0.10	0.11	0.00	0.00	-0.04

N = 159, * $p < .05$, ** $p < .01$

Table 5.1b Factor Loadings and Reliabilities – Main Study Items

Variable	Items	Factor 1	Factor 2	Cronbach's Alpha
Social Capital	SOC1		0.77	0.79
	SOC2		0.90	
	SOC3	0.71		
	SOC4	0.71		
	SOC5	0.88		
	SOC6	0.84		
Fear of Failure	FOF1	0.76		0.86
	FOF2	0.77		
	FOF3	0.82		
	FOF4	0.81		
	FOF5	0.86		
Managerial Optimism	MOP1		0.85	0.80
	MOP2R	0.83		
	MOP3		0.82	
	MOP4R	0.87		
	MOP5R	0.82		
	MOP6		0.65	
Entrepreneurial Orientation	EO1		0.43	0.78
	EO2		0.61	
	EO3	0.74		
	EO4		0.68	
	EO5		0.80	
	EO6	0.79		
	EO7		0.52	
	EO8	0.57		
	EO9	0.66		
Growth Intention	GroInt1	0.82		0.88
	GroInt2	0.85		
	GroInt3	0.87		
	GroInt4	0.90		
Gain/Positive Opportunity Scenario	ScOppGain1	0.80		0.92
	ScOppGain2	0.87		
	ScOppGain3	0.90		
	ScOppPos1	0.85		
	ScOppPos2	0.83		
	ScOppPos3	0.85		
Loss/Negative Threat Scenario	ScThrLoss1	0.81		0.87
	ScThrLoss2	0.82		
	ScThrNeg1	0.88		
	ScThrNeg2	0.87		

Table 5.1c – Correlations – Main Study Social Capital Items

Social Capital	Mean	Std. Dev.	SOC1	SOC2	SOC3	SOC4	SOC5
	SOC1	5.06	1.54				
SOC2	3.76	1.67	0.49**				
SOC3	4.04	1.73	0.38**	0.31**			
SOC4	3.67	1.88	0.26**	0.23**	0.61**		
SOC5	4.95	1.50	0.32**	0.15	0.49**	0.49**	
SOC6	4.97	1.53	0.37**	0.15	0.48**	0.39**	0.74**

Table 5.1d – Correlations – Main Study Fear of Failure Items

FOF	Mean	Std. Dev.	FOF1	FOF2	FOF3	FOF4
FOF1	4.03	1.68				
FOF2	4.19	1.62	0.59**			
FOF3	3.58	1.62	0.49**	0.52**		
FOF4	4.01	1.59	0.39**	0.52**	0.63**	
FOF5	4.16	1.85	0.61**	0.49**	0.64**	0.70**

Table 5.1e – Correlations – Main Study Managerial Optimism Items

Managerial Optimism	Mean	Std. Dev.	MOP1	MOP2R	MOP3	MOP4R	MOP5R
	MOP1	5.03	1.30				
MOP2R	4.35	1.57	0.16*				
MOP3	5.34	1.28	0.54**	0.33**			
MOP4R	4.55	1.63	0.16*	0.61**	0.32**		
MOP5R	4.73	1.69	0.24**	0.58**	0.36**	0.64**	
MOP6	5.10	1.49	0.36**	0.34**	0.50**	0.41**	0.32**

Table 5.1f – Correlations – Main Study Entrepreneurial Orientation Items

EO	Mean	Std. Dev.	EO1	EO2	EO3	EO4	EO5	EO6	EO7	EO8
EO1	3.77	1.85								
EO2	4.02	1.65	0.39**							
EO3	4.39	1.58	0.33**	0.31**						
EO4	5.08	1.61	0.17*	0.32**	0.16					
EO5	4.25	1.59	0.18*	0.32**	0.27**	0.39**				
EO6	4.40	1.60	0.11	0.23**	0.42**	0.25**	-0.01			
EO7	4.51	1.53	0.27**	0.35**	0.35**	0.38**	0.26**	0.25**		
EO8	4.30	1.59	0.20*	0.29**	0.42**	0.31**	0.25**	0.33**	0.29**	
EO9	4.53	1.50	0.31**	0.31**	0.50**	0.32**	0.19*	0.33**	0.42**	0.33**

Table 5.1g – Correlations – Main Study Growth Intention Items

Growth Intention	Mean	Std. Dev.	GroInt1	GroInt2	GroInt3
	GroInt1	5.88	1.35		
GroInt2	5.69	1.29	0.62**		
GroInt3	6.04	1.07	0.59**	0.64**	
GroInt4	5.89	1.14	0.65**	0.67**	0.77**

Table 5.1h – Correlations – Main Study Gain/Positive Items for Opportunity Scenario

Gain/Positive Opportunity Scenario	Mean	Std. Dev.	ScOppGain1	ScOppGain2	ScOppGain3	ScOppPos1	ScOppPos2
	ScOppGain1	5.21	1.37				
ScOppGain2	5.38	1.32	0.72**				
ScOppGain3	5.21	1.46	0.72**	0.80**			
ScOppPos1	5.09	1.36	0.57**	0.63**	0.69**		
ScOppPos2	5.17	1.38	0.51**	0.63**	0.67**	0.76**	
ScOppPos3	5.23	1.40	0.61**	0.66**	0.70**	0.72**	0.66**

Table 5.1i – Correlations – Main Study Loss/Negative Items for Threat Scenario

Loss/Negative Threat Scenario	Mean	Std. Dev.	ScThrLoss1	ScThrLoss2	ScThrNeg1
	ScThrLoss1	4.24	1.56		
ScThrLoss2	3.88	1.62	0.60**		
ScThrNeg1	4.13	1.61	0.59**	0.59**	
ScThrNeg2	4.09	1.62	0.57**	0.61**	0.76**

5.2 Socio-cognitive Predictors of Small Firm Growth Intentions

The following tables (5.2a and 5.2b) present the results of hierarchical regression analysis of the direct effects of the main predictor variables in this research (Managerial Optimism, Fear of Failure, and Social Capital) on the ultimate outcome variable of this research (Small Firm Growth Intention). These relationships are the focus of Hypotheses 1, 2, and 3. This particular test was run twice, with Table 5.2a representing the results produced by including Managerial Optimism scores as-reported, and Table 5.2b representing the results produced by squaring Managerial Optimism to detect the possibility of a curvilinear relationship (see Appendix E for more analysis of this issue). This type of relationship was previously reported by Hmieleski and Baron (2009) with regard to performance, but it is important to note that in this case we are testing a relationship with intention, not performance. In this study's sample, the strength of the relationship was only very slightly increased by squaring the Managerial Optimism scores, and further regression analysis produced an insignificant delta-r when comparing unsquared Managerial Optimism to squared Managerial Optimism. Factor analysis (Table 5.1b) of the main sample data, as with the Pilot Study data, revealed two Social Capital factors: one related to friends and family, and the other to businesses, professional organizations, and community. The analyses presented here and in all further regressions make use of the second, four-item factor (items 3-6 of Social Capital items listed in the questionnaire in Appendix B).

Model 2 indicates that Managerial Optimism is supported as a predictor of Small Firm Growth Intention, so Hypothesis 1 is supported ($r = 0.18, p < .05$). The effect of using the squared variable was only slightly greater in magnitude ($r = 0.19, p < .05$). Model 3 indicates that Fear of Failure is not supported as a predictor of Small Firm Growth Intention, so Hypothesis 2 is not supported. Model 4 indicates that Social Capital is supported as a predictor

Table 5.2a: Socio-Cognitive Predictors of Small Firm Growth Intention

	DV = Growth Intention			
	Model 1	Model 2	Model 3	Model 4
Gender	0.01 (0.18)	0.02 (0.18)	0.01 (0.18)	-0.02 (0.18)
Formal Education Level	-0.03 (0.09)	-0.05 (0.09)	-0.04 (0.09)	-0.08 (0.08)
Work Experience	-0.04 (0.01)	-0.07 (0.01)	-0.03 (0.01)	-0.04 (0.01)
Firm Age	-0.05 (0.00)	-0.05 (0.00)	-0.05 (0.00)	-0.05 (0.00)
Firm Size†	0.02 (0.11)	0.02 (0.11)	0.01 (0.11)	-0.06 (0.11)
Managerial Optimism		0.18* (0.08)		
Fear of Failure			0.06 (0.07)	
Social Capital				0.29** (0.06)
Constant	5.99 (0.44)	5.20 (0.58)	5.82 (0.49)	5.34 (0.46)
R ²	0.01	0.04	0.01	0.08
Adjusted R ²	-0.00	-0.05	-0.03	0.05
ΔR ²	0.01	0.03*	0.00	0.08**
F-Value	0.17	4.38	0.55	12.42

N = 159, * *p* < 0.05, ** *p* < 0.01, two-tailed test, standard error in parentheses, † (head count, Log10 transformed)

Table 5.2b: A Curvilinear Relationship between Managerial Optimism and Small Firm Growth Intentions

	DV = Growth Intention			
	Model 1	Model 2	Model 3	Model 4
Gender	0.01 (0.18)	0.02 (0.18)	0.01 (0.18)	-0.02 (0.18)
Formal Education Level	-0.03 (0.09)	-0.04 (0.09)	-0.04 (0.09)	-0.08 (0.08)
Work Experience	-0.04 (0.01)	-0.07 (0.01)	-0.03 (0.01)	-0.04 (0.01)
Firm Age	-0.05 (0.00)	-0.05 (0.00)	-0.05 (0.00)	-0.05 (0.00)
Firm Size†	0.02 (0.11)	0.02 (0.11)	0.01 (0.11)	-0.06 (0.11)
Managerial Optimism (Squared)		0.19* (0.08)		
Fear of Failure			0.06 (0.07)	
Social Capital				0.29** (0.06)
Constant	5.99 (0.44)	5.57 (0.47)	5.82 (0.49)	5.34 (0.46)
R ²	0.01	0.04	0.01	0.08
Adjusted R ²	-0.00	-0.00	-0.03	0.05
ΔR ²	0.01	0.03*	0.00	0.08**
F-Value	0.17	4.99	0.55	12.42

N = 159, * *p* < 0.05, ** *p* < 0.01, two-tailed test, standard error in parentheses, † (head count, Log10 transformed)

of Small Firm Growth Intention, so Hypothesis 3 is supported ($r = 0.29, p < .01$). These results, indicating support for a direct positive relationship between Managerial Optimism and Growth Intention, and between Social Capital and Growth Intention, but not between Fear of Failure and Growth Intention, demonstrate that at least for the Small Firm Owner/Managers in this study, Fear of Failure was not a determinative factor in the formulation of expansion plans. Also of interest is that while Managerial Optimism (both unsquared and squared) was a significant predictor of Growth Intention, the effect of Social Capital was nearly double the magnitude of any other socio-cognitive predictor, providing strong support for studies that view the decision-making process of the Owner/Manager in the context of relationships.

5.3 Socio-Cognitive Predictors of Market Information Interpretations

The following tables (5.3a and 5.3b) present the results of hierarchical regression analysis of the direct effects of the main predictor variables in this research (Managerial Optimism, Fear of Failure, and Social Capital) on the variable representing the interpretation process under the Gain(Opportunity) scenario. This analysis is intended to highlight the role that managerial interpretation plays in the process of decision making. These relationships are the focus of Hypotheses 4a, 5a, and 6a. Like the previous regressions, these tests were run twice, with results for Managerial Optimism scores as-reported in Table 5.3a, and Managerial Optimism squared in Table 5.3b, in order to detect the possibility of a curvilinear relationship.

In Model 2, Managerial Optimism was found to be a significant ($r = 0.21, p < .01$) predictor of managerial interpretation of Gain(Opportunity), with the effect of the squared variable being slightly higher ($r = 0.23, p < .01$) than for the unaltered Managerial Optimism scores. This result supports Hypothesis 4a, indicating a positive relationship between

Table 5.3a: Socio-Cognitive Predictors of Market Information Interpretation as Gain(Opportunity)

	DV = Gain(Opportunity)			
	Model 1	Model 2	Model 3	Model 4
Gender	-0.08 (0.20)	-0.07 (0.20)	-0.09 (0.21)	-0.11 (0.20)
Formal Education Level	0.06 (0.10)	0.05 (0.10)	0.06 (0.10)	0.03 (0.10)
Work Experience	0.09 (0.01)	0.05 (0.01)	0.11 (0.01)	0.09 (0.009)
Firm Age	-0.20* (0.01)	-0.20* (0.01)	-0.20* (0.01)	-0.20* (0.01)
Firm Size†	0.20 (0.13)	0.02 (0.12)	0.01 (0.13)	-0.03 (0.13)
Managerial Optimism		0.21** (0.09)		
Fear of Failure			0.08 (0.07)	
Social Capital				0.21* (0.07)
Constant	5.40 (0.50)	4.30 (0.65)	5.17 (0.56)	4.87 (0.53)
R ²	0.05	0.09	0.05	0.09
Adjusted R ²	0.01	0.05	0.01	0.05
ΔR ²	0.05	0.04**	0.01	0.04*
F-Value	1.45	6.80	0.85	6.17

N = 159, * *p* < 0.05, ** *p* < 0.01, two-tailed test, standard error in parentheses, † (head count, Log10 transformed)

Table 5.3b: A Curvilinear Relationship between Managerial Optimism and Market Information Interpretation as Gain(Opportunity)

	DV = Gain(Opportunity)			
	Model 1	Model 2	Model 3	Model 4
Gender	-0.08 (0.20)	-0.07 (0.20)	-0.09 (0.21)	-0.11 (0.20)
Formal Education Level	0.06 (0.10)	0.05 (0.10)	0.06 (0.10)	0.03 (0.10)
Work Experience	0.09 (0.01)	0.05 (0.01)	0.11 (0.01)	0.09 (0.01)
Firm Age	-0.20* (0.01)	-0.20* (0.01)	-0.20* (0.01)	-0.20* (0.01)
Firm Size†	0.02 (0.13)	0.02 (0.12)	0.01 (0.13)	-0.03 (0.13)
Managerial Optimism (Squared)		0.23** (0.01)		
Fear of Failure			0.08 (0.07)	
Social Capital				0.21* (0.07)
Constant	5.40 (0.50)	4.81 (0.53)	5.17 (0.56)	4.87 (0.53)
R ²	0.05	0.10	0.05	0.09
Adjusted R ²	0.01	0.06	0.01	0.05
ΔR ²	0.05	0.05**	0.01	0.04*
F-Value	1.45	7.92	0.85	6.17

*N = 159, *p < 0.05, **p < 0.01, two-tailed test, standard error in parentheses, † (head count, Log10 transformed)*

Managerial Optimism and Gain(Opportunity). Model 3 fails to indicate support for Hypothesis 5a, which would have supported a relationship between Fear of Failure and Gain(Opportunity). In Model 4, Social Capital was found to be a significant ($r = .21, p < .01$) predictor of managerial interpretation of Gain(Opportunity). This result supports Hypothesis 6a. It is also worth noting that in this analysis, a control variable, Firm Age, was also a significant negative predictor of Gain(Opportunity) ($r = -0.20, p < .05$), with an effect size nearly as large as that of Managerial Optimism, and of Social Capital.

The following tables (5.3c and 5.3d) present the results of hierarchical regression analysis of the direct effects of the main predictor variables in this research (Managerial Optimism, Fear of Failure, and Social Capital) on the variable representing the interpretation process under the Loss(Threat) scenario. These relationships are the focus of Hypotheses 4b, 5b, and 6b. Like the previous regressions, these tests were run twice, with results for Managerial Optimism scores in Table 5.3c as-reported, and Managerial Optimism squared in Table 5.3d, in order to detect the possibility of a curvilinear relationship. Such evidence was not found with Growth Intention as an outcome variable (see results tables in this chapter and Appendix F).

The results in Table 5.3c, with managerial interpretation of Loss(Threat) as a dependent variable, were somewhat different than those of Table 5.3a, where Gain(Opportunity) was the dependent variable. In Model 2 of Table 5.3c, Managerial Optimism is found to have a negative relationship ($r = -0.18, p < .05$) with managerial interpretation of Loss(Threat), an effect size slightly lower in magnitude and opposite in direction to that of the relationship between Managerial Optimism and Gain(Opportunity) ($r = 0.21, p < .05$). This indicates support for Hypothesis 4b. In Model 3, Fear of Failure again (as with Gain(Opportunity)) fails to find support for a relationship between itself and Loss(Threat). Thus, Hypothesis 5b is not

Table 5.3c: Socio-Cognitive Predictors of Market Information Interpretation as Loss(Threat)

	DV = Loss(Threat)			
	Model 1	Model 2	Model 3	Model 4
Gender	0.02 (0.23)	0.01 (0.23)	0.01 (0.23)	0.01 (0.23)
Formal Education Level	0.04 (0.11)	0.05 (0.11)	0.03 (0.11)	0.02 (0.11)
Work Experience	-0.10 (0.01)	-0.06 (0.01)	-0.09 (0.01)	-0.10 (0.01)
Firm Age	0.18* (0.01)	0.18* (0.01)	0.18* (0.01)	0.18 (0.01)
Firm Size†	0.17 (0.14)	0.17 (0.14)	0.16 (0.14)	0.14 (0.14)
Managerial Optimism		-0.18* (0.10)		
Fear of Failure			0.06 (0.08)	
Social Capital				0.11 (0.08)
Constant	3.52 (0.56)	4.62 (0.73)	3.30 (0.62)	3.20 (0.61)
R ²	0.14	0.14	0.11	0.12
Adjusted R ²	0.10	0.10	0.07	0.08
ΔR ²	0.03*	0.03*	0.00	0.01
F-Value	3.55	5.40	0.60	1.77

N = 159, **p* < 0.05, ***p* < 0.01, two-tailed test, standard error in parentheses, † (head count, Log10 transformed)

Table 5.3d: A Curvilinear Relationship between Managerial Optimism and Market Information Interpretation as Loss(Threat)

	DV = Loss(Threat)			
	Model 1	Model 2	Model 3	Model 4
Gender	0.02 (0.23)	0.01 (0.23)	0.01 (0.23)	0.01 (0.23)
Formal Education Level	0.04 (0.11)	0.04 (0.11)	0.03 (0.11)	0.02 (0.11)
Work Experience	-0.10 (0.01)	-0.06 (0.01)	-0.09 (0.01)	-0.10 (0.01)
Firm Age	0.18* (0.01)	0.19* (0.01)	0.18* (0.01)	0.18 (0.01)
Firm Size†	0.17 (0.14)	0.17 (0.14)	0.16 (0.14)	0.14 (0.14)
Managerial Optimism (Squared)		-0.18* (0.01)		
Fear of Failure			0.06 (0.08)	
Social Capital				0.11 (0.08)
Constant	3.52 (0.56)	4.06 (0.60)	3.30 (0.62)	3.20 (0.61)
R ²	0.14	0.14	0.11	0.12
Adjusted R ²	0.10	0.10	0.07	0.08
ΔR ²	0.03*	0.03*	0.00	0.01
F-Value	3.55	5.26	0.60	1.77

N = 159, * *p* < 0.05, ** *p* < 0.01, two-tailed test, standard error in parentheses, † (head count, Log10 transformed)

supported. In Model 4, contrary to the finding for Gain(Opportunity), support is not found for a relationship between Social Capital and managerial interpretation of Loss(Threat). Thus, Hypothesis 6b is not supported. Again it is worth noting that in this analysis the control variable, Firm Age, was a significant positive predictor of the dependent variable ($r = 0.18, p < .05$), with an effect size roughly equal to that of the only significant predictor, Managerial Optimism ($r = -0.18, p < .05$), and opposite in direction to its relationship with Gain(Opportunity). In both analyses, there is a clear indication that Firm Age, or rather the experience and resources it is a proxy for, has a significant effect on managerial interpretation.

5.4 Market Information Interpretations as Predictors of Small Firm Growth Intentions

The following table (5.4a) presents the results of hierarchical regression analysis of the direct effects of the positively-valenced interpretation variable in this research, Gain(Opportunity), on the ultimate outcome variable in the research model, Small Firm Growth Intention. In addition, Entrepreneurial Orientation is included to test for a moderating effect on the relationship between interpretation as Gain(Opportunity) and Small Firm Growth Intention. In model 2, Market Information Interpretation as Gain(Opportunity) is strongly supported ($r = 0.44, p < .01$) as a predictor of Small Firm Growth Intentions, supporting Hypothesis 7a.

Table 5.4b, immediately following Table 5.4a, presents the results of hierarchical regression analysis of the direct effects of the negatively-valenced interpretation variable in this research, Loss(Threat), on the ultimate outcome variable in the research model, Small Firm Growth Intention. However, Market Information Interpretation as Loss(Threat) was not a significant predictor of Small Firm Growth Intentions (see Table 5.4b), so Hypothesis 7b was not

supported. None of the control variables in either analysis was significant. The direct effect of Entrepreneurial Orientation is included only as a part of the moderation analysis.

5.5 Entrepreneurial Orientation (EO) as a Moderator

An interaction term was generated by centering Gain(Opportunity)/Loss(Threat) and Entrepreneurial Orientation, and then multiplying the resulting new variables. For both Gain(Opportunity) (see Table 5.4a) and Loss(Threat) (see Table 5.4b), significant interaction with Entrepreneurial Orientation was not supported by the sample data. Thus, Hypotheses H8a and H8b were not supported. Support for Entrepreneurial Orientation as a direct predictor of Growth Intention was supported in models including both the Opportunity and Threat scenarios, but that relationship was not hypothesized by this study.

Table 5.4a: The Moderating Role of Entrepreneurial Orientation in a Gain(Opportunity) Scenario

	DV = Growth Intention		
	Model 1	Model 2	Model 3
Gender	0.01 (0.18)	0.07 (0.16)	0.03 (0.18)
Formal Education Level	-0.03 0.09	-0.08 (0.08)	-0.04 (0.09)
Work Experience	-0.04 (0.01)	-0.07 (0.01)	-0.03 (0.01)
Firm Age	-0.05 (0.00)	0.06 (0.00)	-0.03 (0.00)
Firm Size†	0.02 (.11)	-0.02 (0.10)	0.03 (0.11)
Gain(Opportunity)		0.44** (0.07)	
Entrepreneurial Orientation		0.16* (0.08)	
Gain(Opportunity)*Entrepreneurial Orientation			-0.08 (0.07)
Constant	3.22 (0.56)	3.22 (0.56)	5.92 (0.45)
R ²	0.01	0.26	0.01
Adjusted R ²	-0.03	0.22	-0.03
ΔR ²	0.01	0.25**	0.01
F-Value	0.17	24.91	0.78

N = 159, * *p* < 0.05, ** *p* < 0.01, two-tailed test, standard error in parentheses, † (head count, Log10 transformed)

Table 5.4b: The Moderating Role of Entrepreneurial Orientation in a Loss(Threat) Scenario

	DV = Growth Intention		
	Model 1	Model 2	Model 3
Gender	0.01 (0.18)	0.05 (0.17)	0.01 (0.18)
Formal Education Level	-0.03 (0.09)	-0.07 (0.08)	-0.03 (0.08)
Work Experience	-0.04 (0.01)	-0.03 (0.01)	-0.04 (0.01)
Firm Age	-0.05 (0.00)	-0.02 (0.00)	-0.05 (0.00)
Firm Size†	0.02 (0.11)	-0.03 (0.11)	0.02 (0.11)
Threat(Loss)		-0.01 (0.06)	
Entrepreneurial Orientation		0.32** (0.08)	
Threat(Loss)*Entrepreneurial Orientation			0.04 (0.08)
Constant	5.99 (0.44)	4.59 (0.60)	5.99 (0.44)
R ²	0.01	0.10	0.01
Adjusted R ²	-0.03	0.06	-0.03
ΔR ²	0.01	0.09**	0.00
F-Value	0.17	7.55	0.23

*N = 159, *p < 0.05, **p < 0.01, two-tailed test, standard error in parentheses, † (head count, Log10 transformed)*

5.6 Summary of Hypotheses Test Results

The sample data obtained for this research provided empirical support for 6 of the 13 hypotheses developed to test its model, and Table 5.5 presents these results. Table 5.6a and 5.6b, which follow, present the updated model with the results of the analysis. Managerial Optimism positively predicted Small Firm Growth Intention, positively predicted Market Information Interpretation as Gain(Opportunity), and negatively predicted Market Information Interpretation as Loss(Threat). Managerial Social Capital positively predicted Small Firm Growth Intention and positively predicted Market Information Interpretation as Gain(Opportunity). Market Information Interpretation as Gain(Opportunity) in turn positively predicted Small Firm Growth Intention.

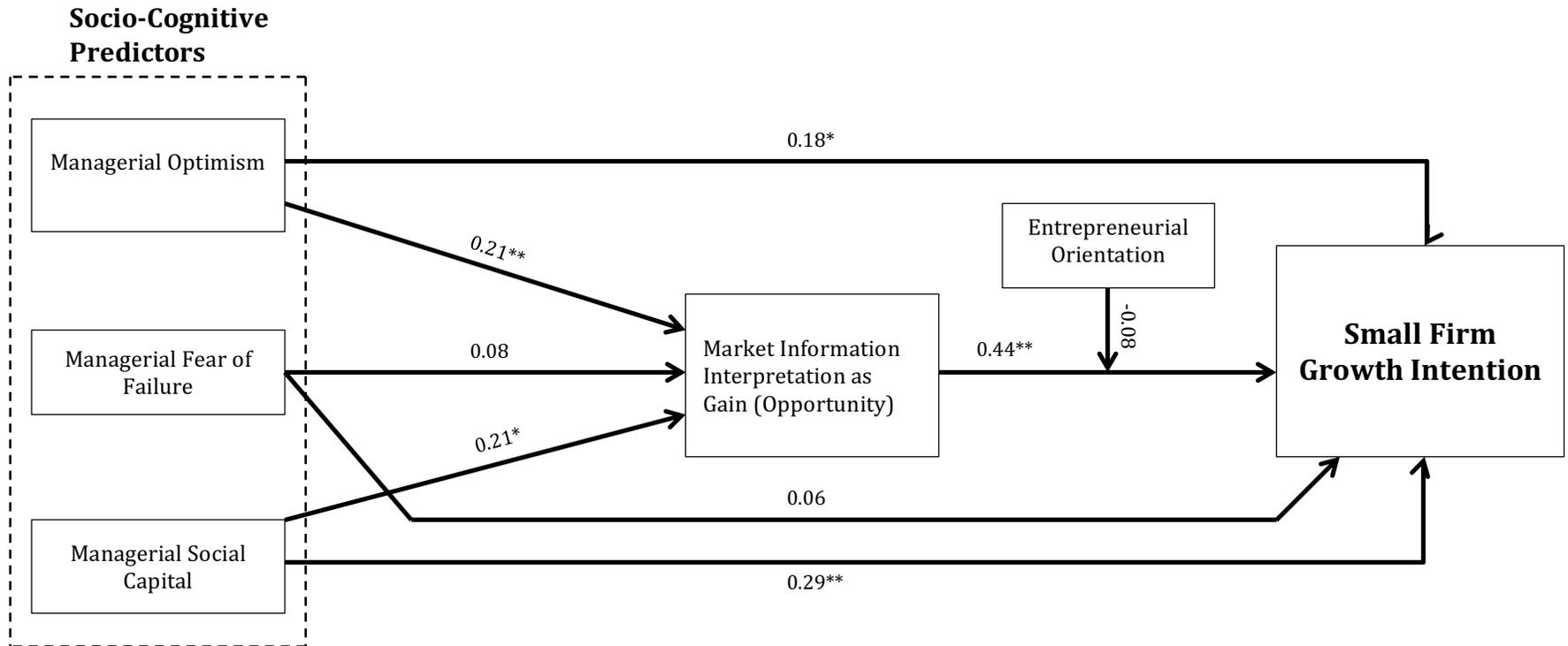
Other, unanticipated findings include support for a negative relationship between Firm Age and Market Information Interpretation as Gain(Opportunity), and a positive relationship between Firm Age and Market Information Interpretation as Loss(Threat), as well as a positive direct relationship between Entrepreneurial Orientation and Small Firm Growth Intention. The result for Firm Age was not predicted, but may be an indication of the greater ease with which threats are identified by experienced firms due to their wider array of available mental models. The very fact that a firm is older is an indication of its ability to survive, after all, and that requires at least some degree of successful but not overly-optimistic opportunity identification and threat management. This points to the need to integrate experience-related factors into future models, as it is reasonable that experience tends to bring with it a greater variety of action plans through greater context that is applicable to new conditions. Currently, the model's cognitive factors do not include anything that directly captures this issue, but it seems likely that it could benefit from doing so. If firm experience turns out to be predictive of

interpretation accuracy, a variable representing its influence could be a key determinant of the curvilinear relationship between optimism and firm performance as previously seen by Hmieleski and Baron (2009).

Table 5.5: Summary of Hypothesis Test Results from Hierarchical Regression

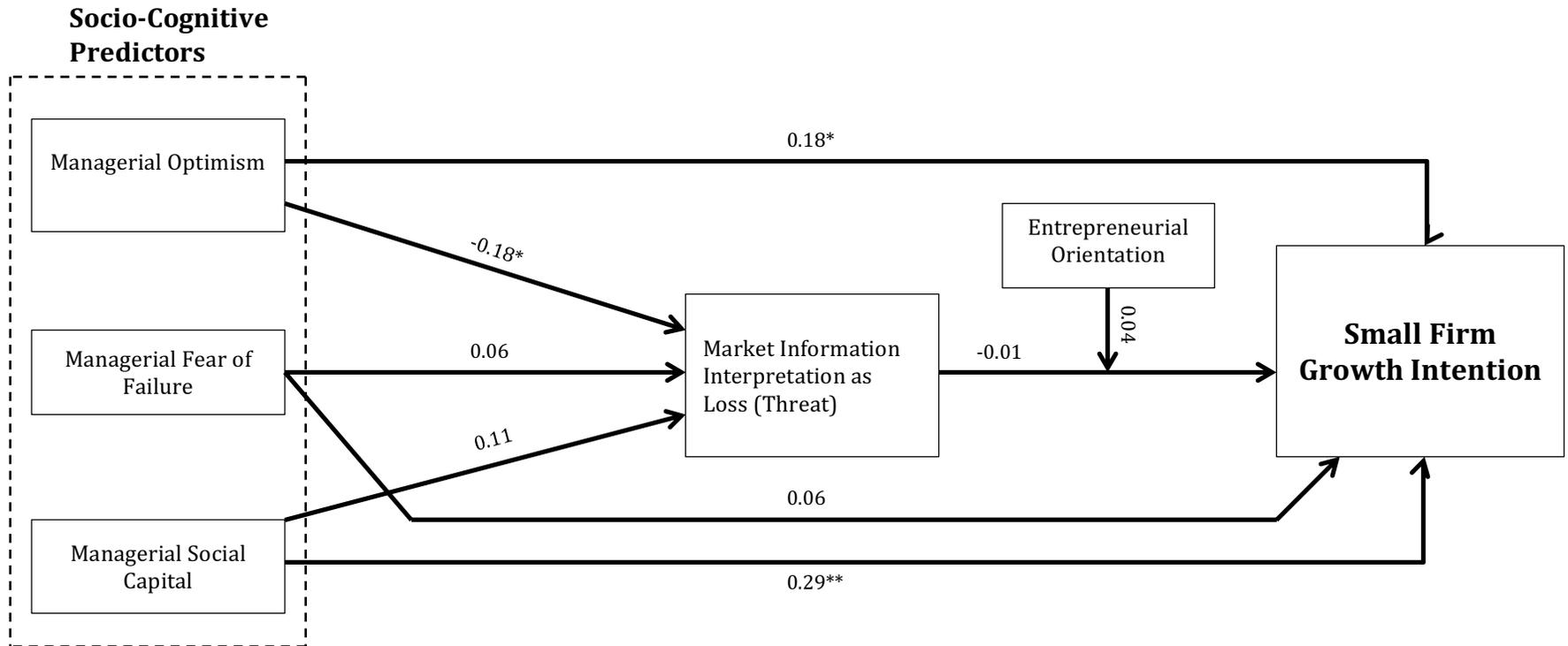
	Hypothesized Relationship	Supported?
H1	The level of Optimism among small firm managers is positively related to Small Firm Growth Intention.	Yes
H2	Managerial Fear of Failure among small firm managers is negatively related to Small Firm Growth Intention.	No
H3	Managerial Social Capital is positively related to Small Firm Growth Intention.	Yes
H4a	Managerial Optimism is positively related to Market Information Interpretation as Gain(Opportunity).	Yes
H4b	Managerial Optimism is negatively related to Market Information Interpretation as Loss(Threat).	Yes
H5a	Managerial Fear of Failure is negatively related to Market Information Interpretation as Gain(Opportunity).	No
H5b	Managerial Fear of Failure is positively related to Market Information Interpretation as Loss(Threat).	No
H6a	Managerial Social Capital is positively related to Market Information Interpretation as Gain(Opportunity).	Yes
H6b	Managerial Social Capital is negatively related to Market Information Interpretation as Loss(Threat).	No
H7a	Market Information Interpretation as Gain(Opportunity) is positively related to Small Firm Growth Intention.	Yes
H7b	Market Information Interpretation as Loss(Threat) is negatively related to Small Firm Growth Intention.	No
H8a	Entrepreneurial Orientation positively moderates the relationship between Market Information Interpretation as Gain(Opportunity) and Small Firm Growth Intention.	No
H8b	Entrepreneurial Orientation negatively moderates the relationship between Market Information Interpretation as Loss(Threat) and Small Firm Growth Intention.	No
<p>Other significant but not hypothesized findings included support for 1) a negative relationship between Firm Age and Gain(Opportunity) 2) a positive relationship between Firm Age and Loss(Threat), and 3) a positive direct relationship between Entrepreneurial Orientation and Small Firm Growth Intention in both the Opportunity and Threat scenarios.</p>		

Table 5.6a: Hierarchical Regression – Opportunity Scenario



* $p < 0.05$, ** $p < 0.01$

Table 5.6b: Hierarchical Regression – Threat Scenario



* $p < 0.05$, ** $p < 0.01$

5.7 Supplementary Analysis

A supplementary analysis was conducted in the interests of thoroughness, and because sample size did not allow for structural equation modeling using SPSS AMOS. Although mediating hypotheses were not specifically included, the model implies mediation, so a mediation test was performed using the bootstrapping methodology initially developed by Preacher and Hayes (2004) and further developed by Hayes (2013). This technique, in contrast to the Baron and Kenny (1986) approach to testing mediation, offers several advantages. The Hayes (2013) method uses bootstrapping techniques to resample data through the use of macros in SPSS. It has greater statistical power than earlier methods, and does not require normal distribution. This is important because “these methods provide a general way to test significance and construct confidence intervals in a wide variety of situations where analytical formulas for quantities may not be available. Second, the methods do not require as many assumptions as other tests, which is likely to make them more accurate than traditional mediation analysis” (MacKinnon, Fairchild, & Fritz, 2007).

The method developed by Hayes (2013) currently exists in the form of the PROCESS macro, of which version 2.16.3 was used, with 10000 bootstrap samples for each mediation test. This particular macro not only allowed for testing of mediation, it also permitted (using Model 14 in the macro) the testing of the entire model with all variables simultaneously entered, including a moderated mediation analysis. The results for all variables used in this alternative analysis of the research model can be found in Appendix D.

The analysis confirmed several of the results given by the earlier hierarchical regression analysis. H3, H4a, H4b, and H7a were supported, but there were two exceptions: H1 and H6a were not supported at $p < .05$. The analysis also confirmed that a direct relationship existed

between Entrepreneurial Orientation and Growth Intention, but that relationship was only significant in the Loss(Threat) scenario. Curiously, the p-value for H6b, the relationship between Social Capital and Loss(Threat), strengthened relative to the earlier hierarchical regression analysis (the p-value improved from 0.11 to 0.07), but was still not sufficient to support significance. Table 5.8 at the end of this section summarizes the PROCESS results with respect to the research hypotheses.

The following tables display the results of mediation tests using Managerial Optimism, Fear of Failure, and Social Capital as predictors, and Gain(Opportunity) and Loss(Threat) as mediators, with Growth Intention as the final dependent variable, and with Entrepreneurial Orientation as a moderator of the relationships between Gain(Opportunity)/Loss(Threat) and Growth Intention.

Results of the first, second, and third mediation tests are shown on Table 5.6a, and indicate that the relationship between Managerial Optimism and Growth Intention is significantly mediated by Gain(Opportunity) interpretation. The relationships between Social Capital and Growth Intention, and between Fear of Failure and Growth Intention are not mediated by Gain(Opportunity), as their 95% Lower Confidence Interval (C.I.) values are not on the same side of zero as their Upper C.I. values.

Table 5.7a: Mediation Tests for Gain(Opportunity) Scenario

Predictor	Coefficient	Std. Error	Lower C.I.	Upper C.I.
Managerial Optimism	0.09*	0.44	0.02	0.20
Fear of Failure	-0.02	0.04	-0.01	0.10
Social Capital	0.04	0.03	-0.01	0.13

Results of the third, fourth, and fifth mediation tests are shown in Table 5.6b, and indicate no significant mediation occurs involving Managerial Optimism, Fear of Failure, or

Social Capital, with respect to Loss(Threat), and Growth Intention. For all three socio-cognitive predictors the indirect path is not significant. Following this table, Table 5.7 presents a summary of PROCESS macro results for research hypotheses, and Tables 5.8a and 5.8b present the updated model with the results of the analysis from the PROCESS macro.

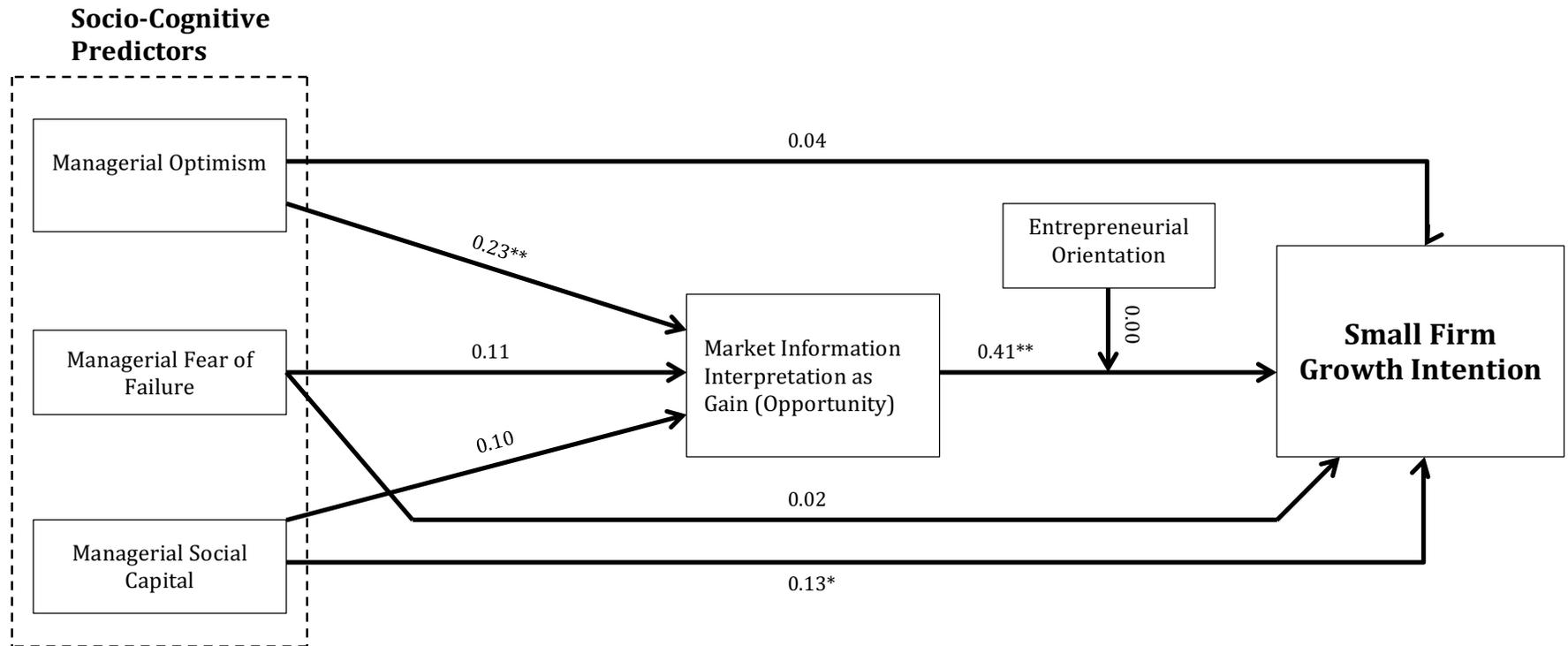
Table 5.7b: Mediation Tests for Loss(Threat) Scenario

Predictor	Coefficient	Std. Error	Lower C.I.	Upper C.I.
Managerial Optimism	0.00	0.02	-0.04	0.06
Fear of Failure	0.00	0.01	-0.01	0.03
Social Capital	-0.00	0.01	-0.04	0.02

Table 5.8: Summary of Hypothesis Test Results from PROCESS Analysis

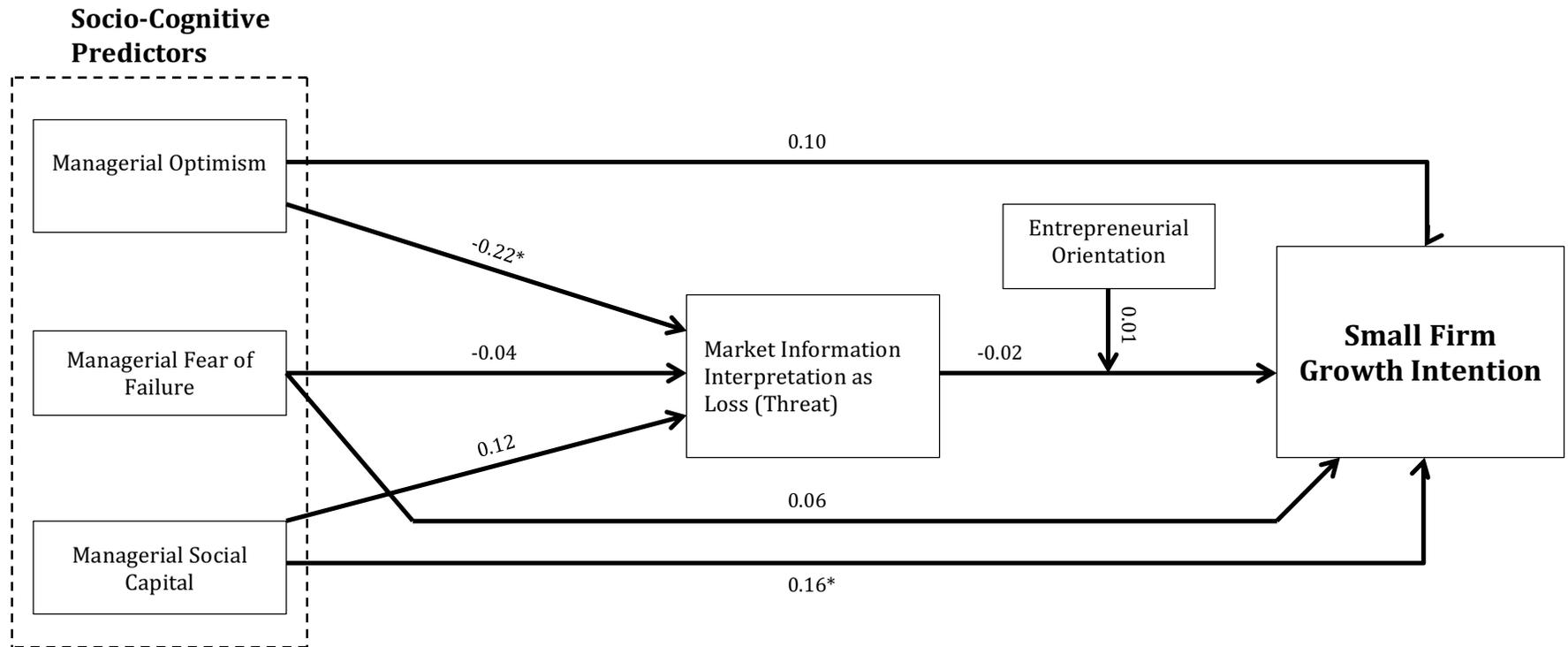
	Hypothesized Relationship	Supported?
H1	The level of Optimism among small firm managers is positively related to Small Firm Growth Intention.	No
H2	Managerial Fear of Failure among small firm managers is negatively related to Small Firm Growth Intention.	No
H3	Managerial Social Capital is positively related to Small Firm Growth Intention.	Yes
H4a	Managerial Optimism is positively related to Market Information Interpretation as Gain(Opportunity).	Yes
H4b	Managerial Optimism is negatively related to Market Information Interpretation as Loss(Threat).	Yes
H5a	Managerial Fear of Failure is negatively related to Market Information Interpretation as Gain(Opportunity).	No
H5b	Managerial Fear of Failure is positively related to Market Information Interpretation as Loss(Threat).	No
H6a	Managerial Social Capital is positively related to Market Information Interpretation as Gain(Opportunity).	No
H6b	Managerial Social Capital is negatively related to Market Information Interpretation as Loss(Threat).	No
H7a	Market Information Interpretation as Gain(Opportunity) is positively related to Small Firm Growth Intention.	Yes
H7b	Market Information Interpretation as Loss(Threat) is negatively related to Small Firm Growth Intention.	No
H8a	Entrepreneurial Orientation positively moderates the relationship between Market Information Interpretation as Gain(Opportunity) and Small Firm Growth Intention.	No
H8b	Entrepreneurial Orientation negatively moderates the relationship between Market Information Interpretation as Loss(Threat) and Small Firm Growth Intention.	No
<p>Other significant but not hypothesized findings included support for 1) a negative relationship between Firm Age and Gain(Opportunity) 2) a positive relationship between Firm Age and Loss(Threat), and 3) a positive direct relationship between Entrepreneurial Orientation and Small Firm Growth Intention in the Threat (but not Opportunity) scenario.</p>		

Table 5.9a: Moderated Mediation Analysis – Opportunity Scenario



* $p < 0.05$, ** $p < 0.01$, PROCESS v 2.16.3, Model 14, 10000 bootstrap samples

Table 5.9b: Moderated Mediation Analysis – Threat Scenario



* $p < 0.05$, ** $p < 0.01$, PROCESS v. 2.16.3, Model 14, 10000 bootstrap samples

This chapter has made use of the data collected, with methods appropriate to its sample size, to evaluate the research hypotheses developed for this work. Multiple methods of analysis have provided a clearer picture of the relationships that are supported, and for the specific nature of their support. Although the particular bootstrapping method used in the supplementary analysis is a relatively new approach compared to the hierarchical regressions used, their ability to distinguish direct and indirect paths, their ability to analyze the entire model at once, and their general agreement with the findings of the more conventional hierarchical regressions makes it difficult to truly treat their results as supplementary. If anything, it can be argued that they should supplant, rather than supplement, the earlier analysis. Chapter 6 will discuss this issue.

In Chapter 6, this paper will also discuss these research findings further, to include implications for scholars and contributions to academic research, as well as implications for owners and managers in a practitioner role. Chapter 6 will also discuss limitations of the research presented here, an overview of some possible future research directions implied by this work, and concluding thoughts.

CHAPTER VI

DISCUSSION AND IMPLICATIONS

This chapter will present a discussion of the results given in Chapter 5, including an interpretation of the meaning of those results in light of the theoretical background of this research, and the hypotheses developed from that theory. Section 6.1 will describe the scholarly implications of this research, including the contribution of this work to existing theory, and an interpretation of the results of data analysis. Section 6.1 will also discuss managerial implications of this research, including findings relevant to practitioners seeking a greater understanding of the decision-making process leading to Small Firm Growth Intention, both in terms of the consequences of decision-making, and influences that are particularly relevant to particular decision-making outcomes. Section 6.2 will present a discussion of limitations of this research project, as well as future research directions connected to and implied by this work.

6.1 Implications

6.1.1 Scholarly Implications

This research has produced several interesting findings that contribute to understanding the nature of decision-making, in some cases confirming existing research, in some conflicting with it, and in others elaborating upon it. The three major areas of contribution are in cognitive factors, social factors, and interpretations

6.1.1.1 Interpretations. Perhaps the most significant contribution of this work is made through the emphasis on the role of interpretation in the process of determining growth intentions, especially given the lack of a well-developed literature that considers growth intention as an outcome rather than an antecedent of growth. The central question of this research has been why some firms grow, and others do not. In answering that question, this dissertation focuses on the role that interpretation plays in arriving at a conclusion regarding Growth Intention.

The model developed herein is an attempt to show how an alternative paradigm to the Ability-Need-Opportunity (ANO) framework can be developed in order to illuminate just that issue. And, the results of the data analysis show a few general trends. The results answer the research questions in several ways. They show that managerial characteristics do predict small firm Growth Intention. In the case of Managerial Optimism, that relationship is fully mediated by Market Information Interpretation as Opportunity, and non-significant in the context of a corresponding Threat Interpretation Scenario. Social Capital's relationship with Growth Intention appears to be direct, and appears to hold when controlling for both Opportunity and Threat contexts. Market Information Interpretation has a strong relationship with Growth Intention in an Opportunity context, and no relationship in a Threat context.

This is an indication that the valence of Market Information Interpretation is determinative of whether that interpretation will influence Growth Intention. Existing research has established that managers are differentially sensitive to opportunities and threats, but such literature has not been manifested in the form found in this dissertation, where managers have shown relatively strong sensitivity to opportunity and relatively strong insensitivity to threat. Jackson and Dutton (1988) found just the opposite, that managerial threats generated stronger

reactions than opportunities, as did Chattopadhyah et al. (2001) who found that threats influenced organizational action while opportunities failed to, which would seem to indicate that there should be a relationship between Loss(Threat) interpretations and Growth Intention, yet such a relationship is not supported by this study's data. In fact, it is strongly opposed by this study's findings.

Two factors may explain why the results for Loss (Threat) are so different from those for Gain (Opportunity). Firstly, because threats are much less likely to be identified, it may be that they did not generate enough of a response to support a relationship. This seems somewhat implausible. Another possibility is that the response to threat is not only different from response to opportunity in magnitude, but it is fundamentally different in nature with respect to Growth Intention. An interpretation of Gain(Opportunity) offers only positive outcomes for the manager: if the manager is uninterested there may be no growth intention, but no response is otherwise necessary. If the manager is interested, that interest will manifest in the form of Growth Intention in the direction of the opportunity. On the other hand, an interpretation of Loss(Threat) offers choices that are less clear. A threat may be ignored (but research indicates that is unlikely once it is identified), in which case no response is given. But, unlike the opportunity condition, there is more than one alternative to dismissal in the case of threat. The manager may engage in retrenchment, protecting core assets of the firm and trimming elements of the firm that are seen as nonessential, which would result in not only a lack of Growth Intention, but a deliberately negative Growth Intention. On the other hand, a threat could generate an aggressive Growth Intention response, with threat serving as an indication that the firm cannot afford to be complacent, and inspiring action in the form of investment, seeking new markets, recruiting new talent, developing new products and innovations, and other

manifestations generally associated with Growth Intention, all in the name of effectively responding to a threat.

Two findings with respect to interpretation are most salient here. One is that positive and negative interpretations of environmental information have greatly dissimilar outcomes with respect to intention outcomes. Opportunity interpretations may be highly noticeable and actionable, while Threat interpretations may be dismissed outright, especially when other factors, including social influences, are pointing in the other direction.

6.1.1.2 Cognitive Factors. The findings with respect to Managerial Optimism are for the most part expected, but importantly contribute to existing research by further specifying the nature and process of the relationship between Managerial Optimism and Growth Intention. The failure to find a significant curvilinear relationship between Managerial Optimism and Growth Intention is interesting, in that it appears to indicate the location that the curvilinear effect is created lies outside of the model. Perhaps, as previously mentioned, it is an issue of interpretation accuracy, where positive Growth Intention meets the environment and is either suited to it, or inappropriate for it.

The results of this study show that Managerial Optimism is not only related to Growth Interpretation, but is also mediated by Market Information Interpretation. This alone is an important finding in that previous studies, the path between Managerial Optimism and Growth Intention was treated as direct, or as an unspecified process (Cassar, 2010; Nyock Ilouga et al., 2014). That is not to say that these findings disagree with the earlier literature, but they certainly elaborate upon them. A further elaboration of our understanding of this relationship is a concurrence with findings that Managerial Optimism is resilient in the face of Threat (Kahneman

& Lovallo, 1993; Schou et al., 2005). In any case, it is clear that this general principle is supported: managerial cognitive predictors such as Managerial Optimism are capable of playing a role both in determining perception of the environment, and in determining small firm Growth Intention.

The findings with respect to Fear of Failure are somewhat more difficult to interpret. Its relationship with Growth Intention is very clearly not supported, and its relationships with interpretations of market information were not supported either. This raises the question of whether respondents were unable to recognize or unwilling to admit this characteristic in themselves due to social desirability bias, or whether these relationships truly do not exist. Regardless, the data in the main phase study did not support the expected relationships for Fear of Failure in the research model, a finding that conflicts with existing literature, especially with Li (2011), who found that Fear of Failure was negatively related to opportunity identification. If Fear of Failure, or something like it, is to be included in future models, there will need to be some resolution regarding its performance, either in the form of an explanation of a more elaborate process by which it influences interpretation, or in the form of an alternative scale that more effectively detects the results found in previous findings. It may be the case that the context of retail management is uniquely riddled with social desirability bias, and that the scale is appropriate, but the context is problematic for testing this model. At this point, without further data, this is a matter of conjecture. In general however, if threats are less likely to be identified (Jackson & Dutton, 1988), then perhaps characteristics positively associated with threat are less likely to be reported. Of course, it may simply be the case that Fear of Failure is simply not predictive with respect to either market information interpretation or Growth Intention.

6.1.1.3 Social Factors. The results indicated that Social Capital was directly related to Growth Intention in the context of both positively and negatively-valenced market information interpretations, in a direct relationship, and there was a positive relationship between Social Capital and positive market information interpretation. Interpretation, however, did not mediate the relationship between Social Capital and small firm Growth Intention.

This is an important finding that may be an indication of the level of security and resilience that Social Capital offers with respect to maintaining Growth Intention even in opposition to negative interpretations. But, it also is an indication that the influence of Social Capital exists apart from interpretation even in a positive context. It at least indicates that Social Capital's benefits in relation to Growth Intention are relatively stable whether new events are being interpreted or not. These findings are at odds with several previous studies, including De Carolis and Saporito (2006), Lim et al. (2013), Gary and Wood (2011), and Oyson and Whittaker (2015), in that those studies all indicate support for the role of Social Capital in shaping interpretations of the environment. It is significant that the findings of this dissertation are at such odds with this expectation, and with the literature reviewing the particular topic of social factors influencing interpretation (Abebe & Alvarado, 2014).

There are a few possibilities for why this may be the case, and it is worth noting again that during the factor analysis (Table 5.1b), Social Capital loaded on two factors, one representing close personal (friends and family) ties, and the other institutional and social/community ties. The second factor was used in both main phase analyses. It may be that in using only items from the second Social Capital factor that was extracted, the analysis unnecessarily limited the strength of the relationship. It is also possible, because some types of Social Capital lend themselves more to resource allocation, and some that lend themselves more

to issue interpretation (Liao & Welsch, 2005; Nahapiet & Ghoshal, 1998), that the measure chosen for this study was appropriate to the first, but not the second case. However, the measure used, developed from Davidsson and Honig (2003) and later used by De Carolis et al. (2009), focused on social networks and relational capital, and its relational capital items appear especially well-suited to detecting Social Capital related to information interpretation. So, while it is satisfying that the direct relationship between Social Capital and Growth Intention is supported, it is puzzling that the relationship between Social Capital and the interpretation scenarios was not supported. The answer may be that Social Capital does influence interpretation as Gain(Opportunity) and as Loss(Threat), but that in giving the Owner/Manager a broader array of information to draw upon, its influence is related to the accuracy of such interpretations when interacting with the economic environment, rather than the Gain(Opportunity) or Loss(Threat) determination. A more complex model that captures growth outcomes following growth intentions developed from interpretations could clarify whether Social Capital's role in influencing interpretation lies in developing successful interpretation of the environment, rather than simply determining the valence of the interpretation.

6.1.1.4 Other Findings. Finally, the lack of a moderating effect by Entrepreneurial Orientation on Managerial Interpretation's relationship with Growth Intention, in the presence of a strongly significant direct effect by Entrepreneurial Orientation on Growth Intention may be an indication that dispositional factors in general will have their impact on decision-making either prior to interpretation events (by influencing the interpretation event itself), or in spite of the interpretation, afterward.

This is suggested in previous research (Wiklund & Shepherd, 2003b) indicating that Entrepreneurial Orientation moderation occurred at some point after opportunity discovery and exploitation, and prior to firm performance. If opportunity exploitation takes place after Growth Intention, then the moderating effect of EO is likely to exist outside of the research model presented here. There seems to be no question that the place chosen for EO in this dissertation's research model is not representative of the manner in which it functions, yet considerable literature has found it to be a notable predictor of growth outcomes. Even though the relationship proposed in this dissertation does not confirm its exact location, its failure to find support does contribute significantly by narrowing the scope of search for its place in the larger process of growth development.

6.1.2 Managerial Implications

Acting upon Growth Intention implies the adoption and implementation of a growth strategy, beginning with a process that includes the allocation of new firm resources or re-allocation of existing resources, prioritization of new operations relative to existing operations, and mustering of community connections and partners. This study helps managers to understand not only these outcomes, but also the origins of the decision that leads to them. It offers greater insight into the internal development of managerial strategy, providing guidelines that managers can use in analyzing their own decision-making and behavior.

From a policymaking point of view, the findings of the study emphasize the need for and value of organizations that connect experienced owners and managers with each other, and with the institutions that are key to providing growth resources, including for example small business development centers. These resources include information that educates managers regarding

industry and market trends, which are clearly influential with respect to establishing Growth Intention. Policy makers would also be well-advised to be aware of the role they have to play regarding the creation of a mood of optimism, as optimism shapes market information interpretations, but caution should be exercised with the understanding that overly optimistic forecasts by policy makers can lead to localized or even systemic economic bubbles.

From a practitioner's point of view, this study shows the importance of opening oneself to those forces that shape perceptions by encouraging small firm growth. To the extent that managers can personally develop their sense of optimism, they will be able to more consistently maintain Growth Intention over time, and to resist discouragement in the face of threat, which is a key characteristic of a successful entrepreneur. There is clearly a strong argument to be made from these results that the creation of a business climate conducive to entrepreneurial growth will influence efforts by Owner/Managers in that direction, as their decision-making seems to be particularly attentive to opportunity. The impact of such a climate, however, may be notably diminished unless efforts are made to connect the reality of opportunity to the awareness of it. However benevolent the climate, if an entrepreneur is insufficiently optimistic, or insufficiently social, that entrepreneur will be bereft of the benefits of that benevolence. Social Capital in the form of connections to business institutions, including local business and professional organizations, and social groups, including community and religious organizations, offer a familiarity with the environment and a greater resource base that results in a greater likelihood of arriving at the intention to grow, so the determined owner/manager should routinely find themselves in the company of such organizations.

Yet, the findings here also serve as a warning to managers. Even when Threat is determined to exist in the environment, managers appear to tend to respond more strongly to

social influences when determining Growth Intention. Likewise, when Opportunity is determined, managers need to be aware that a significant portion of that interpretation derives from their personal optimism, or lack thereof. As such, the market information interpretation is partially a matter of the manager seeing what they want to see. For practitioners, the implication is clear: Socio-Cognitive influences may benefit the firm, but they also pose a potential risk.

6.2 Limitations and Future Research Directions

By necessity this research has focused on a specific context (Owner/Managers in Small and Medium-sized Enterprises), although its central issue, decision-making, is very broadly applicable to many other contexts that this research does not speak to directly. Similarly, in order to avoid the need to develop multiple sets of scenarios while attempting to maintain their equivalency, this study focused on a single industry. A more generalizable study focused on and controlling for multiple industries would have necessitated not only the assurance that the Opportunity and Threat scenarios for each industry were adequately equivalent in their presentation, it would have also required a much larger sample size than was obtained for this study, and in using multiple different scenarios arguably would have been an amalgamation of several individual studies rather than a single study.

There are several opportunities for further research implied by the results presented here. One is that, as previously mentioned, not all firms seek growth, but it is also true that not all firms who lack growth intention do so for the same reasons. For some firms, a lack of Growth Intention may represent a decision-making process that arrives at the judgment that while growth is possible, stability is more desirable, and for other firms, it may represent a decision-making process that concludes that growth is not possible. There is of course also the possibility that a

lack of Growth Intention is due to a personal lack of ambition. The inclusion of a measure such as Small Business Orientation (Runyan et al., 2008) in the model could help to reflect alternative priorities of some Owner/Managers.

Second, from a Socio-cognitive perspective, Growth Intention is an obvious outcome, but connecting Growth Intention to the larger body of entrepreneurial literature requires that it ultimately arrives at a measure of Firm Growth itself. Although much of the literature dealing with Firm Growth assumes a single measure of growth, a binary question of growth and non-growth, the issue of firm growth outcomes is at least a ternary (growth, stability, decline) or quaternary (growth, intended stability, unintended stability, and decline) problem. In other words, the intentions of an Owner/Manager are important to decision-making, but market forces may, and often do, outweigh the intentions of the Owner/Manager. By combining Firm Growth models with Growth Intention models, a more complete picture of the process leading to growth outcomes could be developed, and the relative significance of managerial decision-making could be more clearly understood. At the same time, another issue that is not addressed by this research could be investigated by these more elaborate models: the significance of the accuracy of interpretations, and perhaps greater insight into antecedents of accurate interpretation.

This same issue of the opposed but non-binary is relevant to further consideration of how studies such as this one might be conducted in the future. Rather than presenting two independent scenarios, scenarios could be developed with a more balanced blend of opportunity and threat-prompting information, such that an analysis of a model with Gain(Opportunity) and Loss(Threat) as two simultaneous mediators. This type of research model might more accurately reflect the complex environments that practitioners face. There is some evidence of the

importance of including both mediators simultaneously in the notable differences between effect sizes and significance levels in the two scenarios, direction aside.

It is also worth considering further research into the issue of sequence when it comes to disposition and interpretation, in light of the findings related to EO. Further research could reveal if there is a relationship between the stability of dispositions and whether they are more likely to influence the formation of interpretation, or its results. If dispositions are unlikely to influence the results of interpretations once they are formed, then research can attempt to reveal what factors or types of factors actually can influence fully formed interpretations.

6.3 Conclusion

This research has presented a model developed to more precisely explore the process of development of Growth Intention, using socio-cognitive factors with the inclusion of interpretation events that to this point, have been largely missing from similar research. It is clear from the results of this study that interpretation does play a role in the development of Small Firm Growth Intention, most notably that Market Information Interpretation as Gain(Opportunity) has the potential to be highly influential to such intentions. It is also clear that responses to positively-valenced factors, such as Managerial Optimism and interpretation as Gain(Opportunity) are markedly different not only in magnitude, but in nature, when compared to their negatively-valenced counterparts in the form of Fear of Failure and interpretation as Loss(Threat).

This research is intended as the beginning of an investigation into these issues, and as mentioned in Section 6.2, there are many more issues to be explored here, both in terms of producing a more accurate picture of the process leading to Small Firm Growth Intention, and in

terms of placing a model of that process into the larger body of work representing the final outcome of so much management research: firm growth.

At the very least, this model and its results have produced an indication of where data meets theory, and where it does not, a justification for increased research focus on interpretation, especially on the differing effects of interpretation as Gain(Opportunity) and Loss(Threat), and insight into how theory of Growth Intention can be further extended in the future.

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APPENDIX A

APPENDIX A

IRB APPROVAL

NOTICE OF APPROVAL
Institutional Review Board for Human Subjects (IRB)
FWA#00000805

Dear Researchers,

This email is regarding your UTPA IRB submission titled "Social and Psychological Determinants of Firm Growth Intentions" – IRB# 2015-036-03.

The IRB protocol referenced above has been reviewed and APPROVED.

Basis for approval: Expedited, Category #7

Approval expiration date: April 23, 2016

Recruitment and Informed Consent: You must follow the recruitment and consent procedures that were approved. If your study uses an informed consent form or study information handout, you will receive an IRB-approval stamped PDF of the document(s) for distribution to subjects.

Modifications to the approved protocol: Modifications to the approved protocol (including recruitment methods, study procedures, survey/interview questions, personnel, consent form, or subject population), must be submitted in writing to the IRB at irb@utpa.edu for review. **Changes must not be implemented until approved by the IRB.**

Approval expiration and renewal: Your study approval expires on the date noted above. Before that date you will need to fill out, sign and submit the continuing review form to irb@utpa.edu using the electronic submission form on the IRB website (<http://www.utpa.edu/irb>). If you will be interacting with subjects **or** working with individually identifiable private information, you need to have active IRB approval. Failure to return the form will result in your study file being closed on the approval expiration date.

Data retention: All research data and signed informed consent documents should be retained for a *minimum* of 3 years after *completion* of the study.

Reports: Submission of a status report to assess the study's progress, or a final report when a study has been completed (*this applies to all IRB approved protocols*) is required. For exempt protocols, a status report should be submitted on a yearly basis, unless the study has been completed in which case a final report will be required. For expedited and full review protocols, the continuing review request form is equivalent to a status report. A final report should be submitted for completed studies or studies that will be completed by their respective expiration date.

APPENDIX B

APPENDIX B

SURVEY QUESTIONNAIRE ITEMS

Growth Intention and Perceived Growth:

(7-point Likert scale with 1=Strongly Disagree and 7=Strongly Agree)

As a retail manager,

1. _____ I intend to grow and expand my business in the next few years.
2. _____ I have a plan to grow and expand my business operation in the next few years.
3. _____ I have always wanted to grow my business beyond the current level.
4. _____ My primary goal is to grow this business beyond its current level.
5. _____ Compared to competitors, how do you rate your firm's growth in annual sales in the last two years?
6. _____ Compared to competitors, how do you rate your firm's growth in employment in the last two years?

Small Business Orientation:

(7-point Likert scale with 1=Strongly Disagree and 7=Strongly Agree)

1. _____ I established this business because it better fit my personal life than working for someone else.
2. _____ I consider this business to be an extension of my personality.
3. _____ My goals for this business are interwoven (interconnected) with my family's needs.
4. _____ I love my business.

Fear of Failure:

(7-point Likert scale with 1=Strongly Disagree and 7=Strongly Agree)

1. _____ When I am failing, I am afraid that I might not be good enough.
2. _____ When I am failing, it upsets my "plan" for the future.
3. _____ When I am not succeeding, people are less interested in me.
4. _____ When I am failing, important others are disappointed.
5. _____ When I am failing, I worry about what others think of me.

Social Capital:

(7-point Likert scale with 1=Strongly Disagree and 7=Strongly Agree)

- 1. _____ Friends and family members often provide support and advice for my business.
- 2. _____ I rely on friends and family members in making decisions about my business.
- 3. _____ I currently belong to a number of business and professional associations and groups.
- 4. _____ I currently belong to a number of religious and community organizations.
- 5. _____ My involvement in business and community organizations gives me access to new information.
- 6. _____ My involvement in business and community organizations gives me access to resources.

Managerial Optimism:

(7-point Likert scale with 1=Strongly Disagree and 7=Strongly Agree)

- 1. _____ In uncertain times, I usually expect the best.
- 2. _____ If something can go wrong for me, it will.
- 3. _____ I’m always optimistic about my future.
- 4. _____ I hardly ever expect things to go my way.
- 5. _____ I rarely count on good things happening to me.
- 6. _____ Overall, I expect more good things to happen to me than bad.

Entrepreneurial Orientation:

Selecting a 1 indicates a complete agreement with the statement on the left side of the scale, selecting a 7 indicates complete agreement with the right side of the scale.

A. In general, our top management team favors...

A strong emphasis on the marketing of tried and true products and services 1 2 3 4 5 6 7

A strong emphasis on R&D, technological leadership, and innovation

Low-risk projects with normal and certain rates of return 1 2 3 4 5 6 7

High-risk projects with chances of very high returns

A cautious, “wait and see” posture in order to minimize the probability of making costly decisions when faced with uncertainty 1 2 3 4 5 6 7

A bold, aggressive posture in order to maximize the probability of exploiting potential when faced with uncertainty

B. How many lines of products or services has your company marketed in the past 5 years?

No new lines of products or services 1 2 3 4 5 6 7

Many new lines of products or services

Changes in product or service lines have been mostly of a minor nature 1 2 3 4 5 6 7

Changes in product or service have usually been quite dramatic

C. In dealing with its competitors, our company...

Typically responds to actions which competitors initiate 1 2 3 4 5 6 7

Typically initiates actions to which competitors then respond

Is very seldom the first company to introduce new products, services, operating technologies, technologies, etc. 1 2 3 4 5 6 7

Is very often the first company to introduce new, products, services, operating technologies, etc.

Typically seeks to avoid competitive clashes, preferring a "live-and-let-live" posture 1 2 3 4 5 6 7

Typically adopts a very competitive, "undo-the-competitor" posture

D. In general, our management team believes that...

Owing to the nature of the environment, it is best to explore gradually via cautious behavior 1 2 3 4 5 6 7

Owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives

Demographic Variables:

1. Age _____ 2. Gender ____ M ____ F
3. Current level of formal education: __ High School, __ Associate, __ Bachelor's, __ Master's, __ Doctoral
4. Are you: _____ owner-manager or _____ manager of the company?
5. Have you started companies other than this company in the past? _____
6. How many years of work experience do you have? _____
7. How long have you worked in the retail business? _____
8. When was the company founded? _____
9. How many employees does the company currently have? _____
10. Annual sales revenue of company: \$ _____
11. Do you have intentions to expand your business beyond its current level? ____ Yes ____ No

Scenario 1 (Opportunity):

Please read a brief scenario regarding the retail industry and answer the questions that follow using the scale provided.

As a result of the U.S. economic recovery, retail businesses have recently been experiencing a steady increase in sales. According to data from the U.S. Department of Commerce, retail sales went up by more than 3% between October 2013 and March 2014. Specifically, online shopping has become a very popular choice for many consumers. American consumers spent \$263 billion online in 2013, which represents 8% of the total retail sales. Many industry analysts expect that online retail sales will significantly rise from 8% in 2013 to around 11% in 2018, as more and more customers take advantage of the convenience and choice of online shopping. In a similar trend, a growing number of U.S. customers now report using their mobile phones and tablet computers for shopping. Such mobile commerce is allowing customers to conveniently and instantly purchase products and services. A recent report by Goldman Sachs projects that mobile commerce sales will grow and more than triple by 2018. Retailers across the country are taking steps to adapt these customer trends and develop strategies to offer customer value in both physical stores, online and social media platforms.

Scenario 2 (Threat):

A recent report on the state of the retail sector indicates a number of challenges that undermine the profitability and growth of the industry. Following the recent recession, customers are becoming more price-sensitive and frugal in their shopping habits, preferring to shop at discount retailers. Most customers now prefer to buy private-label rather than brand name merchandise. Retailers are being forced to offer deep discounts on their merchandise. As a result, many retailers are struggling to stay profitable and increase their profit margins. In addition, physical (brick-and-mortar) stores in malls and shopping centers are reporting a significant decrease in customer traffic as customers increasingly use online and mobile shopping. Many analysts and retail executives are concerned that they have too much retail store space that is not being productively used. Analysts also point out the growing income inequality and stagnant wages among Americans. Recent economic reports indicate that real income for the bottom 20% of Americans grew only 19.5% between 1967 and 2012. As more consumers experience economic uncertainties and high household debt, it is likely that they will have less disposable income to spend on retail shopping.

Survey items to accompany Scenarios 1 and 2 (gain/loss, positive/negative, opportunity/threat):

As a retail manager, to what extent would your company:

1. _____ Perceive that benefits will come from the situation?
2. _____ Label the situation as a potential gain?
3. _____ Feel that there is a high probability of gaining a great deal?
4. _____ Feel that there is a high probability of losing a great deal?
5. _____ Label the situation as a potential loss?
6. _____ Feel the future will be better because of the situation?
7. _____ See the situation as having positive implications for the future?
8. _____ Label the situation as something positive?
9. _____ Label the situation as something negative?
10. _____ See the situation as having negative implications for the future?
11. _____ Have a choice about whether or not to address the situation?
12. _____ Feel it has the capability to address the situation?
13. _____ Feel it can manage the situation instead of the situation managing it?
14. _____ Be constrained in how it could interpret the situation?
15. _____ Feel that how the situation is resolved will be a matter of chance?

APPENDIX C

APPENDIX C

FACTOR LOADINGS, RELIABILITIES AND CORRELATION MATRICES – PILOT STUDY RESULTS

Variable	Items	Factor 1	Factor 2	Cronbach's Alpha
Social Capital	SOC1		0.89	0.80
	SOC2		0.90	
	SOC3	0.78		
	SOC4	0.72		
	SOC5	0.92		
	SOC6	0.92		
Fear of Failure	FOF1	0.72		0.81
	FOF2	0.77		
	FOF3	0.79		
	FOF4	0.77		
	FOF5	0.76		
Managerial Optimism	MOP1		0.90	0.81
	MOP2R	0.80		
	MOP3		0.69	
	MOP4R	0.81		
	MOP5R	0.87		
	MOP6		0.75	
Entrepreneurial Orientation	EO1		0.76	0.84
	EO2		0.88	
	EO3		0.89	
	EO4	0.76		
	EO5	0.77		
	EO6	0.66		
	EO7	0.76		
	EO8	0.78		
	EO9	0.70		
Growth Intention	GroInt1	0.93		0.96
	GroInt2	0.91		
	GroInt3	0.96		
	GroInt4	0.96		
Gain/Positive	ScOppGain1	0.87		0.96

Opportunity Scenario	ScOppGain2	0.91		
	ScOppGain3	0.90		
	ScOppPos1	0.91		
	ScOppPos2	0.92		
	ScOppPos3	0.93		
Loss/Negative Threat Scenario	ScThrLoss1	0.84		0.86
	ScThrLoss2	0.82		
	ScThrNeg1	0.82		
	ScThrNeg2	0.87		

Social Capital	Mean	Std. Dev.	SOC1	SOC2	SOC3	SOC4	SOC5	SOC6
	SOC1	5.43	1.51	1.00				
SOC2	4.08	1.79	0.66	1.00				
SOC3	4.06	1.92	0.27	0.30	1.00			
SOC4	3.88	1.96	0.17	0.36	0.58	1.00		
SOC5	4.73	1.74	0.08	0.12	0.58	0.53	1.00	
SOC6	4.88	1.66	0.15	0.19	0.61	0.51	0.89	1.00

FOF	Mean	Std. Dev.	FOF1	FOF2	FOF3	FOF4	FOF5
FOF1	4.16	1.99	1.00				
FOF2	4.35	1.85	0.59	1.00			
FOF3	3.20	1.70	0.42	0.51	1.00		
FOF4	3.49	1.76	0.29	0.45	0.58	1.00	
FOF5	3.92	1.85	0.47	0.38	0.46	0.57	1.00

Managerial Optimism	Mean	Std. Dev.	MOP1	MOP2R	MOP3	MOP4R	MOP5R	MOP6
	MOP1	5.31	1.65	1.00				
MOP2R	4.63	1.88	0.09	1.00				
MOP3	5.60	1.50	0.43	0.41	1.00			
MOP4R	5.00	1.78	0.28	0.59	0.43	1.00		
MOP5R	4.83	2.02	0.06	0.51	0.52	0.68	1.00	
MOP6	5.92	1.15	0.50	0.53	0.69	0.41	0.43	1.00

EO	Mean	Std. Dev.	EO1	EO2	EO3	EO4	EO5	EO6	EO7	EO8	EO9
EO1	4.00	1.98	1.00								
EO2	3.88	1.61	0.49	1.00							
EO3	4.06	1.67	0.55	0.82	1.00						
EO4	4.22	1.98	-0.08	0.17	0.22	1.00					
EO5	3.88	1.81	0.26	0.37	0.47	0.54	1.00				
EO6	4.40	1.54	0.21	0.15	0.25	0.33	0.46	1.00			
EO7	3.98	1.57	0.14	0.38	0.44	0.45	0.70	0.36	1.00		
EO8	4.08	1.55	0.25	0.33	0.38	0.38	0.64	0.59	0.73	1.00	
EO9	4.32	1.56	0.25	0.12	0.16	0.52	0.39	0.41	0.40	0.45	1.00

Growth Intention	Mean	Std. Dev.	GroInt1	GroInt2	GroInt3	GroInt4
	GroInt1	5.78	1.32	1.00		
GroInt2	5.49	1.36	0.77	1.00		
GroInt3	5.84	1.24	0.86	0.83	1.00	
GroInt4	5.90	1.30	0.86	0.83	0.92	1.00

Gain/Positive Opportunity Scenario	Mean	Std. Dev.	ScOppGain1	ScOppGain2	ScOppGain3	ScOppPos1	ScOppPos2	ScOppPos3
	ScOppGain1	5.92	1.21	1.00				
ScOppGain2	5.76	1.32	.74	1.00				
ScOppGain3	5.58	1.43	.75	0.71	1.00			
ScOppPos1	5.74	1.29	.72	0.85	0.78	1.00		
ScOppPos2	5.76	1.33	.76	0.87	0.77	0.79	1.00	
ScOppPos3	5.72	1.36	.78	0.78	0.90	0.81	0.81	1.00

Loss/Negative Threat Scenario	Mean	Std. Dev.	ScThrLoss1	ScThrLoss2	ScThrNeg1	ScThrNeg2
	ScThrLoss1	4.12	1.54	1.00		
ScThrLoss2	3.94	1.60	0.47	1.00		
ScThrNeg1	4.10	1.66	0.77	0.46	1.00	
ScThrNeg2	4.13	1.55	0.56	0.82	0.52	1.00

APPENDIX D

APPENDIX D

PROCESS MACRO RESULTS

Opportunity Scenario, N=154, PROCESS Procedure for SPSS version 2.16.3 by Andrew F. Hayes, Analysis Model 14

Outcome: Growth Intention

	Coefficient	Std. Error	t	p-value	Lower C.I.	Upper C.I.
Constant	5.32**	0.63	8.42	0.00	4.07	6.57
Gender	0.08	0.16	0.51	0.61	-0.24	0.40
Formal Education Level	-0.11	0.08	-1.42	0.16	-0.26	0.04
Work Experience	-0.01	0.01	-0.92	0.36	-0.02	0.01
Firm Age	0.00	0.00	0.54	0.59	-0.01	0.01
Firm Size	-0.06	0.10	-0.64	0.52	-0.26	0.13
Managerial Optimism	0.04	0.08	0.43	0.67	-0.13	0.20
Fear of Failure	0.02	0.06	0.26	0.79	-0.11	0.14
Social Capital	0.13*	0.62	2.16	0.03	0.01	0.26
Gain(Opportunity)	0.41**	0.08	4.97	0.00	0.25	0.57
Entrepreneurial Orientation	0.14	0.08	1.72	0.09	-0.02	0.30
Interaction Term	0.00	0.06	0.02	0.99	-0.13	0.13

Outcome: Gain(Opportunity)

	Coefficient	Std. Error	t	p-value	Lower C.I.	Upper C.I.
Constant	-1.57*	0.65	-2.41	0.02	-2.86	-0.29
Gender	-0.20	0.17	-1.20	0.23	-0.54	0.13
Formal Education Level	0.02	0.08	0.20	0.84	-0.14	0.18
Work Experience	0.01	0.01	0.78	0.44	-0.01	0.02
Firm Age	-0.01*	0.00	-2.37	0.02	-0.02	-0.00
Firm Size	-0.03	0.11	-0.29	0.77	-0.24	0.18
Managerial Optimism	0.23*	0.08	2.73	0.01	0.06	0.40
Fear of Failure	0.11	0.07	1.55	0.12	-0.03	0.24
Social Capital	0.10	0.07	1.59	0.11	-0.03	0.23

Threat Scenario, N=154, PROCESS Procedure for SPSS version 2.16.3 by Andrew F. Hayes, Analysis Model 14

Outcome: Growth Intention

	Coefficient	Std. Error	t	p-value	Lower C.I.	Upper C.I.
Constant	4.84**	0.67	7.24	0.00	3.52	6.16
Gender	0.03	0.17	0.16	0.88	-0.31	0.37
Formal Education Level	-0.11	0.08	-1.28	0.20	-0.27	0.06
Work Experience	-0.00	0.01	-0.45	0.66	-0.02	0.01
Firm Age	-0.00	0.00	-0.31	0.76	-0.01	0.01
Firm Size	-0.10	0.11	-0.88	0.38	-0.31	0.12
Managerial Optimism	0.10	0.09	1.10	0.28	-0.08	0.28
Fear of Failure	0.06	0.07	0.90	0.37	-0.07	0.20
Social Capital	0.16*	0.07	2.43	0.02	0.03	0.30
Loss(Threat)	-0.02	0.09	-0.17	0.87	-0.18	-0.15
Entrepreneurial Orientation	0.26**	0.08	3.12	0.00	0.10	0.42
Interaction Term	0.02	0.08	0.23	0.82	-0.13	0.17

Outcome: Loss(Threat)

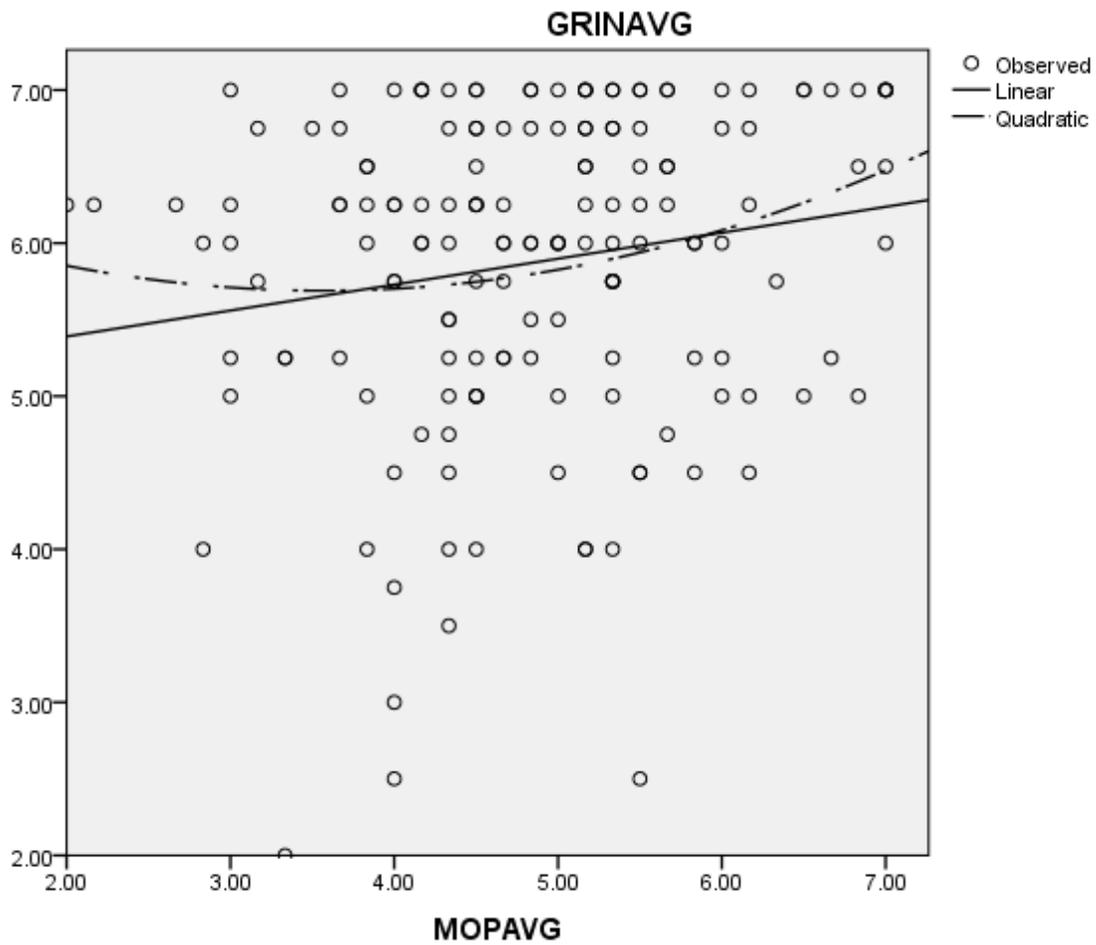
	Coefficient	Std. Error	T	p-value	Lower C.I.	Upper C.I.
Constant	0.49	0.64	0.62	0.54	-0.87	1.67
Gender	-0.02	0.17	-0.13	0.90	-0.35	0.31
Formal Education Level	0.03	0.08	0.33	0.74	-0.13	0.18
Work Experience	-0.01	0.01	-0.74	0.46	-0.02	0.01
Firm Age	0.01*	0.00	2.19	0.03	0.00	0.02
Firm Size	0.14	0.10	1.37	0.17	-0.06	0.35
Managerial Optimism	-0.22*	0.08	-2.61	0.01	-0.38	-0.05
Fear of Failure	-0.04	-0.07	-0.64	0.52	-0.18	0.09
Social Capital	0.12	0.06	1.85	0.07	-0.01	0.25

APPENDIX E

APPENDIX E

ANALYSIS OF POSSIBLE CURVILINEARITY OF THE RELATIONSHIP BETWEEN
MANAGERIAL OPTIMISM AND GROWTH INTENTION

Curve-fitting of Managerial Optimism (MOPAVG) to Growth Intention (GRINAVG)



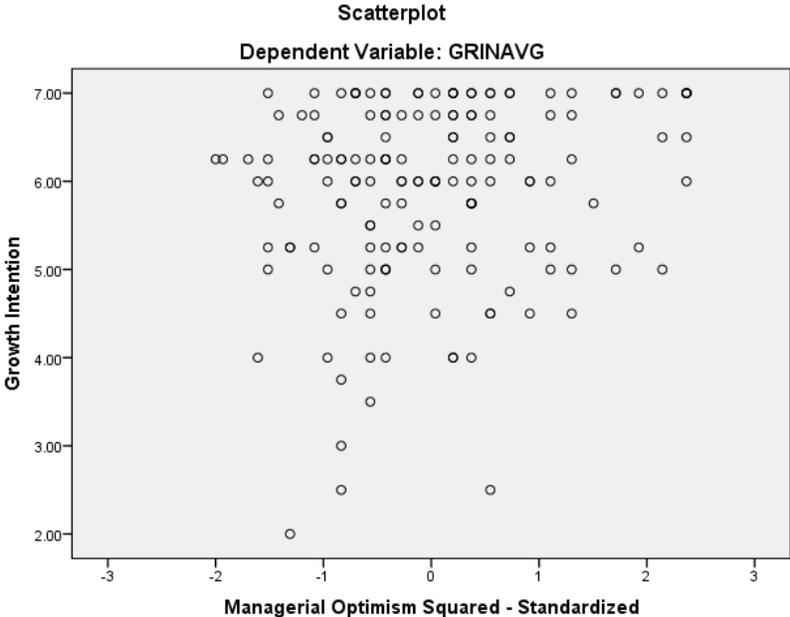
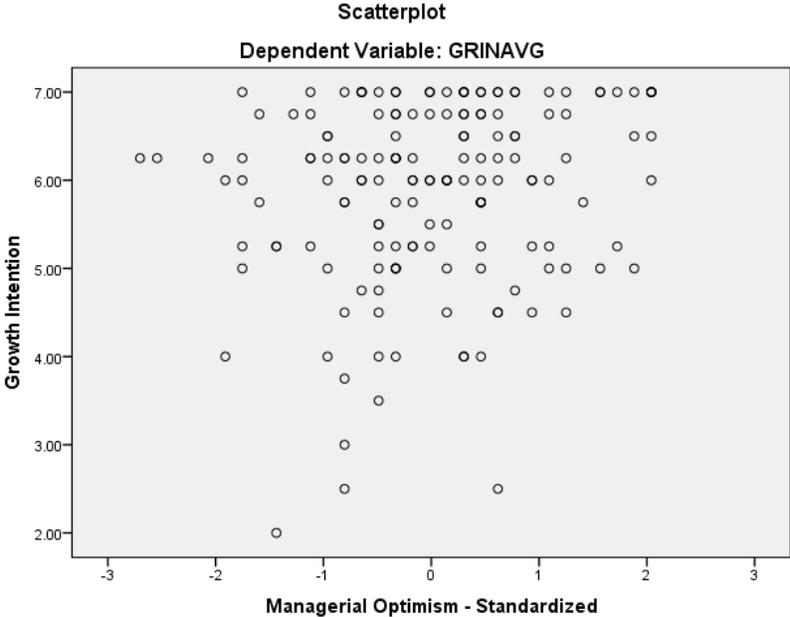
Linear model :

R	R²	Adj. R²	Std. Error		
0.17	0.03	0.02	1.03		
ANOVA	Sum of Squares	df	Mean Square	F	Sig.
Regression	5.04	1	5.04	4.76	0.03
Residual	166.32	157	1.06		
Total	171.36	158			
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Managerial Optimism	0.17	0.08	0.17	2.18	0.03
(Constant)	5.05	0.39		13.11	0.00

Quadratic Model:

R	R²	Adj. R²	Std. Error		
0.20	0.04	0.03	1.03		
ANOVA	Sum of Squares	df	Mean Square	F	Sig.
Regression	6.61	2	3.31	3.13	0.05
Residual	164.75	156	1.06		
Total	171.36	158			
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Managerial Optimism	-0.48	0.54	-0.48	-0.89	0.38
Managerial Optimism ²	0.07	0.06	0.66	1.22	0.22
(Constant)	6.54	1.28		5.12	0.00

Scatterplot Comparison: Managerial Optimism and Managerial Optimism²



BIOGRAPHICAL SKETCH

David A. Alvarado earned his Bachelor's Degree in the Plan II Honors Program at the University of Texas at Austin in 1997, his Master's Degree in English as a Second Language at the University of Texas-Pan American in 2009. While working on his Master's Degree, he taught English Composition in China at the Huazhong University of Science and Technology. He also spent several years working for Apple Computer, Inc., and managing two start-up businesses. He currently resides at 2316 Liverpool Drive, Edinburg, TX, 78539.