UNDERSTANDING THE EFFECTS OF DECISION-MAKING LOGICS ON SMALL BUSINESS RELATIVE PROFITABILITY

by

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A dissertation submitted to the faculty of
The University of North Carolina at Charlotte
in partial fulfillment of the requirements
for the degree of Doctor of Business Administration

Charlotte

2023

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ABSTRACT

NATHAN A. CLICK. Understanding the Effects of Decision-Making
Logics on Small Business Relative Profitability
(Under the direction of DR. LAURA STANLEY)

This study examines the decision-making logics of 220 small and micro-entrepreneurial businesses throughout the United States and presents a model for a better understanding of the impact of decision-making approaches on relative profitability through the lens of effectuation theory in the small business and entrepreneurial context. The study fills existing gaps in literature by accounting for the moderating influences of the decision-maker's emotions (affect) as well as accounting for entrepreneurial orientation. The study finds that effectuation is positively related to small business relative profitability. Entrepreneurial orientation as well as positive and negative owner / manager affect are shown to moderate the relationship between either decision-making logic and firm relative profitability.

DEDICATION

This dissertation is dedicated to my loving wife, Savanna Click, without whom this study would not be possible. Savanna, thank you for encouraging me to pursue this journey, from the beginning, for sacrificing time and energy for this work, and for continually supporting me through every stage. There is nothing of importance that I could accomplish without your love, support, care, and counsel.

ACKNOWLEDGEMENTS

I first wish to express my appreciation to my committee chair, Dr. Laura Stanley whose guidance and instruction made this dissertation possible. I also wish to acknowledge the other members of my committee; Dr. Franz Kellermanns, Dr. Reginald Silver, and Dr. Chandrasekar Subramaniam for their guidance and direction, as well as my friend Dr. Michael Green who volunteered to proofread the dissertation. Additionally, I wish to acknowledge my father, Rudolph Click who provided aid for the collection of the data. I also must acknowledge Dr. Mike Lee, whose leadership inspired the entire cohort and Dr. Kristen Santos, who made sure our cohort remained organized and did not miss assignments. Lastly, I wish to acknowledge and thank all of the members of Cohort IV, all of whom have been a source of encouragement and strength. Thank You!

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CHAPTER 1: INTRODUCTION

The importance of decision making, also referred to as strategic decision making, has been a staple of business literature for decades. It has become accepted knowledge that decision rationality and logical reasoning are necessary for business success and that these concepts are related to strategic planning; what is less understood is the practical application thereof and the various styles of decision-making approaches (Deligianni, Dimitratos, Petrou, & Aharoni, 2016; S. D. Sarasvathy, Dew, Read, & Wiltbank, 2001). A singular view of decision-making logic has dominated scholarly thinking for decades and has become a staple in business training courses; but, studies on the efficacy of structured decision-making processes have yielded mixed results (Brinckmann, Grichnik, & Kapsa, 2010; S. D. Sarasvathy et al., 2001; Smolka, Verheul, Burmeister–Lamp, & Heugens, 2018). It is becoming more apparent, based on extant literature, that there exists alternative equally valid decision-making logic approaches as well as various strategic orientations that influence the decision-making of business stakeholders (Dew, Read, Sarasvathy, & Wiltbank, 2009; William John Wales, 2015). This understanding is of critical importance as alternative decision-making logics and decision related strategic orientations have been shown to have different levels of effectiveness depending on whether or not the firm is a small business, a large business, or an entrepreneurial business in exploration of new markets (An, Rüling, Zheng, & Zhang, 2019; Shirokova, Osiyevskyy, Laskovaia, & MahdaviMazdeh, 2020; Smolka et al., 2018).

Much of the scholarly knowledge of strategic decision making is based on neoclassical economic principals of bounded rationality, risk mitigation, firms having low levels uncertainty, and firms having sufficient knowledge, resources, and human capital to produce needed decision

outcomes. Also, common understandings of decision making, in relation to strategic planning, involve a linear method of problem solving that includes plan making, goal setting, and performance evaluation (Deligianni et al., 2016; Ralph I. Williams Jr., Scott C. Manley, Joshua R. Aaron, & Francis Daniel, 2018). This view is distanced from the reality of small business and entrepreneurial ventures for at least five major reasons. First, small business and micro-entrepreneurial firms are generally characterized as having resource inequity and their owner / managers as having severely imperfect knowledge (Carrion, Izquierdo, & Cillan, 2017). Second, as a result of this lack of cognitive resources and knowledge capital limitations, small entrepreneurial firms typically experience a great deal of uncertainty. Third, these types of firms are often managed by a single (in some cases, a few) principal owner(s) with complete decision-making authority at all levels of management rather than decentralized management teams (Jansen, Curşeu, Vermeulen, Geurts, & Gibcus, 2011), so decision making is likely to happen as more of a single action instead of a calculated strategic process (Liberman-Yaconi, Hooper, & Hutchings, 2010). Fourth, research indicates that entrepreneurs and small business owners tend to view themselves as being connected to the firm in a more intimate way than managers of large firms; as a result there are much more emotional considerations influencing firm decision-making (Robert A Baron, 2008; Culkin & Smith, 2000). Fifth, recent literature has shown clear and repeated examples of successful expert entrepreneurs who have managed positive outcomes through the employment of a fundamentally alternative decision-making style (S. D. Sarasvathy, 2001). For these reasons there is a need for the continued development of alternate scholarly conceptions of strategic decision-making models, especially with regard to small businesses and entrepreneurial ventures (Matalamäki, 2017; Perry, Chandler, & Markova, 2012).

Newer theories depart from the traditional view by identifying two primary business decision-making logics; causation and effectuation, with causation being aligned with the previously discussed traditional view of strategic decision-making and effectuation being aligned with a more action-oriented, available means focused, view of strategic decision-making (S. Sarasvathy et al., 2014; S. D. Sarasvathy et al., 2001). Causation is defined as a predictive logic. According to Saras Sarasvathy, the pioneer in effectuation theory, "causation processes take a particular effect as a given and focuses on selecting between means to create that effect." Conversely, effectuation is defined as a control logic. Sarasvathy states "effectuation processes take a set of means as a given and focuses on selecting between possible effects that can be created within that set of means" (S. D. Sarasvathy, 2001). Gaps in the literature exist around understanding the interactive relationship between these decision-making logics, entrepreneurial orientation, affect, and uncertainty; and the impact of these constructs on a firm's relative profitability. This paper will seek to explore the impact of causation and effectuation on small business profitability and the moderating influences of both entrepreneurial orientation and emotion or affect.

Entrepreneurial orientation, as a concept is a way of evaluating the general disposition of a firm with regard to its "entrepreneurial" nature. It is generally defined as a decision-making inclination or predisposition that favors entrepreneurial behaviors and processes (Jeffrey G. Covin & Wales, 2012; William J. Wales, Covin, & Monsen, 2020). Researchers have developed a better understanding of the impact of a firm's entrepreneurial orientation on small business performance but the interplay between the decision-making logics of causation and effectuation and entrepreneurial orientation is less understood (Jeffrey G. Covin & Wales, 2012; Lomberg, Urbig, Stöckmann, Marino, & Dickson, 2018). Entrepreneurial orientation is relevant to the

relationship between the owner / manager's decision-making logic and firm outcomes (especially in the small business context) because entrepreneurial orientation is centered around the decision-making proclivities of the firm which is greatly influenced by the decision-making disposition of the firm's owners / managers. Also, less understood, is how the small business owner's / manager's individual attitudes, feelings, and emotions (collectively referred to as 'affect') influence their decision-making ability. Further, the interplay between decision-making, firm performance, and the degree to which the owner / manager avoids uncertainty is also less understood.

Emotion, or affect, has been shown to have significant impacts on decision-making and given that small business owners have been shown to experience a higher degree of emotional attachment to their firms, it is critical to understand the role of affect in small business decision making and how affect, decision-making logic and entrepreneurial orientation interact to determine outcomes (Robert A Baron, 2008; Cohen, 2005; Culkin & Smith, 2000).

Generally, high levels of uncertainty are a common reality for small businesses and entrepreneurial firms. As such, the degree to which the owners / managers resist or avoid uncertainty in their decision-making process is important to understand. Current studies provide mixed results with regard to the interplay between decision-making, uncertainty avoidance, and performance (Brinckmann et al., 2010; Rauch, Frese, & Sonnentag, 2000).

Extant literature provides a great deal of variation in the conceptualization of how the dependent variable of firm performance is evaluated, especially as it pertains to privately held small businesses (Lange, Mollov, Pearlmutter, Singh, & Bygrave, 2007; Zhang, Li, Sha, & Yang, 2022). Scholars generally choose a measure of performance consistent with the theoretical underpinnings of their specific research question (De Massis, Kotlar, Mazzola, Minola, &

Sciascia, 2018). Many studies focus on non-financial performance indicators, such as employee growth, others focus on financial performance indicators, such as revenue, and others utilize a composite. Few studies focus specifically on the financial performance indicator of profitability (Brinckmann et al., 2010). This study seeks to fill gaps in literature by specify focusing on small business profitability; specifically, profitability relative to peer firms.

This study seeks to answer the following research question: can small business enterprises improve their relative profitability through the utilization of decision-making logics? Therefore, one of the necessary goals of this study is to specifically evaluate the relationship between a firm's decision-making logic and a firm's profitability relative to its competitor or peers. This study seeks a better understanding around which decision-making logic approach has the higher likelihood of maximizing small firm relative profitability. It also examines the moderating effects of entrepreneurial orientation and positive and negative affect on the relationship between decision-making logics and firm relative profitability.

There is sufficient evidence to support the notion that either causal logic or effectual logic has a positive relationship with firm performance; this study does not seek to reexamine this finding, only to apply it to small business ventures and adapt the focus specifically to relative profitability. Instead, this study builds on the framework of various meta-analytic reviews, in effectuation theory, showing contextual positive relationships between both causation and effectuation and firm performance (Chen, Liu, & Chen, 2021; Read, Song, & Smit, 2009; Zhang et al., 2022). To this end, the effectual and causal logics of small business owners will be evaluated as well as the relative profitability of their firms. These relationships will set the foundational framework for the proposed model to be discussed.

This study adds to existing practical understanding by examining the small business environment specifically, examining the potential moderating constructs of entrepreneurial orientation and affect, focusing on the specific performance measure of profitability relative to peers, clearly defining said profitability measure, and benchmarking profitability across multiple industries, thereby expanding the evidence base for generalizability within the context of small business ventures (Robert A Baron, 2008; Khedhaouria, Gurău, & Torrès, 2014; Putnins & Sauka, 2019). Entrepreneurial orientation, being intrinsically related to decision-making, will be examined through the lens of effectuation theory (Jeffrey G Covin & Slevin, 1989; Mthanti & Urban, 2014). As it stands, entrepreneurial orientation appears to positively relate to aspects of effectuation as well as aspects of firm performance, but the specific interactions of these relationships are somewhat understudied, leaving a gap in current knowledge, which this study will address (Jeffrey G. Covin & Wales, 2012; Khedhaouria et al., 2014; Mthanti & Urban, 2014). Entrepreneurial Orientation will be measured and evaluated for its moderating impact on the decision-making logic / relative profitability relationship.

Emotion influences decision-making and judgment significantly (Culkin & Smith, 2000; Isen & Labroo, 2003). As a result, it is likely that any decision-making model that excludes emotional factors is incomplete. As observations of small business owners reveal a high degree of emotional connectedness to the business enterprise and as emotion has been shown to influence reasoning and judgment in general, this study will seek to examine the influence of moods and emotions, referred to as affect, on decision outcomes (Cohen, 2005; Forgas & George, 2001). Although current literature has yet to fully explore the role of affect and emotion as they relate to decision-making in entrepreneurial and small business environments, evidence suggests that the influence of affect would be significant due, in part, to the high degree of

uncertainty typically associated with entrepreneurism and small business operations (Robert A Baron, 2008; Runyan & Covin, 2019). Where uncertainty is high, individuals have less cognitive scripts to guide decision-making and behaviors and may be more likely to rely on individual ad-hoc heuristics and emotional judgments (Robert A Baron, 2008; Lichtenstein, Dooley, & Lumpkin, 2006). Both positive and negative affect will be measured and tested for their potential moderating impact on the decision-making logic / relative profitability relationship.

This study will propose a model that conceptualizes a strategic decision-making approach, centered in effectuation theory, specific to small business and micro-entrepreneurial firms. The model incorporates the role of affect, and entrepreneurial orientation. If validated this model would significantly enhance our understanding of how small business and micro-entrepreneurial owner / managers can use decision-making logic to maximize relative profitability.

CHAPTER 2: LITERATURE REVIEW

Small Business Context

The relationship between strategic decision-making and performance has been a topic of study for scholars for over forty-years (Ralph I. Williams Jr. et al., 2018). This area of study has unique implications as it pertains to small businesses. Small and medium sized businesses are essential to economic development, as these firms are responsible for providing much needed innovation, technological growth, and new job creation to an economy (Kreiser, Marino, Kuratko, & Weaver, 2012). In the past, researchers have mistakenly assumed that small businesses are miniature versions of large firms. The reality is that small businesses have unique

characteristics that create a fundamentally different strategic environment (La Rocca, La Rocca, & Cariola, 2009). Small businesses have fewer resources relative to large enterprises, so owners / managers of small and medium enterprises (SMEs) need to be more effective in how they handle time and utilize their scarce resources (Carrion et al., 2017). Given resource limitations, a major commitment of capital from entrepreneurs and small business owners necessary to assemble the comprehensive support team needed for a structured decision-making process is generally impractical or unlikely (La Rocca et al., 2009; Liberman-Yaconi et al., 2010). This liability of smallness creates a situation for small business owners where capital scarcity simultaneously creates an increased need for and prevents quality decision-making (Kumar, Boesso, Favotto, & Menini, 2012). It will be harmful to small and developing firms to adopt a decision-making model that consumes more resources and energy than it brings in profit, therefore it is necessary for small business owners to find ways to maximize their decision-making profitability given their resource constraints (Brinckmann et al., 2010; Liberman-Yaconi et al., 2010; Ralph I. Williams Jr. et al., 2018).

Researchers remain split in their perception of how decision-making can be approached by founders and small business owners, especially as it relates to strategic planning (Baker, 2003; Brinckmann et al., 2010; Liberman-Yaconi et al., 2010). Some claim that it is essential to plan efficiently and others support a "storm the castle" method where owners simply ‘go with it’ without having a deliberate decision-making approach (Brinckmann et al., 2010). Further there is division on what exactly constitutes a plan, with some scholars viewing a plan as a final product and others as an abstract decision-making process (Karel, Pawliczek, & Piszczur, 2013). Existing literature continues to focus on the benefits (or lack thereof) of strategic decision-making and planning with respect to outcomes, i.e. the influence of strategic planning in general

on efficiency, causal vs. effectual decision-making logics and their effect on company performance, as well as strategic orientations, such as entrepreneurial orientation and its effect on company performance (Laukkanen, Nagy, Hirvonen, Reijonen, & Pasanen, 2013). The interplay between decision-making logics and strategic orientations (defined, for the purposes of this study as describing how firms operate by classifying firms into a specific category or "orientation") has also been investigated to some degree (Smolka et al., 2018). Although firms can exhibit multiple orientations those exhibiting an entrepreneurial orientation will be the focus of discussion in this paper (Laukkanen et al., 2013). There is some evidence from the extant literature that suggests that effectuation positively moderates the entrepreneurial orientation and firm performance relationship, at least, among high-tech firms (Mthanti & Urban, 2014). The general trend of the literature aims to examine which mix of decision-making logics and facets of entrepreneurial orientation influences small business success most positively.

There are other relevant considerations that influence the decision results of small business owners / administrators, in addition to the basic strategic planning processes. Usually, small business owners believe themselves to be more connected to the organization than do large business leadership; as a result, goals and risks are measured in a radically different manner. In other words; for small businesses, the personal connection between the owner / manager and the company is generally much stronger than for big companies. This stronger connection has an effect on the way in which small business owners approach strategic decision making (Culkin & Smith, 2000). In addition, the way in which the organization will analyze and process information as well as the capacity of the company to identify possibilities often influences judgment and performance. (Jansen et al., 2011; Liberman-Yaconi et al., 2010).

This paper recognizes that small business enterprises and entrepreneurial enterprises are not necessarily the same (Stewart Jr, Watson, Carland, & Carland, 1999). However, the distinctions between the two and the specific definition of entrepreneur or entrepreneurial entity is an unsettled topic in the entrepreneurial literature. Some scholars define entrepreneurs as founders and business owners with ambitions for profit and growth achieved through strategic planning and define small business owners as those simply seeking family income with the business as an extension of themselves, other scholars link entrepreneurism to new venture creation, and others define entrepreneurs as those who seek opportunities unconcerned with the resources under their control (Eisenmann, 2013; Stevenson & Jarillo, 2007; Stewart Jr & Roth, 2001; Zhao & Seibert, 2006). The fact that the literature does not provide a definitive consensus on what distinguishes an entrepreneurial venture from any other small business enterprise is assumed to have no impact on the research question for this paper; because the focus of the research question at hand is centered around the impact of decision-making logics on profitability in small firms, entrepreneurial or otherwise (Cuervo, Ribeiro, & Roig, 2007; Stewart Jr & Roth, 2001; Stewart Jr et al., 1999). Findings around the impact of decision-making on outcomes have generalizable applications in both small business literature as well as entrepreneurship literature (Brinckmann et al., 2010; Runyan & Covin, 2019; Thurik & Wennekers, 2004). This study seeks to enhance understanding around small business and entrepreneurial decision-making.

Planning and Decision-Making

In the context of this paper the term decision making is primarily meant to refer to business strategic decisions. As with many constructs, a universally agreed upon simple

definition of strategic decision making is difficult to assess. However; current literature generally conceptualizes strategic decision making or decision-making processes as those procedures, formal or informal, undertaken by top management that deal with the allocation of important resources, set precedents for other actions, and influence the relationship of the firm to its environment (Eisenhardt & Zbaracki, 1992; Elbanna, 2006). Existing literature recognizes a relationship between decision-making and strategic planning and may, at times, conflate the two concepts. For example Williams et al (2018) describes a comprehensive strategic approach that could be understood as decision-making processes that lead to a strategic plan (Ralph I. Williams Jr. et al., 2018). Saras Sarasvathy's research in effectuation theory also focuses on different decision-making logics that lead to unique strategic planning behaviors (Chandler, DeTienne, McKelvie, & Mumford, 2011; Dew et al., 2009; S. D. Sarasvathy, 2001; S. D. Sarasvathy et al., 2001). Although it is acknowledged that strategic planning and decision-making are related the focus of this paper will be on the application of decision-making logics. The general consensus of the literature is that structured decision-making processes are a worthwhile endeavor for SMEs; however, the magnitude of the effectiveness and the best methods of planning is far from a settled issue (Brinckmann et al., 2010). In the subsequent section, this paper will provide a brief overview of availible literature surrounding business decision-making logics as examined through the lens of, what is termed, effectuation theory (S. D. Sarasvathy, 2001). A sample of relivant studies on deccision making are highlighted in Table 1.

Table 1: Sample of Relevant SME & Entrepreneurial Studies Referencing Strategic Planning and Decision Making

Study	Journal	Sample	Findings
Ralph I. Williams Jr. et al. (2018)	Journal of Small Business Strategy	231	A comprehensive strategic approach enhances small business performance.
Kreiser et al. (2012)	Small Business Economics	1,668	Innovativeness and proactiveness have positive U-shaped relationships with SME performance. Risk-taking, has a negative U-shaped relationship with SME performance
Carrion et al. (2017)	Strategic Entrepreneurship Journal	951	Economic performance is influenced more by professional and institutional network resources than by the other network resources
Smolka et al. (2018)	Entrepreneurship Theory and Practice	1453	businesses benefit from using causation and effectuation in tandem
Brinckmann et al. (2010)*	Journal of Business Venturing	11,046	Strategic planning is beneficial to entrepreneurs
* Indicates Meta-analysis			

Decision-Making Logics

Within the last twenty years the study of entrepreneurial decision-making logics, viewed as an overarching way of thinking that fundamentally influences the decision-making process, has gained traction under what is termed effectuation theory (McKelvie, Chandler, DeTienne, & Johansson, 2019; Perry et al., 2012; S. D. Sarasvathy, 2001; S. D. Sarasvathy et al., 2001). Effectuation theory was developed following experiments which observed fundamental differences in how expert entrepreneurs and MBA students think and solve problems. Effectuation theory conceives two primary decision-making logics; a means-driven logic called

effectuation or effectual logic and a goals-driven logic referred to as causation or causal logic (S. D. Sarasvathy, 2001; S. D. Sarasvathy et al., 2001). Causal logic is centered around predictive capability and forecasting; as stated, it is primarily goals-driven, and is the dominant logic taught in formal business education. With the aim of minimizing uncertainty, the fundamental premise of causation is: "to the extent that we can predict the future, we can control it." To this end, owner / managers who are causation oriented would be prone to setting strategic objectives and goals, then methodically and analytically constructing a strategic plan to realize stated goals (S. D. Sarasvathy, 2001). Effectuation, by contrast, is derived from the theoretical concepts of bounded rationality and uncertainty (An et al., 2019; S. D. Sarasvathy, 2001). Effectual logic, is centered around the owner / manager's inventory of their available resources, skills, network, and other available capital. This is understood to be the "means." Owners / managers assess themselves, their knowledge and ability, and their network, and develop plans through this lens; prediction is less important, instead effectual owner / managers adapt to the unexpected in real time (S. D. Sarasvathy, 2001). Effectual logic differs fundamentally from causal logic in that effectuation depends on an owner / manager's understanding of the "means" (resources, capital, skills, etc.). Business owners must consider "who they are, what they know, and who they know;" decisions are made based on the resources that are available, leading to various potential goals and objectives. As the situation changes and the means available change, strategies are changed, modified and updated. The core principle of the effectual decision-making logic is: given the perceived available means "to what extent can we control the future, we do not need to predict it" (S. D. Sarasvathy, 2001).

Although effectuation and causation are commonly presented in literature as being separate and distinct, many scholars view the two logics as representing opposite ends of a

spectrum; further, many argue that where the owner / manager sits on the spectrum between effectuation and causation at any given time could be situation-dependent (Dew et al., 2009; S. Sarasvathy et al., 2014). Saras D. Sarasvathy, who proposed the idea of effectuation in 2001, juxtaposed causation and effectuation as independent decision-making logics for ease of comparison, but argued that the two logics are in fact "integral parts of human reasoning that can occur simultaneously" (S. D. Sarasvathy, 2001). Other scholars have also concluded that causation and effectuation are co-existing elements of human thinking rather than mutually exclusive constructs (Smolka et al., 2018). However, many argue that effectual reasoning and causal reasoning have a fundamentally incompatible relationship or that the relationship between the logics is not yet fully understood (An et al., 2019; Chandler et al., 2011).

Traditionally, causal decision-making logic is used as the basis for the classical decision-making methods institutionally taught in all MBA programs (Dew et al., 2009). Research on the topic; however, indicates a lack of consensus on the effect of such decision-making methods on the success of small enterprises and entrepreneurial organizations (J. S. Bracker, Keats, & Pearson, 1988; Brinckmann et al., 2010; Frese et al., 2007; Honig & Samuelsson, 2012). Scholars have indicated that it is a rational assumption that the probability of business success and positive results can be increased by a realistic and coordinated or scripted review of the business situation accompanied by reasonable forecasts incorporated into a methodological decision-making process (Ralph I. Williams Jr., Scott C. Manley, Joshua R. Aaron, & Francis Daniel, 2018; Ralph I. Williams Jr. et al., 2018). Scholars have also indicated that it is a reasonable to hypothesis that this principle will apply to any company, irrespective of the size or age of the company or whether or not the company is operating in an established market or leading a new market. However; when research is conducted, actual findings on the subject

suggest that these assumptions are inconsistent with observations (Ralph I. Williams Jr. et al., 2018). For example, An et al. (2019) conducted a qualitative study evaluating over 300 Chinese firms; the findings indicate that effectual thinking may have greater benefits to small firms and to new ventures than causal thinking (An et al., 2019). Additionally, a study focused on small and medium sized firms in Russia, Shirokova et al. (2020) found evidence that although causation has a positive relationship with performance it is much less pronounced in adverse market conditions. They find that effectuation may be problematic during periods of market stability but enhances performance during times of market uncertainty (An et al., 2019; Shirokova et al., 2020).

Causation, as previously mentioned, is a vital part of traditional strategic decision-making processes. It has therefore been thoroughly conceptualized within the body of extant literature and recognized as a significant element of business education curriculum (Honig & Samuelsson, 2012; S. D. Sarasvathy, 2001). Causal decision-making or the conventional strategy method has been conceptualized as the combined outcome of various business practices. As demonstrated by Williams et al. (2018), which examined three aspects of a holistic strategic approach: planning, goal setting, and the reviewing of financial ratios. It was found that performance was directly affected only by the goal setting process; however, the other practices work together to contributed to a firm having a comprehensive strategic approach; which, positively affects business performance (Ralph I. Williams Jr. et al., 2018)

Effectuation, by contrast, is a much newer concept and is still being studied (Perry et al., 2012). Effectuation is considered to be a much more action-oriented decision-making approach (Smolka et al., 2018). The effectuation process starts with an evaluation of the means available and then progresses to an assessment of future possibilities (Dew et al., 2009; S. D.

Sarasvathy, 2001). Because effectuation is primarily "means-driven," firm leadership will focus planning energy on the available forms of resources and capital, such as; financial capital, equity capital, knowledge capital, human and labor capital, social capital etc. Through processes of experimentation and learning, businesses owners / managers create an attainable business plan that serves as the "best fit" given the options and circumstances. This strategic business plan is often fluid and changing as the firm develops. Additionally, where causation seeks to predict possible gains from a particular strategy, effectual logic focuses on affordable loss. Effectual firms will also generally seek to extend their means by building and leveraging networks and partnerships and will also seek to leverage or capitalize on unexpected contingencies rather than avoid the unexpected (Chandler et al., 2011; S. Sarasvathy et al., 2014; S. D. Sarasvathy, 2001; S. D. Sarasvathy et al., 2001; Smolka et al., 2018).

Because effectual entrepreneurs and business owners tend to be more concerned with affordable loss; focusing on what the firm can afford to lose rather than what the potential gains could be, the planning and decision-making process has a quality of simplicity. The decreased need for prediction minimizes the necessary time and resources needed for analysis (Chandler et al., 2011; S. Sarasvathy et al., 2014). Effectual business owners tend to possess a higher degree of flexibility; which, scholars have pointed out, can be particularly advantageous to new firms. Instead of getting bogged down in administrative bureaucracy, flexibility helps the organization to respond rapidly and adapt processes to changes in the business climate (Chandler et al., 2011).

The effectual strategic approach can be conceptualized as consisting of five business processes working in concert, as shown in Figure 1. These five processes are described as follows: bird-in-hand (assessment of means), affordable loss (assessment of risk based on what can be lost), crazy quilt (networking), lemonade (leveraging contingency), and pilot-in-the-plane

(creator of opportunity rather than finder of opportunity). At the heart of the concept of effectuation is the "central actor," who may be the entrepreneur, owner / manager, or other main stakeholders. This actor looks internally, asking questions, to discover his, her, or their means, which is expressed as being in one of three categories: identity, which centers on the central actor asking “who I am;” knowledge, which focuses on “what I know;” and finally networks, which is centered on “whom I know.” It is the answer to these questions that lead the central actor to answering the question “what can I do.” In other words, the central actor or the one with the “bird” evaluates what he, she or they have “in-hand” then derives a plan of action. This “means assessment” is a critical component to the effectuation process; but, another equally important component is an assessment of affordable loss, which has been previously discussed. The “crazy-quilt” principle, also equally important, is developed from the firm’s need to increase its available means, thereby increasing its available opportunity, as much as possible. This is especially important as firms following an effectual approach will tend to avoid any risk to assets that the stakeholder’s feel that it cannot afford to lose (Dew et al., 2009; S. D. Sarasvathy, 2001). For this reason, the company's key players can aim to exploit their current network and extend their networks through social interaction. The effect is a patchwork of relations across multiple experiences that are joined together. The “lemonade” principle is taken from the colloquialism; “when life gives you lemons make lemonade.” It is a significant part of effectual reasoning to accept uncertainty instead of minimizing uncertainty by way of prediction. Therefore, effectual thinkers tend to position contingencies not as set-backs but as opportunities as often as possible. Lastly the "pilot-in-the-plane” principle underpins the engrained non-predictive logic that permeates through the other four principles. Rather than accepting the outcomes of the market, effectual logic reasons that the central actors can and should create change in the market around

them to the benefit of the firm (S. Sarasvathy et al., 2014). The principals of effectuation are manifested through a cyclical process of expanding means and converging goals. "The first cycle (expanding means) increases the resources available to the venture by increasing stakeholder membership in the effectual network; and the second (converging goals) accretes constraints on the venture that converge into specific goals that get embodied in an effectual artifact over time" (S. Sarasvathy et al., 2014).

Figure 1: The Effectuation Process (S. Sarasvathy, Kumar, York, & Bhagavatula, 2014)

Effectuation is generally considered to be a multidimensional construct. Causation, on the other hand, is often conceptualized as a multidimensional construct; but also studied as a unidimensional construct (Chandler et al., 2011; McKelvie et al., 2019). Generally speaking, effectuation is conceptualized as a formative rather than reflective construct along dimensions directly corresponding to the afore mentioned business processes (Perry et al., 2012). Therefore, the dimensions of effectuation are considered along the following four cognitive processes and behaviors: focus on available means; decision making based on affordable loss; proclivity for strategic alliances and precommitments or networking; and acknowledging and leveraging

contingencies. The desire to control one's environment rather than react or simply predict is captured in the consideration of the four dimensions (Alsos, Clausen, & Solvoll, 2014; An et al., 2019; S. Sarasvathy et al., 2014; S. D. Sarasvathy et al., 2001). Chandler et al. (2011) is credited for developing the first widely utilized measurement for effectuation and causation; while doing so they position effectuation as a multidimensional formative construct and causation as unidimensional, they also indicate that their measure may not be fully consistent with stated effectuation theory and further refinement may be required (Chandler et al., 2011). Subsequent researchers have developed other qualitative and quantitative measures proposed as being more in line with effectuation theory. These researchers generally conceptualize both effectuation and causation as multidimensional (An et al., 2019; Appelhoff, Mauer, Collewaert, & Brettel, 2016; Brettel et al., 2012; Wiltbank, Read, Dew, & Sarasvathy, 2009). For example, Brettel et al. (2012), who puts forward another widely utilized measure, juxtaposes each dimension of effectuation against an 'opposite' corresponding dimension of causation. This results in a multidimensional construct measurement model evaluating causation along the following dimensions: focus on goals rather than available means; decision making based on expected returns rather than affordable loss; reliance on competitive market analysis as opposed to proclivity for strategic alliances; and overcoming or avoiding the unexpected rather than acknowledging and leveraging contingencies (Brettel et al., 2012; McKelvie et al., 2019). This study will adopt a multi-dimensional view of both causation and effectuation along the items listed in Table 2. Such a view is consistent with current effectuation theory (Brettel et al., 2012; Dew et al., 2009; S. D. Sarasvathy et al., 2001)

Table 2: Dimensions of Effectuation vs. Causation (Brettel, Mauer, Engelen, & Küpper, 2012)

Effectuation	Causation
Means Driven	Goals Driven
Focus on Affordable Loss	Focus on Expected Returns
Reliant on Partnerships / Networking	Reliant on Analysis & Prediction
Leverages Contingency	Avoids the Unexpected

The conceptualization of effectuation and causation has been the focus of early works in effectuation theory. Presently the literature has sought to understand the impact of effectuation and causation on firm outcomes or performance (Matalamäki, 2017; McKelvie et al., 2019). There have been a few meta-analyses that examine the relationship between the two decision-logics and firm performance. Three will be discussed here; the first, Read et al. (2009) is a meta-analysis of studies summarizing data from nearly 10,000 new ventures. It was able to show a positive relationship with three principles of effectuation (available means, partnership / networking, and leveraging contingencies) and new venture performance (Read et al., 2009). Secondly, Chen et al. (2021), in a more recent meta-analysis, provided evidence that effectuation logic, as a whole, generally relates positively to firm performance and that the relationship is dependent on firm age and industry type. For example, the study found stronger performance with effectuation among older firms, high-tech industries and emerging markets (Chen et al., 2021). Yun Zhang et al. (2022) examines the impact of both causation and effectuation and

found a positive relationship between the two decision-making logics and firm performance. It also found evidence that the relationship between effectuation and firm performance is slightly stronger in general than that between causation and firm performance; however, similarly to Chen et al. (2021), the study found that contextual factors such as firm age and size alter the relationship. For example, the study found that new firms and small firms may benefit more from causation than effectuation, this finding; however, is inconsistent with the prevailing extant literature (Zhang et al., 2022). Despite the inconstancies and gaps in the literature around moderating and contextual influences, the general consensus of the extant literature is that either decision-making logic, when employed, is positively correlated to firm performance (An et al., 2019; Chen et al., 2021; Read et al., 2009; Zhang et al., 2022). In an effort to contribute to the existing literature through the examination of the moderating and contextual influences on the decision-making logic / firm profitability relationship this study will apply what is known concerning firm level strategic orientations, specifically those dealing with strategic decision making. A sample of relevant studies referencing causation and effectuation are cited in Table 3.

Table 3: Sample of Relevant Studies Referencing Causation and Effectuation

Study	**Journal**	**Sample**	**Findings**
S. D. Sarasvathy (2001)	Academy of management Review	N/A	Proposed framework for Effectuation and Causation.
S. D. Sarasvathy et al. (2001)	N/A	64	Expert entrepreneurs utilize effectuation more than causation while MBA students utilize causation more than effectuation.
Dew et al. (2009); (S. Sarasvathy et al., 2014)	Journal of Business Venturing	64	Expert entrepreneurs utilize effectuation more than causation while

			novices utilize causation more than effectuation.
Read et al. (2009)*	Journal of business venturing	9,897	All dimensions of effectuation, with the exception of affordable loss are significantly and positively related to firm performance.
Chandler et al. (2011); Read et al. (2009)	Journal of business venturing	307	Develops and validates quantitative measures of causation and effectuation.
Brettel et al. (2012); Chandler et al. (2011); Chen et al. (2021)	Journal of business venturing	123	In R&D firms, effectuation is positively related to performance when innovativeness is high while causation is positively related to performance when innovation is low. Further a new measure for causation and effectuation are introduced.
S. Sarasvathy et al. (2014); Zhang et al. (2022)	Entrepreneurship Theory and Practice	N/A	Overview of applying effectuation theory to international entrepreneurship
An et al. (2019)	Small Business Economics	305	Develops six solutions that explain the entrepreneurial processes in high-performing firms. Modifies Brettel et al. (2012) measure for general use outside of R&D firms.
Chen et al. (2021)*	International Journal of Entrepreneurial Behavior & Research	12,747	Effectuation generally relates positively to firm performance and that the relationship is dependent on firm age and industry type
Zhang et al. (2022)*	Journal of Business & Industrial Marketing	11,600	A positive correlation causation and effectuation and firm performance. The relationship between effectuation and firm performance is slightly stronger
* Indicates Meta-analysis			

Strategic Orientation

In addition to the decision-making logic of a company, the strategic orientation of the company also has a major impact on how owners / managers arrive at decisions. The strategic orientation of a business is a function of the general emphasis and goals of the firm. Strategic

orientation has been defined by extant literature as an organizational level disposition; it has also been characterized as being more of an overall organizational strategic posture. From this view strategic orientation refers to a firm's pattern of behavior in response to its market environment as it seeks to maximize performance and achieve competitive advantage in the marketplace (Kumar et al., 2012). Extant literature has recognized several dispositions or strategic orientations among small businesses. Examples of these orientations include, but are not limited to: learning orientation (The degree to which the business emphasizes the acquisition and use of knowledge), market orientation (The degree to which customer value and market information are prioritized by the firm), brand orientation (the degree to which consumer value and market data are prioritized by the business), and, entrepreneurial orientation (the way the firm plans and focuses on the decision-making process) (Laukkanen et al., 2013). As the strategic disposition of entrepreneurial orientation is more closely linked to decision-making, it will serve as a primary focus of this paper (Jeffrey G. Covin & Wales, 2012; Karami & Tang, 2019).

Entrepreneurial Orientation

The construct of entrepreneurial orientation was conceptualized in 1983 by Danny Miller and by Covin and Slevin in 1989; all building on the work of Mintzberg (1973) who, in theorizing about strategic decision-making, presented a concept of an entrepreneurial strategy-making approach where the managerial nature can be characterized by actively searching for new opportunities in uncertain markets where growth could be achieved. Since its inception entrepreneurial orientation has become a critical construct in the entrepreneurship literature by clarifying what it means for a firm to be strategically entrepreneurial in nature (Jeffrey G. Covin & Wales, 2012; William John Wales, 2015). In general, entrepreneurial orientation is conceived

as a tendency for organizational decision-making that favors entrepreneurial practices or new market entry (Karami & Tang, 2019; William J. Wales et al., 2020). Extant literature proposes that entrepreneurial orientation is a construct that encompasses a continuous variable (or set of variables) that can be measured at the organizational level; therefore, making it possible to quantify all organizations along a spectrum, regardless of the organizations size, age, or structure. The study of entrepreneurial orientation allows one to label any organization as being more or less "entrepreneurial" than another (Jeffrey G. Covin & Wales, 2012; William John Wales, 2015). It is important to understand that, entrepreneurial orientation is demonstrated by persistent activities deemed as entrepreneurial; and, it is this consistent pattern of behavior that signifies that the displayed entrepreneurship is not an abnormality but a state of being for the organizational environment. Despite this understanding of the nature of entrepreneurial orientation, most studies into the construct have used a snapshot approach rather than attempting to measure entrepreneurial orientation at multiple points in time. As a result, the direction of causality continues to remain ambiguous (William John Wales, 2015).

The description of entrepreneurial orientation has been changed over time by scholars in ways that modify both the conceptualization of its manifestation and its measurements. For example, a common definition of entrepreneurial orientation is as follows: "the degree to which a firm is innovative, proactive, risk taking," another common definition also is expanded to include two additional dimensions of "aggressiveness" and "autonomy," additionally, a third definition includes the modifier "radical innovations." This inconsistency creates challenges for researches as a firm may be evaluated as having a high degree of entrepreneurial orientation under the three-dimensional model but low degree of entrepreneurial orientation under the five-dimensional model. Recent literature has sought to clarify these inconsistencies by advocating for consistent

use of the afore mentioned three-dimensional model (George & Marino, 2011). The prevailing definitions for entrepreneurial orientation are listed in Table 4.

Table 4: Definitions of Entrepreneurial Orientation

Mintzberg (1973)	"In the entrepreneurial mode, strategy-making is dominated by the active search for new opportunities" as well as "dramatic leaps forward in the face of uncertainty" (p. 45).
Miller (1983)	"An entrepreneurial firm is one that engages in product-market innovation, undertakes somewhat risky ventures, and is first to come up with 'proactive' innovations, beating competitors to the punch" (p. 771).
Jeffrey G Covin and Slevin (1988)	"Entrepreneurial firms are those in which the top managers have entrepreneurial management styles, as evidenced by the firms' strategic decisions and operating management philosophies. Non-entrepreneurial or conservative firms are those in which the top management style is decidedly risk-averse, non-innovative, and passive or reactive" (p. 218).
G Tom Lumpkin and Dess (1996)	"EO refers to the processes, practices, and decision-making activities that lead to new entry" as characterized by one, or more of the following dimensions: "a propensity to act autonomously, a willingness to innovate and take-risks, and a tendency to be aggressive toward competitors and proactive relative to marketplace opportunities" (pp. 136–137).
Cools and den Broeck (2007)	"Entrepreneurial orientation (EO) refers to the top management's strategy in relation to innovativeness, proactiveness, and risk taking" (p. 27).
Anderson, Kreiser, Kuratko, Hornsby, and Eshima (2015)	"...entrepreneurial firms are those that exhibit innovativeness (the introduction of new products, processes, and business models), proactiveness (actively entering new product/market spaces and seeking market leadership positions), and risk taking (a willingness among strategic decision makers to contribute resources to projects with uncertain outcomes)" (p. 1581)

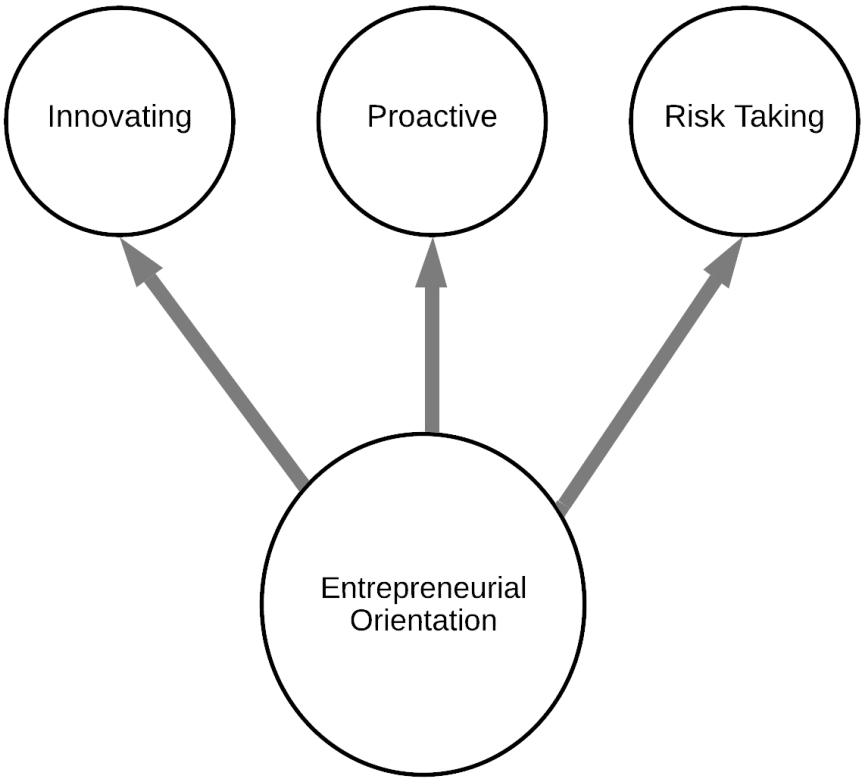

Figure 2: Elements of Entrepreneurial Orientation (George & Marino, 2011)

Despite the significant amount of research that has gone into the concept of entrepreneurial orientation over the past forty years, there is little research that explains the relationship between entrepreneurial orientation and decision-making logics in small businesses, specifically (Ralph I. Williams Jr. et al., 2018). In addition, there are many contradictions about how to thoroughly identify, conceptualize and evaluate entrepreneurial orientation. Although entrepreneurial orientation is generally viewed as an organizational-level process it can be manifested at various levels throughout an organization to include the top-management style, structural organizational configuration, and through the initiatives of the organization (W. Wales, Monsen, & McKelvie, 2011; William J. Wales et al., 2020). Though understood as an

organizational construct, evidence shows that in small businesses there exists a strong connection between entrepreneurial orientation and individual behaviors. Additionally, studies show that small business performance and organizational outcomes are affected by the personal traits of the owners / managers (Khedhaouria et al., 2014). With this strong connection between organizational level and individual level behavioral constructs in mind, it has been postulated that a multilevel analysis to better understand how the individual characteristics of founders, owners, and managers in small and medium businesses transform into the organizational level entrepreneurial orientation. It's further suggested that effectuation theory may offer a better understanding as it seeks to explain the role of the owner / manager's existing resources (such as individual values, belief sets, knowledge capital, personal experience, relationships, etc.) in the formation of opportunities in small business firms with high levels of entrepreneurial orientation (Karami & Tang, 2019). Through the lens of effectuation theory, Laskovaia et al. (2019) argued that entrepreneurial orientation may play a moderating role in the relationship between decision-making logics and firm performance. A limitation of Laskovia et al. (2019) is that they focused exclusively and specifically on Russian firms in economic crises and delt with mature firms, as a result generalizability to other contexts cannot be accurately assessed (Laskovaia, Marino, Shirokova, & Wales, 2019). As the literature currently stands the potential for interactive relationships between entrepreneurial orientation and decision-making logics is under-studied.

Developing a better understanding of the relationship between entrepreneurial orientation and firm performance is the general goal of researchers who study the subject. Evidence suggests that entrepreneurial orientation has a positive relationship with firm growth, innovation, profitability, and general performance (Karami & Tang, 2019; Laukkanen et al., 2013). Additionally, entrepreneurial orientation has been shown to positively moderate the relationship

between a comprehensive strategic approach and firm performance (Ralph I. Williams Jr. et al., 2018). Although the relationship between effectuation and entrepreneurial orientation is less studied there is some evidence to suggest that effectuation moderates the strength of the positive relationship between entrepreneurial orientation and performance, there is insufficient research to draw any conclusion on the relationship and synergistic effects of effectual thinking and entrepreneurial orientation, or to make any assessments around the combined impact on small business relative profitability (Mthanti & Urban, 2014; Smolka et al., 2018).

Less research has been done in the area of entrepreneurial orientation as it specifically applies to small businesses; however, positive relationships with entrepreneurial orientation and small business performance have been identified (Karami & Tang, 2019). When entrepreneurial orientation is viewed as a single unidimensional construct, many researchers have identified a likely positive relationship between entrepreneurial orientation and small firm performance while others have identified mixed results (Jeffrey G Covin & Covin, 1990; Jeffrey G Covin & Slevin, 1989; Rauch, Wiklund, Lumpkin, & Frese, 2009; Wiklund & Shepherd, 2005). Additionally, when entrepreneurial orientation is analyzed along its three individual components of innovativeness, proactiveness, and risk-taking then evidence of a differing relationship with firm performance is expressed, especially as it pertains to small businesses. Innovativeness and proactiveness, for example, has been shown to display a mostly positive U-shaped relationship with small firm performance. Risk taking (when viewed in isolation), however, has been shown to have a mostly negative U-shaped relationship with small business performance (Kreiser et al., 2012).

It has been pointed out that a firm's entrepreneurial orientation may not necessarily translate into entrepreneurial activities. In addition, researchers have indicated that

entrepreneurial orientation alone is insufficient for improving firm performance without a quality business strategy for implementation and/or proper use of human capital and management resources; therefore, understanding performance implications may necessitate a better understanding of how owners / managers implement specific entrepreneurial actions (Kollmann & Stöckmann, 2014; Lechner & Gudmundsson, 2012; Messersmith & Wales, 2011). With the understanding that emotion influences thought and thought influences action, behavior scholars have postulated that affect has an important role with regard to entrepreneurial decision-making and its impact on outcomes (Robert A Baron, 2008; Robert A. Baron & Ensley, 2006).

Emotion / Affect

Affect, defined as an individual's feelings and emotions, is a construct of interest as it pertains to strategic decision making especially with entrepreneurs and small business owners (Robert A Baron, 2008; Robert A. Baron & Ensley, 2006). Current research provides evidence that affect influences aspects of individual cognition in organizational environments (Robert A Baron, 2008; Borman, Penner, Allen, & Motowidlo, 2001; Staw, Sutton, & Pelled, 1994). Findings show that small business owners are typically more emotionally connected to their firms (Culkin & Smith, 2000). Additionally, affect has been shown to impact individual cognition, thinking and decisions (Robert A Baron, 2008; Forgas & George, 2001). Recent literature has explored the relationship between affect and entrepreneurial performance and has found a statistically significant relationship between positive affect and entrepreneurial performance (Fodor & Pintea, 2017).

Extant literature provides evidence that affect is likely to have a strong influence on cognition and cognitive behaviors in environments where reliance on decision-making scripts or

procedures is minimal (Robert A Baron, 2008; Forgas, 1995, 2008; Forgas & George, 2001). The environments in which entrepreneurs and small business owners' function can often be characterized as unpredictable or volatile; either due to the newness of the market, the newness of the firm, or the resource scarcity and low levels of strategic capability that exist in small businesses (Brinckmann et al., 2010; Lichtenstein et al., 2006; Runyan & Covin, 2019). In entrepreneurial environments it is often the case that industry "best practices" have yet to be developed and in many small business situations industry best practices may be inaccessible or unapplicable to the decision makers due, again, to higher resource scarcity (Runyan & Covin, 2019). Owners / managers in these more volatile operational environments are less able to rely on learned heuristic behavioral or decision-making scripts or procedures as would be the case in more stabilized environments (Robert A Baron, 2008).

As stated, there is there evidence that affect influences cognition generally and that influence would be magnified in small business and entrepreneurial environments (Robert A Baron, 2008; Forgas, 2008). Beyond this general relationship, affect has also been found to influence specific aspects of cognition that directly relate to entrepreneurship and business ownership (Robert A Baron & Shane, 2007; Forgas, 2002; Forgas & George, 2001). For example, affect has been shown to strongly influence creativity which influences entrepreneurial behaviors such as opportunity recognition / opportunity creation and entrepreneurial orientation (Robert A Baron, 2006; Isen, 1993; Khedhaouria, Gurău, & Torrès, 2015). Other examples include the influence of affect on persuasion which is critical for resources and capital acquisition (Mackie & Worth, 1989). A final example would be in the area of individual decision making and judgments which is critical in the areas of management, the application of

organizational decision-making processes, as well as strategic planning (Isen, 1993, 2001, 2002; Isen & Means, 1983).

Given the afore mentioned evidence of an increased emotional connection among small business owners and small business entrepreneurs, coupled with the scholarly evidence that affect has strong relationships not only with cognition generally but also with various aspects of the entrepreneurship process and business organizational processes it can be discerned from the literature that affect has significant relevance to the study of small business and entrepreneurial owner / manager cognitive processes (Robert A Baron, 2004, 2008).

Uncertainty Avoidance

As started in the previous section, evidence suggests that the influence of affect may be more pronounced under situations of high uncertainty (Robert A Baron, 2006). Given this, the way in which owner / managers deal with uncertainty while engaging in either causal or effectual decision-making is relevant. Both effectuation and causation have been shown to positively impact small businesses (Smolka et al., 2018). Although, there is evidence that effectual thinking could benefit small firms and new ventures more than causal thinking, there is plenty of evidence to support the idea that either decision-making logic is beneficial (An et al., 2019; Ralph I. Williams Jr. et al., 2018; Ralph I. Williams Jr. et al., 2018). There is also evidence that despite causation being positively correlated with small business performance, this positive relationship is much less pronounced when the firm is operating in an adverse market situation. Evidence also suggest that effectuation, though less beneficial in times of market stability, significantly enhances small business performance in situations of market uncertainty (Shirokova et al., 2020). Given that high uncertainty is often an unavoidable reality, with small

businesses and entrepreneurial firms, the degree to which the owner / manager seeks to avoid uncertainty in decision-making is also relevant.

Hypotheses and Model Overview

As previously stated, the objective of this study is to better understand which decision-making logic approach has the higher likelihood of maximizing small firm relative profitability given moderating constructs. To accomplish this objective a model is proposed that first establishes the main hypotheses, then examines the potential moderating influences of individual emotions and the firm's strategic orientation around decision-making. The hypotheses are presented in three sections. The first section addresses the direct relationship between effectuation and the firm's relative profitability as well as the direct relationship of causation and the firm's relative profitability (H1 and H2). The second section addresses the moderating role of small business enterprises' entrepreneurial orientation on both the relationship between relative profitability and both decision-making logics (H3, H4, H5, H6, H7, H8). Finally, the third section addresses the moderating role of owners' / managers' emotions on the same two relationships (H9, H10, H11, H12). The proposed model and hypotheses are represented in Figure 3.

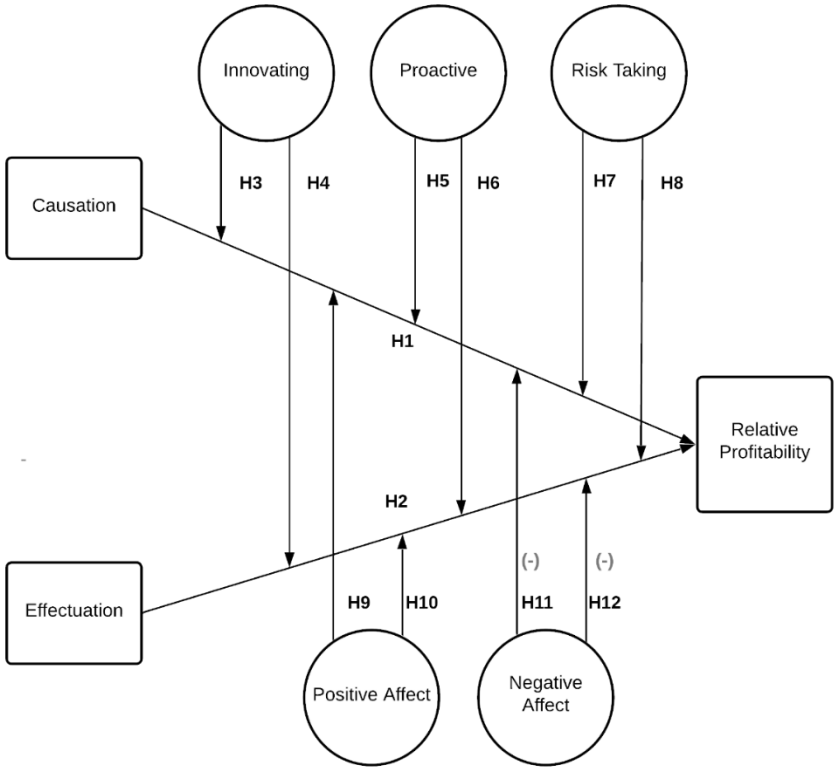

Figure 3: Proposed Model

Hypotheses: Causation and Effectuation

As noted earlier, there is empirical evidence that strategic behaviors related to either effectuation or causation positively correlate with firm performance (Chen et al., 2021; Read et al., 2009; Smolka et al., 2018; Zhang et al., 2022). This study uses this relationship as the foundation of its model. Some effectuation theorists evaluate effectuation and causation as being on opposite ends of a spectrum as opposed to being two independent constructs (McKelvie et al., 2019; Wiltbank et al., 2009). This study; however, like several others, will examine these decision-making logics as two constructs to facilitate understanding of the practical effects of the phenomena (Brettel et al., 2012). Causal decision-making logic behavior is closely associated with traditional decision-making methods related to strategic business planning (Brinckmann et

al., 2010; S. D. Sarasvathy et al., 2001). Extant literature would suggest that such approaches relate positively with firm performance, although the details of this relationship and best application is debated, the general consensus holds that causal logic positively influences firm performance (Brinckmann et al., 2010; Karel et al., 2013; Smolka et al., 2018; Zhang et al., 2022). Additionally firm performance is associated with firm profitability. Various studies employ different definitions for firm performance, but generally speaking, performance and profitability are often closely related, independent of the specific definitions used (Brinckmann et al., 2010; Powell, 1992). In several studies profitability is used as part of a composite to measure performance (Lange et al., 2007). In other studies, profitability measures are exclusively used to define performance (Read et al., 2009). Given this, drawing an implied tandem connection between firm performance and firm profitability is reasonable (Brinckmann et al., 2010). The logical expectation, given the available research, is that causation is positively associated with profitability. As the focus of this study is centered specifically on the relative profitability of small business and entrepreneurial firms, as opposed to absolute or general profitability, it will examine, specifically, the firm's profitability as compared to its peers or competitors.

The above reasoning is not only sound, as being the logical implications of available literature, it is also intuitive. If the following example is considered; the owner of a funeral home business in Atlanta, GA who employs a causal decision-making logic might spend much of his business planning time analyzing past performance trends for the purpose of making predictions and forecasts for the future. The owner may employ accountants and other consultants to provide predictive analytics and the owner would put a lot of trust in those provided analytics (Dew et al., 2009; S. D. Sarasvathy et al., 2001). Additionally, he may also

set revenue goals based on those forecasts and develop a systematic plan to accomplish those specific goals. The business goals would drive the firm's activities (Dwivedi & Weerawardena, 2018; S. Sarasvathy et al., 2014). The owner may seek to avoid uncertainty by repeating plans that worked in the past, or implementing industry best practices from affiliated industry associations or other funeral home businesses (Wiltbank et al., 2009). Most of the business owner's budgeting would be based on expected returns given the predictions. This business management approach is consistent with formal business training (S. D. Sarasvathy, 2001; S. D. Sarasvathy et al., 2001). It is very reasonable to assume that this funeral home owner would experience greater profitability than another funeral home owner in a similar market who made decisions haphazardly, kept poor financial records and did not set goals and work out how to accomplish them (An et al., 2019; Ralph I. Williams Jr. et al., 2018). Given the established correlations between causation and performance and how performance is generally related to relative profitability; and given the implied intuitive relationship between causal decision-making logic behaviors and positive outcomes the following is hypothesis is proposed:

H1: Causation is positively correlated with small business relative profitability.

Additionally, effectual decision-making logic has also been shown to positively influence firm performance. Although the context under which one logic outperforms the other is still being investigated the general consensus of recent literature is that effectual logic also positively influences firm performance (An et al., 2019; Chen et al., 2021; Mthanti & Urban, 2014; Read et al., 2009; Zhang et al., 2022). As noted above; measures of performance and profitability are often similar. Therefore, the same theoretical logic applied to the impact of causation on relative profitability is also applied to the impact of effectuation on firm relative profitability. Again, as the focus of this study is centered specifically on the relative profitability of small business and

entrepreneurial firms, it will examine, specifically, the relationship between effectuation and relative profitability. As with causation the logic applied to the relationship between effectuation and relative profitability can be examined not only through the lens of existing literature but also intuitively. For example, a heavy construction equipment dealer in Mt. Airy, NC who employs an effectual decision-making logic might spend much of his business planning time thinking about what assets he has and what social connections he has (Dew et al., 2009; S. D. Sarasvathy et al., 2001). The owner may focus on establishing partnerships with dealers in other markets or with compatible firms such as used car dealers, or land developers. This owner may also employ accountants and other consultants to provide analytics but would use this information for reference rather than for predictive decision making; the owner would not expect the future to be an extension of the past (S. Sarasvathy et al., 2014). If anything, this owner would likely use any information gathered from past performance to attempt to change or otherwise exert control over future scenarios (Dew et al., 2009; S. Sarasvathy et al., 2014; Wiltbank et al., 2009). Revenue goals would not be a high priority instead this owner would seek to better understand his current capacity and attempt to maximize what he can do with what he has available. As mentioned before, he might focus on leveraging partnerships. He could partner with out-of-state or international dealers to find construction equipment that his local competition cannot sell (S. Sarasvathy et al., 2014; S. D. Sarasvathy, 2001). He may also work with a web designer and a small trucking company to find a way to ship low-cost equipment to customers in higher priced markets. He might also use his equipment mechanic to provide auto maintenance to non-construction customers. In every aspect the owner will seek to utilize all of his capacity to provide goods and services in any way that he can, then find a way to increase that capacity (S. Sarasvathy et al., 2014). Uncertainty avoidance would not be an issue for this owner he would

move in and out of service offerings, trying new things as he goes (Wiltbank et al., 2009). Most of the business owner's budgeting would be based on affordable loss rather than predictive gain. In other words, the owner would give thought to assets he cannot lose and would not risk them even if the potential reward might justify such a risk under causal decision-making logic (Dew et al., 2009; S. D. Sarasvathy, 2001; S. D. Sarasvathy et al., 2001). This business management approach, although not consistent with formal business training, has been shown to be very effective with expert entrepreneurs (S. D. Sarasvathy et al., 2001). Given the flexibility that such an approach provides it is easy to see why such thinking has yielded positive results. Despite effectuation not being consistent with classical approaches it is a valid decision-making approach. It is very reasonable to assume that this heavy construction equipment dealer would experience greater relative profitability than another heavy construction equipment dealer in a similar market who made decisions whimsically with no structured thought to expanding resources, assets, or networks (An et al., 2019; Read et al., 2009). Given the established correlations between effectuation performance, and the relationship between how performance is generally related to profitability, the following is hypotheses are proposed:

H2: Effectuation is positively correlated with small business relative profitability.

Hypotheses: Entrepreneurial Orientation (Innovating, Proactiveness, & Risk Taking)

This study defines entrepreneurial orientation according to the previously discussed three dimensions of innovation, proactiveness and risk-taking (Jeffrey G Covin & Slevin, 1989). As evidence shows that each aspect of entrepreneurial orientation may have unique interactive effects it is necessary to evaluate innovation, proactiveness and risk-taking independently (Kreiser et al., 2012). As noted previously there are limited studies on the interactive effects of

entrepreneurial orientation on decision-making logics. Other than the scholarly consensus that entrepreneurial orientation and decision-making logics relate to decision making; the interaction between the organizational construct of entrepreneurial orientation and the individual constructs of effectuation and causation has yet to be fully studied. As a consequence, a gap exists in this area of decision-making theory. There is, however, some scholarly evidence that entrepreneurial orientation positively moderates the relationship between causation and firm performance (Laskovaia et al., 2019). The proposed hypothesis in this section will build on this evidence via investigation of the three specific constructs that make up entrepreneurial orientation; namely, innovation, proactiveness, and risk-taking (Jeffrey G Covin & Slevin, 1989).

Organizational innovation (a component of entrepreneurial orientation) has been shown to generally enhance firm outcomes when viewed through the lens of traditional strategic-decision making under causal logic (Lomberg et al., 2018; Putnins & Sauka, 2019). One can reasonably postulate that in the presence of an innovative organizational environment that an owner / manager employing a causal decision-making logic would likely be more open to experimenting with various service offerings. They may set goals around developing new offerings. They may also allocate more of the budget to market testing (Dew et al., 2009; S. D. Sarasvathy et al., 2001). As a result, they may find niche markets and secure a competitive advantage. This would have the result of increasing the firm's relative profitability (Barney & Wright, 1998; Powell, 1992). In this way the typical causation behaviors and their associated impact on the firm's relative profitability are enhanced given the firms innovative nature. Conversely an owner / manager may employ a causal decision-making logic and exhibit lower levels of innovation. He/she would not be prone to developing goals around new offerings nor would the owner / manager prioritize market testing as a budget item (Dew et al., 2009; S.

Sarasvathy et al., 2014). The owner / manager is still exhibiting causal logic however those causal behaviors are not being enhanced by innovation. Therefore, the increased effect of causation on firm profitability would not be present given the absence of innovation. Within the context of the examples above it can be intuitively reasoned that the presence of innovation within the firm strengthens the magnitude of existing positive influences of the casual decision-making logic of the owner / manager on firm outcomes, in this case the outcome of profitability. Conversely the absence of innovation within the firm diminishes the magnitude of existing positive influences of casual decision-making logic of the owner / manager on firm outcomes (Lomberg et al., 2018). The logical assertion; therefore, is that the positive relationship between causation and profitability is strengthened as a consequence of firm innovation. With this reasoning, this paper hypothesizes that in the presence of higher levels of innovation the relationship between causal decision-making logic and small business relative profitability will be enhanced. Therefore, the following hypothesis is proposed:

H3: The entrepreneurial orientation dimension of innovating positively moderates the relationship between causation and small business relative profitability.

Entrepreneurial orientation has been found to have a positive relationship with constructs related to effectuation dimensions and firm performance (Jeffrey G. Covin & Wales, 2012; Khedhaouria et al., 2014; Mthanti & Urban, 2014). Although, direct relationships between aspects of effectuation and innovation have been observed, the relationship between decision-making logics and performance, and, specifically, profitability is somewhat understudied (Roach, Ryman, & Makani, 2016). There also appears to be possible relationships between the dimensions of entrepreneurial orientation and the dimensions of effectuation. For example, a positive relationship between entrepreneurial orientation and networking (a component of

effectuation) has been observed. Also, innovation (a component of entrepreneurial orientation) has been shown to be related positively with being means driven and leveraging contingency (both components of effectuation) (Karami & Tang, 2019; Roach et al., 2016). Given the state of the current literature, one might make a reasonable assertion that the presence of entrepreneurial orientation in a firm increases the likelihood of the owner / manager's exhibiting an effectual decision-making logic, or perhaps vice versa; there is evidence to support such an assertion, specifically in high-tech firms (Mthanti & Urban, 2014). Although this assumption may be sound, it not the focus of this study's research question; given that firms whose managers happen to use causal decision-making logic and have high levels of entrepreneurial orientation may also benefit from increased performance as a result.

The question of possible moderating influences of innovation on the relationship between decision-making logic and relative profitability relationships can be reasoned given a hypothetical small business owner who engages in effectual decision-making logic. Such an owner / manager would be means driven and would likely build a strategic plan around investigating networking and partnership opportunities (Dew et al., 2009; S. Sarasvathy et al., 2014; S. D. Sarasvathy, 2001). In the presence of high levels of innovation, the business owner / manager would also be more likely have a stronger motivation to examine unique product or service offerings (Blauth, Mauer, & Brettel, 2014; Kollmann & Stöckmann, 2014). This would likely influence the types of strategic partners the effectual innovator seeks (Laforet, 2008; Roach et al., 2016; S. Sarasvathy et al., 2014). Within the context of the examples above it can be naturally reasoned that the presence of innovation within the firm strengthens the degree of the already present positive influences of the effectual decision-making logic of the owner / manager on firm outcomes, specifically the outcome of profitability. The positive impact of the

effectuation on the firm's relative profitability is thereby enhanced by the increased innovation. Conversely the absence of innovation within the firm would logically decrease the magnitude of existing positive influences of the effectual decision-making logic of the owner / manager on firm outcomes (Lomberg et al., 2018). The logical assertion; therefore, is that the positive relationship between effectuation and profitability is strengthened as a consequence of firm innovation. With this reasoning, this paper hypothesizes that in the presence of higher levels of innovation the relationship between effectual decision-making logic and small business relative profitability will be enhanced. Therefore, the following hypothesis is proposed:

H4: The entrepreneurial orientation dimension of innovating positively moderates the relationship between effectuation and small business relative profitability.

Organizational proactiveness as it relates to entrepreneurial orientation has also been shown to generally enhance firm outcomes when viewed through the lens of traditional strategic-decision making under causal logic (Lomberg et al., 2018; Putnins & Sauka, 2019). Although the interactive relationships around proactiveness and causation as it relates to relative profitability is, as of yet, untested, it can be reasoned that proactive firms with owner / managers who exhibit a goals-driven predictive logic (causation) might center some goals around activities that enable the firm to have a 'first mover advantage' in many situations (Lechner & Gudmundsson, 2012; G Tom Lumpkin & Dess, 1996; S. D. Sarasvathy, 2001). Causation lends itself to being predictive in nature (Dew et al., 2009; Ralph I. Williams Jr. et al., 2018). Adding the characteristics of proactiveness may lead the owner / manager to seek to predict the actions of their competition through market analysis and adjust strategic plans based on these predictions (Lechner & Gudmundsson, 2012; G Tom Lumpkin & Dess, 1996). Conversely an owner / manager who applies causal logic in a less proactive business environment may not employ

predictive analytics to out maneuver their competition but simply to strengthen their business internally (Ralph I. Williams Jr. et al., 2018). In this way the proactive nature of the firm enhances the impact of the causation behavior on outcomes. It can therefore be intuitively reasoned that the presence of organizational proactiveness strengthens the magnitude of existing positive influences of the casual decision-making logic of the owner / manager on firm outcomes, in this case the outcome of profitability. Conversely the absence of proactiveness within the firm diminishes the magnitude of existing positive influences of casual decision-making logic of the owner / manager on firm outcomes (Lomberg et al., 2018). The logical assertion; therefore, is that the positive relationship between causation and profitability is strengthened as a consequence of firm proactiveness. Given this rational, this paper hypothesizes that in the presence of higher levels of proactiveness the relationship between causation and small business relative profitability will be enhanced. Therefore, the following hypothesis is proposed:

H5: The entrepreneurial orientation dimension of proactiveness positively moderates the relationship between causation and small business relative profitability.

Although the interactive relationships around proactiveness and effectuation as it relates to relative profitability is, as of yet, untested, it can be reasoned that proactive firms with owner / managers who exhibit a means-driven control logic (effectuation) might attempt to gain a 'first mover advantage' by utilizing partnerships and networking (Dew et al., 2009; S. D. Sarasvathy et al., 2001). Effectuation does not focus as much on prediction but it is characterized as having a control aspect where opportunities are perceived as being created rather than found (Maine, Soh, & Dos Santos, 2015). With this in mind, one could reasonably expect an effectual business owner / manager operating in a proactive situation to maximize their resources (available means)

and the available resources of their strategic network with the specific intent of out maneuvering their perceived competition (Jeffrey G Covin & Slevin, 1989; Dew et al., 2009). Conversely an owner / manager who applies effectual logic in a less proactive business environment may not have the inclination to build a network around securing first mover advantage but rather the owner / manager may simply be focused on providing the best product /service they can with what they have (Runyan & Covin, 2019). Given this illustration, it can be intuitively reasoned that the presence of organizational proactiveness strengthens the magnitude of the existing positive influences of the effectual decision-making logic of the owner / manager on firm outcomes, specifically the outcome of profitability. On the other hand, the absence of proactiveness within the firm logically diminishes the magnitude of the existing positive influences of effectual decision-making logic of the owner / manager on firm outcomes (Lomberg et al., 2018). The reasonable assertion, in this case, is that the positive relationship between effectuation and profitability is strengthened as a result of firm proactiveness. Given this rational, this paper hypothesizes that in the presence of higher levels of proactiveness the relationship between effectuation and small business relative profitability will be enhanced. Therefore, the following hypothesis is proposed:

H6: The entrepreneurial orientation dimension of proactiveness positively moderates the relationship between effectuation and small business relative profitability.

Organizational risk-taking has also been shown to enhance firm outcomes when viewed through the lens of traditional strategic-decision making under causal logic (Lomberg et al., 2018; Putnins & Sauka, 2019). Under causation risk is generally managed under a predictive gains approach (Dew et al., 2009). In other words, the owner / manager will assess risk based on probability of expected returns (S. D. Sarasvathy et al., 2001). With this mind-set in place the

reasonable expected causal behaviors of an owner / manager in a risk-taking firm environment might include forecasting profits based on past actions and evaluating which high risk decisions have the potential for high ROI (Dew et al., 2009; Ralph I. Williams Jr. et al., 2018). The sentimentality might be 'does the potential reward justify the risk'. This type of risk acceptance has been shown to be positively related to improved decision outcomes (Jansen et al., 2011). The owner / manager might employ predictive analytics in an effort to predict future returns on investments of time and assets (Ralph I. Williams Jr. et al., 2018). Courses of action would be taken based on the potential profitable yield (S. Sarasvathy et al., 2014; S. D. Sarasvathy et al., 2001; Wiltbank et al., 2009). In this way, combining causation with risk taking would have the effect of increasing the potential for positive outcomes, including relative profitability. The risk-taking decision-making environment would influence the causal behaviors of the owner / manager. Conversely an owner / manager who applies causal logic in a less risk accepting business environment my not focus on using predictive analytics for the purpose of risk evaluation for the purposes of profit maximization. Instead, the owner / manager might be risk averse and use prediction to avoid risk completely (Dew et al., 2009; G Tom Lumpkin & Dess, 1996). In doing so, the owner / manager may fail to recognize potentially profitable opportunities (Maine et al., 2015). In this situation analytics may be used primarily to mitigate potential threats or maximize firm strengths (Kumar et al., 2012). Again, the risk-taking profile of the business influences the way in which the owner/manager's causal behaviors are manifested. Given the examples, it can be naturally reasoned that the risk-taking nature of the firm strengthens the magnitude of existing positive influences of the casual decision-making logic of the owner / manager on the firm outcome of relative profitability. Conversely the absence of a risk-taking nature in the firm lessens the magnitude of the existing positive

influences of casual decision-making logic of the owner / manager on firm outcomes (Lomberg et al., 2018). The logical claim, given the premise, is that the positive relationship between causation and profitability is strengthened as a consequence of a firm's risk-taking profile. In other words, the risk-taking nature of the firm enhances impact of the causation behaviors on the outcomes. Given this rational, this paper hypothesizes that in the presence of higher levels of risk taking the relationship between causation and small business relative profitability will be enhanced. Therefore, the following hypothesis is proposed:

H7: The entrepreneurial orientation dimension of risk-taking positively moderates the relationship between causation and small business relative profitability.

The same logic applies to an effectual owner / manager in a risk-taking firm. A key difference here however is that, under effectuation, risk is generally managed under an affordable loss approach (Dew et al., 2009). In other words, the owner manager will not risk that which cannot be lost regardless of the potential ROI (S. D. Sarasvathy et al., 2001). The sentimentality might be 'a bird in the hand is worth two in the bush'. Although this mindset may appear to be risk averse by nature that is not necessarily the case. It simply means that the owner / manager will likely take carful inventory of the assets that cannot be highly leveraged and those that can (S. Sarasvathy et al., 2014). Therefore, the reasonable expected effectual behaviors of an owner / manager in a risk-taking firm environment would include paying careful attention to which assets are expendable and which are not, then leveraging the expendable assets as much as possible, or possibly seeking out the ability to leverage expendable resources for the firm's gain (Dew et al., 2009; S. D. Sarasvathy et al., 2001). This type of risk acceptance may seem compartmentalized but does not necessarily decrease the overall level of risk-taking in the firm. As the owner / manager maximizes the firm's risk taking, in pursuit of opportunity creation,

within the context of effectuation he/she may likely increase the potential for positive outcomes, including relative profitability (Maine et al., 2015). In this way, the risk-taking nature of the firm enhances the impact of the effectual behaviors on the outcomes. Conversely an owner / manager who applies effectual logic in a less risk accepting business environment may not clearly define and sequester assets that cannot be lost. Instead, they may seek not to lose any assets. In this way they would avoid risk completely (Brustbauer, 2014). Therefore, in a high-risk organizational environment the effectual owner-manager may maximize their opportunity creation potential whereas in a low-risk organizational environment the owner-manager's potential for opportunity creation is reduced (Brustbauer, 2014; G Tom Lumpkin & Dess, 1996; Rauch et al., 2009). Within the framework of the posed explanation, it can be intuitively reasoned that the presence of higher risk-taking within the firm strengthens the magnitude of existing positive influences of the effectual decision-making logic of the owner / manager on firm outcomes, in this case the outcome of relative profitability. Conversely the absence of risk-taking within the firm diminishes the magnitude of existing positive influences of the effectual decision-making logic of the owner / manager on firm outcomes (Lomberg et al., 2018). The logical assertion; therefore, is that the positive relationship between effectuation and profitability is strengthened as a consequence of the firm's risk-taking profile. Given this rational, this paper hypothesizes that in the presence of higher levels of risk taking the relationship between effectuation and small business relative profitability will be enhanced. Therefore, the following hypothesis is proposed:

H8: The entrepreneurial orientation dimension of risk-taking positively moderates the relationship between effectuation and small business relative profitability.

Hypotheses: Positive and Negative Affect

The individual owners / managers of small business and micro-entrepreneur firms have a significantly increased influence over the firm in its entirety when compared to larger more complex firms (P. Jones, Simmons, Packham, Beynon-Davies, & Pickernell, 2012; Runyan & Covin, 2019). Additionally, as previously stated, small business owners typically experience a greater degree of emotional connection to their firms than do their large firm counterparts; as a consequence, things such as goals, risks, loss etc. are evaluated in a completely different way (Runyan & Covin, 2019). The increased attachment influences the way in which owners / managers of small and micro entrepreneurial firms make strategic decisions (Culkin & Smith, 2000). Research suggests that affect has a greater influence in situations where reliance on learned social scripts is less common, such as environments that are highly dynamic with low predictability (Forgas & George, 2001). The entrepreneurship space is an example of such a situation (Lichtenstein et al., 2006). Affect also has considerable influence over cognition; especially with regard to creativity, perceptions, decision-making, and judgments; all of which deal with the decision-making processes of owners / managers (Robert A Baron, 2008; Isen, 2002; Isen & Labroo, 2003). Given the interactive effects between emotion and cognition, which influences decision-making, it is more than reasonable to suspect an interactive relationship between affect and decision-making logics (Cohen, 2005). Therefore, this study presumes that affect will have an impact on the relationship between either decision-making logic and relative profitability.

Affect is presented as either positive or negative (Watson, Clark, & Tellegen, 1988). As positive affect has been linked to greater creativity and opportunity recognition, both aspects in the entrepreneurial process, it is possible that positive affect enhances entrepreneurial outcomes

(Robert A Baron, 2006; Forgas & George, 2001; Isen & Labroo, 2003). One can postulate the interactive effects of positive affect and causation given the following thought logic. A causal owner / manager exhibiting positive affect (generally associated with positive moods such as enthusiasm, alertness, and determination) might set ambitious goals, display higher levels of confidence, and exhibit the mental self-determination and focus to accomplish them. Such an owner would be more likely to remain consistently motivated to examine profit and loss statements for firm optimization and consistently apply a strong strategic plan (Robert A Baron, Hmieleski, & Henry, 2012; Custers & Aarts, 2005). Further, consistent with existing evidence in the study of affect, the owner / manager may also exhibit more efficient and thorough decision-making as a result of positive affect (Isen, 2001; Isen & Means, 1983). An owner manager with less positive affect may apply less motivation, less consistent focus, and less decision-making efficiency (Custers & Aarts, 2005; Isen, 2001; Isen & Labroo, 2003). Therefore, one can reasonably infer that the operationalized causal decision-making logic behaviors are enhanced when positive affect is high. Given that improved decision-making processes have been shown to lead to improved performance, it can be reasoned that when positive affect is high the existing relationship between causation and performance is magnified (Brinckmann et al., 2010; Shirokova et al., 2020; Ralph I. Williams Jr. et al., 2018). Following this reasoning, this study argues that in the presence of positive affect the relationship between causation and relative profitability will be enhanced. Therefore, the following hypothesis is proposed:

H9: Positive affect positively moderates the relationship between causation and relative profitability.

Applying the same reasoning one can also postulate the interactive effects of positive affect and effectuation. An effectual owner / manager exhibiting positive affect might remain

more focused and determined, and less discouraged, while leveraging contingencies allowing for increased opportunity recognition and creation (Dew et al., 2009; G Thomas Lumpkin & Lichtenstein, 2005; S. Sarasvathy et al., 2014; S. D. Sarasvathy, 2001). They may also be more open to learning and exploration while networking and leveraging contingencies (Karami & Tang, 2019; S. Sarasvathy et al., 2014) . Further, they may possess a greater degree of determination and alertness with regard to networking, forming strategic partnerships, and capitalizing on opportunities, enabling the firm to increase its available means in a more profitable way (Tang, Baron, & Yu, 2021). Again, consistent with existing evidence in the study of affect, the owner / manager may exhibit more efficient and effective decision-making as a result of positive affect (Isen, 2001; Isen & Means, 1983). An effectual owner / manager with less positive affect may apply less optimism in the face of contingencies and less consistent motivation with regard to expanding available means (Robert A Baron et al., 2012; S. Sarasvathy et al., 2014). Further, an owner / manager with less positive affect may apply less motivation, less consistent focus, and less decision-making efficiency (Isen, 2001; Isen & Labroo, 2003). Therefore, one can reasonably infer that the operationalized effectual decision-making logic behaviors are enhanced when positive affect is high. Given that better improved decision-making processes have been shown to lead to improved performance, it can be reasoned that when positive affect is high the existing relationship between effectuation and performance is magnified (Brinckmann et al., 2010; Shirokova et al., 2020; Ralph I. Williams Jr. et al., 2018). Following this reasoning, this study argues that in the presence of positive affect the relationship between effectuation and relative profitability will be enhanced. Therefore, the following hypothesis is proposed:

H10: Positive affect positively moderates the relationship between effectuation and relative profitability.

Positive and negative affect have been shown to influence aspects of cognition differently (Foo, 2011; Hayton & Cholakova, 2012). There is evidence that supports the likelihood of negative affect having interactive effects that are opposite in nature to those of positive affect (Bledow, Rosing, & Frese, 2013). If fact, a meta-analytic review of both positive and negative affect and the impact on entrepreneurial performance indicates that, although positive affect has a statistically significant positive relationship with entrepreneurial performance, the relationship between negative affect and performance is either null or negative (Fodor & Pintea, 2017). Given this, it is reasonable to assume that negative affect will influence the relationship between decision-making logic and relative profitability in the opposite direction to that of positive affect.

Applying the following logic, one can make reasonable assumptions around the interactive effects of negative affect and causation. A causal owner / manager exhibiting negative affect (generally associated with negative moods such as fear, distress, and shame) might set relatively mediocre goals, out of fear of failure (Forgas, 1995, 2002). Such an owner might be more likely to experience unnecessary anxiety or stress while examining profit and loss statements (Forgas, 2002; Forgas & George, 2001). Strategic planning then becomes more of an exercise in trying to prevent doom rather than trying to optimize the future. This type of attitude may prevent the owner / manager from capitalizing on profitable opportunities (Tang et al., 2021). An owner manager with less negative affect may be less prone to high levels of distress and better able to rationally optimize firm performance (Forgas, 2008; Shepherd, Williams, & Patzelt, 2015). In this way negative affect dampens the impact of the causation behaviors present in the owner / manager which would likely decrease positive outcomes. Therefore, one

can reasonably infer that the operationalized causal decision-making logic behaviors may likely be lessened when negative affect is high. Given the aforementioned reasoning, it can be inferred that when negative affect is high the existing relationship between causation and performance is dampened (Brinckmann et al., 2010; Shirokova et al., 2020; Ralph I. Williams Jr. et al., 2018). Following this reasoning, this study argues that in the presence of negative affect the relationship between causation and relative profitability will be diminished. The following hypothesis is proposed:

H11: Negative affect negatively moderates the relationship between causation and relative profitability.

Again, by applying the same reasoning one can also postulate the interactive effects of negative affect and effectuation. An effectual owner / manager exhibiting negative affect might be prone to feelings of disappointment and decision fatigue, while leveraging contingencies which may lead to a decrease in opportunity recognition and creation (Robert A Baron, 2008; Forgas, 2008; Forgas & George, 2001). They may also focus on forming networks and strategic partnerships more for the purpose of having a strategic safety net rather than expanding enabling positive opportunities; increasing safety at the expense of profitability (Jansen et al., 2011; Kumar et al., 2012). Alternatively, an effectual owner / manager with less negative affect may be less fear and stress oriented and may be better able to keep sight of profitable opportunities (Mittal & Ross Jr, 1998). In this way, negative affect dampens the impact of the effectual behaviors present in the owner / manager which would likely decrease the positive outcomes of those behaviors. Therefore, one can reasonably infer that the operationalized effectual decision-making logic behaviors may likely be lessened when negative affect is high. Given the aforementioned reasoning, it can be asserted that when negative affect is high the existing

relationship between effectuation and performance is dampened (Fodor & Pintea, 2017; Shirokova et al., 2020). Following this reasoning, this study argues that, in the presence of negative affect, the relationship between effectuation and relative profitability will be diminished. Therefore, the following hypotheses is proposed:

H12: Negative affect negatively moderates the relationship between effectuation and relative profitability.

CHAPTER 3: METHODOLOGY

Sample

For the purposes of this study small business was defined based on self-reported employee count, using the most recent and most restrictive guidelines from the U.S. Small Business Administration across any of its NAICS codes of 100 employees or less ("SBA Size Standards," 2019). As a caveat, a five-employee minimum was instituted to ensure that small businesses 'hobbyists', those who own a business entity but may not be fully engaged, would be excluded from the sample. Further, to ensure a reasonable mix of established and newer more 'entrepreneurial' businesses only firms with ten years of time in business or less were included. A total of 225 owner /managers qualified for the study, each owning or managing a business that had been in operation for ten years or less and having no less than five employees and no more than 100 employees. The majority of the sample (approximately 70%) were composed of business owners with less than 25 employees. The average number of years in business for the sample was five years. Given this, the bulk of the sample is comprised of very small and very young businesses.

The Institutional Review Board authorization for this study was received on the 16th of January 2023 by the University of North Carolina at Charlotte (Study #: 23-0420). Respondent data for this study was collected via Qualtrics (XM) who identified qualified small business owners, according to prescribed criteria, and electronically distributed distribute the survey. Respondents primarily used the Qualtrics (XM) survey platform to self-report all responses electronically. The questions and scales used for the survey are located in Appendix A. The responses were reviewed for missing or erroneous data. Respondents with missing data were excluded from the analysis leaving a final sample of 220.

Independent variables

Measuring Decision-making logics / Effectuation and Causation. Effectuation and Causation were measured using a twenty-six-item survey on a five-point Likert scale based on work by Brettel et al. (2012) and Appelhoff et al. (2016); and modified for general firm application by An et al. (2019). This scale has been successfully implemented with a Cronbach's alpha of 0.87 for causation and 0.86 for effectuation indicating a high degree of reliability (An et al., 2019; Hair, Anderson, Tatham, & William, 1998). The measures seek to look at individual decision-making behavior using the following dimensions: means focused vs. goals focused, affordable loss vs. expected return, partnerships vs. market analysis, and acknowledge unexpected vs. overcome unexpected (An et al., 2019; Appelhoff et al., 2016; Brettel et al., 2012). For this study the two decision-making logics are treated as two independent constructs rather than the end points of a continuum (An et al., 2019).

Table 5: Measurement Items for Causation and Effectuation

Measure	Role	Item	Reference
Causation	Independent		An, W., et al. (2019). "Configurations of effectuation, causation, and bricolage: implications for firm growth paths." Small Business Economics 54(3): 843-864.
Preference for goals		Firm activities were specified on the basis of given targets.	
		The targets were clearly defined in the beginning.	
		Required means/resources have been determined on the basis of given targets.	
		The specification was predominantly based on given targets.	
		Given targets have significantly impacted on the framework of the activity.	
Preference for expected returns		Considerations about potential returns were decisive for the selection of the option.	An, W., et al. (2019). "Configurations of effectuation, causation, and bricolage: implications for firm growth paths." Small Business Economics 54(3): 843-864.
		Budgets were approved based on calculations of expected returns (e.g., ROI).	
		The selection of the options was mostly based on analyses of future returns.	
		We mainly considered the potential odds of the activity.	
Preference for competitive market analysis		We tried to identify risks of the activity through thorough market and competitor analyses.	An, W., et al. (2019). "Configurations of effectuation, causation, and bricolage:
		We have analyzed the market and external trends to better assess future developments.	

		We have taken our decisions on the basis of systematic market analyses.	implications for firm growth paths." Small Business Economics 54(3): 843-864.
		In order to identify risks, we focused on market analyses and forecasts.	
Preference for overcoming the unexpected		We only integrated surprising results and findings when the original target was at risk.	An, W., et al. (2019). "Configurations of effectuation, causation, and bricolage: implications for firm growth paths." Small Business Economics 54(3): 843-864.
		Our processes focused on reaching the target without any delay.	
		New findings did not influence the target.	
		The planning was basically carried out at the beginning.	
		We first took care of reaching our initially defined targets without delays.	
		With the use of upfront market analyses, we tried to avoid setbacks or external threats.	
Effectuation	Independent		An, W., et al. (2019). "Configurations of effectuation, causation, and bricolage: implications for firm growth paths." Small Business Economics 54(3): 843-864.
Preference for means		Firm activities were specified on the basis of given means/resources.	
		The targets were usually vaguely defined in the beginning.	
		Given means/resources had been the starting point.	
		The specification was predominantly based on given resources.	
		Given means had significantly impacted on the framework of the activity.	
Preference for affordable loss		Considerations about potential losses were decisive for the selection of the option.	An, W., et al. (2019). "Configuration

		Budgets were approved on the basis of considerations about acceptable losses.	s of effectuation, causation, and bricolage: implications for firm growth paths." Small Business Economics 54(3): 843-864.
		The selection of option was mostly based on a minimization of risks and costs.	
		Decisions on capital expenditures were primarily based on potential risks of losses.	
Preference for partnerships		We tried to reduce risks through internal or external partnerships and agreements.	An, W., et al. (2019). "Configurations of effectuation, causation, and bricolage: implications for firm growth paths." Small Business Economics 54(3): 843-864.
		We jointly decided with our partners/stakeholders on the basis of our competences.	
		Our focus was rather on the reduction of risks by approaching potential partners and customers.	
		In order to reduce risks, we started partnerships and received precommitments.	
Preference for acknowledgement (Leveraging the unexpected)		We always tried to integrate surprising results and findings during the process—even though this was not necessarily in line with the original target.	An, W., et al. (2019). "Configurations of effectuation, causation, and bricolage: implications for firm growth paths." Small Business Economics 54(3): 843-864.
		Our process was flexible enough to be adjusted to new findings.	
		New findings influenced the target.	
		The planning was carried out in small steps during the activity implementation.	
		Despite potential delays in execution, we were flexible and took advantage of opportunities as they arose.	

		Potential setbacks or external threats were used as advantageously as possible.	

Dependent variable

Relative Profitability. Profitability has been measured in previous literature using various methods; including both subjective and objective (Brinckmann et al., 2010; Eddleston, Kellermanns, & Sarathy, 2008). Although subjective measures for profitability have been shown to be a reliable indication of a firm's true profitability, scholars have found a need to employ safeguards against incorrect self-reporting, using samples of either objective measures or less subjective numeric self-reported measures, in their approach (An et al., 2019). This study has attempted to utilize the most ideal measure to determine the firm's profitability; however, ultimately a subjective measure for profitability was necessary. This should be expected due to the often inaccessibility and sensitivity of objective profit data from small businesses.

The ideal relative profitability measure for this study would be gross profit margin (De Massis et al., 2018). This measure is considered ideal, by process of elimination, for four reasons. First, it is consistent with objective profitability measurements from extant literature, which commonly includes return on assets (ROA), return on investment (ROI), gross profit margin, or net profit margin (Brinckmann et al., 2010). Second, evidence suggests that net profit is likely a less than consistent determinant of a private firm's true profitability due to irregularities in accounting procedures across firms and business structures (Lange et al., 2007).

Third, asset-based measures, such as ROA or ROI, may introduce a measurement bias, depending on the previously held assets or capital of the firm, that could lead to an incorrect interpretation of the impact the behaviors being studied (De Massis et al., 2018). Forth, the information needed to calculate gross profit margin (sales revenue and cost of sales) is assumed to be fairly straightforward and easy to for business owners to self-report. For these reasons every effort was made to acquire sufficient data such that gross profit margin could be utilized as the relative profitability measure.

Recognizing that researchers have historically had difficulty obtaining precise numerical measures of firm profitability, due to the sensitivity of the financial information of privately held firms, this study collected sufficient data to compile a subjective profitability measure that will serve as a valid proxy for either objective or self-reported numeric measures (Eddleston & Kellermanns, 2007). This subjective measure has been utilized in prior research with a reliability coefficient of 0.88 and is assumed to capture the essences of relative profitability as it asks respondents to evaluate current performance along profit metrics as being better or worse than their competitors along a five-point Likert scale (Eddleston & Kellermanns, 2007; Eddleston et al., 2008).

As dissimilar firms are to be used in the sample, it is recognized that comparing profit information from companies in different industries and in different locations may lead to erroneous conclusions. This is due to the potential for disproportionate industry effects as well as potential variations caused by firm locations (Powell, 1996). To compensate for these concerns this study controls for firm location and industry time. These control variables will be discussed in a subsequent section.

Table 6: Measurement Items for Profitability

Measure	Role	Item	Reference
Relative Profitability	Dependent	How would you rate your firm's current performance as compared to your competitors? • Growth in sales • Growth in market share • Growth in number of employees • Growth in profitability • Return on equity • Return on total assets • Profit margin on sales • Ability to fund growth from profits	Eddleston, K. A. and F. W. Kellermanns (2007). "Destructive and productive family relationships: A stewardship theory perspective." Journal of Business Venturing 22(4): 545-565.

Interaction variables

Entrepreneurial Orientation. This study uses the Miller/Covin and Slevin EO Scale to measure entrepreneurial orientation. This scale was utilized by Covin and Slevin and yielded an intra-item reliability of 0.87; it has been repeatedly used in studies around entrepreneur orientation (Jeffrey G Covin & Slevin, 1989; Jeffrey G. Covin & Wales, 2012). For the purposes of this study, this construct is viewed as a reflective measure along the dimensions of innovation,

proactiveness, and risk taking. Each dimension was measured and tested independently using a Likert scale survey (Jeffrey G. Covin & Wales, 2012; George & Marino, 2011).

Table 7: Measurement Items for the Dimensions of Entrepreneurial Orientation

Measure	Role	Item	Reference
EO: Innovativeness	Moderator	In general, the top managers of my firm favor a strong emphasis on the marketing of tried-and-true products or services. / In general, the top managers of my firm favor a strong emphasis on R&D, technological leadership, and innovations.	Covin, J. G. and D. P. Slevin (1989). "Strategic management of small firms in hostile and benign environments." Strategic management journal 10(1): 75-87.
		How many new lines of products or services has your firm marketed in the past five years (or since its establishment)? No new lines of products or services / Very many new lines of products or services.	
		How many new lines of products or services has your firm marketed in the past five years (or since its establishment)? Changes in product or service lines have been mostly of a minor nature. / Changes in product or service lines have usually been quite dramatic.	
EO: Proactiveness	Moderator	In dealing with its competitors, my firm typically responds to actions which competitors initiate. / In dealing with its competitors, my firm typically initiates actions to which competitors then respond.	Covin, J. G. and D. P. Slevin (1989). "Strategic management of small firms in hostile and benign environments." Strategic management
		In dealing with its competitors, my firm is very seldom the first business to	

		introduce new products/services, administrative techniques, operating technologies, etc. / In dealing with its competitors, my firm is very often the first business to introduce new products/services, administrative techniques, operating technologies, etc.	journal 10(1): 75-87.
		In dealing with its competitors, my firm typically seeks to avoid competitive clashes, preferring a "live-and-let-live" posture / In dealing with its competitors, my firm typically adopts a very competitive, "undo-the-competitors" posture	
EO: Risk-Taking	Moderator	In general, the top managers of my firm have a strong proclivity for low-risk projects (with normal and certain rates of return) / In general, the top managers of my firm have a strong proclivity for high-risk projects (with chances of very high returns)	Covin, J. G. and D. P. Slevin (1989). "Strategic management of small firms in hostile and benign environments." Strategic management journal 10(1): 75-87.
		In general, the top managers of my firm believe that owing to the nature of the environment, it is best to explore it gradually via cautious, incremental behavior. / In general, the top managers of my firm believe that owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives.	
		When confronted with decision-making situations involving uncertainty, my firm typically adopts a cautious, "wait-and-see" posture in	

		order to minimize the probability of making costly decisions / When confronted with decision-making situations involving uncertainty, my firm typically adopts a bold, aggressive posture in order to maximize the probability of exploiting potential opportunities	

Positive Affect: This study will utilize the Watson et al.'s (1988) Positive and Negative Affect Schedule (PANAS). Watson et al.'s (1988) twenty item PANAS scale was developed with Cronbach's alphas of 0.88 and 0.87 for positive affect and negative affect respectively and has been utilized extensively since its inception and has been repeatedly validated (Crawford & Henry, 2004; Watson et al., 1988).

Table 8: Measurement Items for Positive and Negative Affect

Measure	Role	Item	Reference
Positive Affect	Moderator	Read each item and then circle the appropriate answer next to that word. Indicate the extent you generally feel this way, that is, how you feel on the average: Interested, Excited, Strong, Enthusiastic, Proud, Alert, Inspired, Determined, Attentive, Active	Watson, D., et al. (1988). "Development and validation of brief measures of positive and negative affect: the PANAS scales." Journal of personality and social psychology 54(6): 1063.
Negative Affect	Moderator	Read each item and then circle the appropriate answer next to that word. Indicate the extent you generally feel this way, that is, how you feel on the average: Distressed, Upset, Guilty, Scared, Hostile,	Watson, D., et al. (1988). "Development and validation of brief measures of positive and negative affect:

		Irritable, Ashamed, Nervous, Jittery, Afraid	the PANAS scales." Journal of personality and social psychology 54(6): 1063.demographic variables in a community sample." Personality and Individual differences 27(3): 405-416.

Control Variables

Uncertainty avoidance. Uncertainty avoidance was measured at the individual level using a Likert scale based on the work of Dorfman and Howell (1988) and later evaluated by Culpepper and Watts (1999), who validated the scale with a Cronbach's alpha of 0.87, which indicates high intra-item reliability (Culpepper & Watts, 1999; Dorfman & Howell, 1988).

Owner/Manager's age. The age of the owner(s) / manager(s) was measured numerically in years (W. D. Jones, 1982).

Owner/Manager's gender. The gender of the owner(s) / manager(s) was measured by dummy code according to gender either "0" for male or "1" for female (Orser, Hogarth-Scott, & Riding, 2000).

Owner/Manager's race. Race is measured using a set of binary variables (1 if true, 0 if otherwise). The following indicators for race will coded as "1" if present, and coded as "0" if absent; "White," "Black," "Asian," "Other" (Orser et al., 2000). By convention "White" is the reference group.

Firm age. The age of the firm was a self-reported measurement in years (Hyytinen & Pajarinen, 2008).

Firm size. The size of the firm was measured by number of employees (An et al., 2019).

Firm location by State and Region. The location of the firm was derived by utilizing its State of incorporation / organization (Chrisman, Chua, & Steier, 2002). Each state was then categorized into one of the eight statistical regions defined by the Bureau of Economic Analysis of the United States Department of Commerce for the purposes of statistical evaluation and comparison. The statistical regions are as follows: New England, Mideast, Great Lakes, Plains, Southeast, Southwest, Rocky Mountain, Far West ("Statistical Areas; BEA Regions By State," 2020). States from every statistical region are represented in the sample, indicating geographic diversity within the sample.

Industry type. Industry type was measured categorically by matching respondent information to the corresponding industry, according to the North American Industry Classification System (NAICS), which is a replacement for the often-utilized Standard Industrial Classification (SIC) System (Kelton, Pasquale, & Rebelein, 2008; "North American Industry Classification System," 2022; Spell & Blum, 2005). The NAICS code was then generalized to its most broad two-digit identifier. The NAICS has twenty general industry two-digit classifications. Of the twenty industry type classifications, seventeen are represented in the sample, indicating diversity of industry within the sample ("North American Industry Classification System," 2022). In accordance with methodology untallied by the Bureau of Labor and Statistics (BLS), each of the industry type classifications were then further grouped into BLS predetermined categories of either “goods producing” or “service providing” ("Industries at a Glance," 2023a; "Industries at a Glance," 2023b). The two categories were then dummy coded.

Table 9: Industry Categories

("Industries at a Glance," 2023a; "Industries at a Glance," 2023b; "North American Industry Classification System," 2022)

Sector	Industry Name	Category
11	Agriculture, Forestry, Fishing and Hunting	Goods-Producing
21	Mining, Quarrying, and Oil and Gas Extraction	Goods-Producing
22	Utilities	Service-Providing
23	Construction	Goods-Producing
31-33	Manufacturing	Goods-Producing
42	Wholesale Trade	Service-Providing
44-45	Retail Trade	Service-Providing
48-49	Transportation and Warehousing	Service-Providing
51	Information	Service-Providing
52	Finance and Insurance	Service-Providing
53	Real Estate and Rental and Leasing	Service-Providing
54	Professional, Scientific, and Technical Services	Service-Providing
55	Management of Companies and Enterprises	Service-Providing
56	Administrative and Support and Waste Management and Remediation Services	Service-Providing
61	Educational Services	Service-Providing
62	Health Care and Social Assistance	Service-Providing

71	Arts, Entertainment, and Recreation	Service-Providing
72	Accommodation and Food Services	Service-Providing
81	Other Services (except Public Administration)	Service-Providing
92	Public Administration	Service-Providing

Table 10: Measurement Items for Control Variables

Measure	Role	Item	Reference
Uncertainty Avoidance	Control	It is important to have job requirements and instructions spelled out in detail so that employees always know what they are expected to do.	Culpepper, R. A. and L. Watts (1999). "Measuring cultural dimensions at the individual level: An examination of the Dorfman and Howell (1988) scales and Robertson and Hoffman (1999) scale." Academy of Strategic and Organizational Leadership Journal **3**(1): 22-34.
		Managers expect employees to closely follow instructions.	
		Rules and regulations are important because they inform employees what the organization expects of them.	
		Standard operating procedures are helpful to employees on the job.	
		Instructions for operations are important for employees on the job.	
Owner/Manager's Age	Control	Age: _____ years.	Jones, W. D. (1982). "Characteristics of planning in small firms." Journal of Small Business Management (pre-1986) 20(000003): 15.
Owner/Manager's Sex	Control	Gender: ___ Male ___ Female	Orser, B. J., et al. (2000).

			"Performance, firm size, and management problem-solving." Journal of Small Business Management 38(4): 42-58.
Owner/Manager's Race	Control	White_____ Black or African American_____Asian _____ Other race_____	Orser, B. J., et al. (2000). "Performance, firm size, and management problem-solving." Journal of Small Business Management 38(4): 42-58.
Firm Age	Control	How old is your firm? (years)	Hyytinen, A. and M. Pajarinen (2008). "Opacity of young businesses: Evidence from rating disagreements." Journal of banking & finance 32(7): 1234-1241.
Firm Size	Control	How many employees does your firm have?	An, W., et al. (2019). "Configurations of effectuation, causation, and bricolage: implications for firm growth paths." Small Business Economics 54(3): 843-864.
Firm Location	Control	Location of the firm? (state)	Chrisman, J. J., et al. (2002).

			"The Influence of National Culture and Family Involvement on Entrepreneurial Perceptions and Performance at the State Level." Entrepreneurship Theory and Practice 26(4): 113-130.
Industry Type	Control	Firm Industry	Spell, C. S. and T. C. Blum (2005). "Adoption of workplace substance abuse prevention programs: Strategic choice and institutional perspectives." Academy of Management Journal 48(6): 1125-1142.

Data Evaluation

The results from the distributed survey were initially reviewed for missing data. Respondent information was found to be relatively complete. With the exception of the self-reported measures of revenue and cost of sales (COS), necessary elements to calculate gross profit margin, there were no variables with missing data that was greater than 0.9% from all 225 respondents. After eliminating respondents with missing data 220 respondents remained.

However, only 147 respondents answered the specific questions of revenue and cost of sales; of those, many answers were judged to be less than reliable as they either resulted in a gross profit that would be too low to realistically support the indicated number of employees or

were otherwise wildly inconsistent with realistic norms. Additionally, the correlation between the proxy measure for relative profitability and the numeric measure of gross profit margin was low (0.14) and statistically insignificant ($\alpha = 0.09$) at the 0.95 confidence level. This indicates inaccuracy of the numeric profit measure. As previously indicated, researchers have typically experienced difficulty in obtaining quality self-reported numeric measures of profitability from privately held small businesses. For this reason, the aforementioned proxy measure of relative profitability is utilized for this study's data analysis (Eddleston & Kellermanns, 2007).

Scale variables were derived by calculating the averages of each of the items making up each of the dimensions of the multidimensional constructs. Consistent with standard practices, Cronbach's alpha was utilized to assess the reliability of the measurement scales (Hair, 2009). The dependent variable, relative profitability, had a Cronbach's Alpha of 0.86 which, being greater than 0.7, indicates a high level of internal consistency among the responses. The dimensions of the independent variable, effectuation, also yielded Cronbach's Alphas indicating high reliability: means driven (0.77), focus on affordable loss (0.70), proclivity toward partnerships or networking (0.81), and leveraging contingency (0.77). Similarly, the dimensions of the independent variable of causation also yielded Cronbach's Alphas, indicating high reliability: goals driven (0.78), focused on expected returns (0.70), reliance on prediction (0.80), and avoiding the unexpected (0.73). The Cronbach's Alpha of the moderating variables positive affect (0.84) and negative affect (0.93) also indicated high reliability. The Cronbach's Alphas of the dimensions of entrepreneurial orientation; innovation (0.65) proactiveness (0.54), and risk taking (0.60), indicated lower levels of reliability, each being less than 0.70. The entrepreneurial orientation measure as a whole, however, yielded a Cronbach's Alpha of 0.80, which may indicate that the scales were less than sufficient at measuring each aspect of entrepreneurial

orientation, given the specific sample and collection method, but may have reliably captured the essence of entrepreneurial orientation as a whole. Given this result, and with the understanding that this scale has been successfully employed in multiple studies for over thirty years, it was determined that disregarding the measures of innovation, proactiveness, and risk-taking would not be appropriate; however, the inability to achieve an inter-item consistency above 0.70 for each dimension is noted as a limitation (Jeffrey G Covin & Slevin, 1989; Jeffrey G. Covin & Wales, 2012; William J. Wales et al., 2020). Further, a second regression analysis using the combined entrepreneurial orientation, in lieu of each dimension as a measure, was also conducted. The control variable of uncertainty avoidance yielded a Cronbach's Alpha of 0.86, which indicates internal consistency and a high level of reliability (Hair, 2009).

The data was also evaluated for normality (i.e. skewness and kurtosis). Neither skewness nor kurtosis measures were greater than +2 or less than –2 indicating an acceptable level of normality for the study (Hair Jr, Hult, Ringle, & Sarstedt, 2021). Tests for collinearity were also conducted. Both tolerance and variance inflation factor (VIF) where evaluated. All variables yielded a tolerance of greater than 0.10 and a VIF of less than 10.0, indicating low multicollinearity (Hair, 2009).

Table 11: List of Alphas

Scale Measures	**Cronbach's Alpha**
Relative Profitability	0.86*
Effectuation: Means Driven	0.77*
Effectuation: Focus on Affordable Loss	0.70*
Effectuation: Reliant on Partnerships / Networking	0.81*
Effectuation: Leverages Contingency	0.77*
Causation: Goals Driven	0.78*
Causation: Focus on Expected Returns	0.70*
Causation: Reliant on Analysis & Prediction	0.80*
Causation: Avoids the Unexpected	0.73*
Positive affect	0.84*
Negative affect	0.93*
Entrepreneurial Orientation: Innovation	0.65
Entrepreneurial Orientation: Proactiveness	0.54
Entrepreneurial Orientation: Risk Taking	0.60
Entrepreneurial Orientation: All Dimensions	0.80*
* Indicates acceptable level of reliability	

Table 12: Descriptive Statistics

	N	Min.	Max.	Mean	Std. Dev.	Skewness		Kurtosis	
						Stat.	Std. Error	Stat.	Std. Error
Relative Profit	220	1.50	5.00	3.87	0.61	-0.43	0.16	0.36	0.33
Effectuation	220	1.96	5.00	3.74	0.62	0.02	0.16	-0.58	0.33
Causation	220	2.06	5.00	3.88	0.61	-0.23	0.16	-0.38	0.33
Positive Affect	220	1.60	5.00	4.20	0.60	-1.10	0.16	1.90	0.33
Negative Affect	220	1.00	4.80	2.11	0.97	0.96	0.16	-0.07	0.33
Innovating	220	1.00	5.00	3.34	0.85	-0.02	0.16	-0.23	0.33
Proactiveness	220	1.00	5.00	3.42	0.82	-0.08	0.16	-0.24	0.33
Risk Taking	220	1.00	5.00	3.49	0.82	-0.24	0.16	0.06	0.33
Entrepreneurial Orientation	220	1.22	5.00	3.42	0.69	0.20	0.16	-0.05	0.33

Table 13: Correlations

	Female	Race: Black	Race: Asian	Race: Other	Employees	New England	Mideast	Great Lakes	Plains	Southwest	Rocky Mountain	Far West	Goods Producing	Years In Business	Uncertainty Avoidance	Effectuation	Causation	Positive Affect	Negative Affect	Innovation	Proactive	Risk Taking	Entrepreneurial Orientation:	Relative Profit
Female	1.00																							
Race: Black	0.10	1.00																						
Race: Asian	-0.11	-0.09	1.00																					
Race: Other	-0.12	-0.12	-0.05	1.00																				
Employees	-0.06	0.17*	-0.07	-0.10	1.00																			
New England	-0.06	0.01	-0.03	-0.04	-0.09	1.00																		
Mideast	0.01	-0.08	0.01	0.02	0.00	-0.05	1.00																	
Great Lakes	0.04	0.04	-0.06	-0.08	0.04	-0.05	-0.10	1.00																
Plains	0.01	-0.06	-0.05	-0.07	-0.14*	-0.04	-0.09	-0.08	1.00															
Southwest	-0.20**	0.02	-0.09	-0.05	0.17*	-0.07	-.170*	-0.15*	-0.13	1.00														
Rocky Mountain	-0.08	-0.07	-0.03	-0.05	0.07	-0.02	-0.06	-0.05	-0.04	-0.08	1.00													
Far West	-0.02	-0.09	0.32**	0.17**	-0.02	-0.06	-0.15*	-0.13	-0.11	-0.21**	-0.07	1.00												
Goods Producing	-0.19**	-0.15*	-0.13*	0.03	-0.09	-0.04	-0.11	-0.07	0.02	0.02	0.06	-0.08	1.00											
Years In Business	-0.12	0.00	0.02	0.12	0.06	0.03	-0.02	0.05	-0.09	-0.04	-0.07	0.02	0.05	1.00										

	Female	Race: Black	Race: Asian	Race: Other	Employees	New England	Mideast	Great Lakes	Plains	Southwest	Rocky Mountain	Far West	Goods Producing	Years In Business	Uncertainty Avoidance	Effectuation	Causation	Positive Affect	Negative Affect	Innovation	Proactive	Risk Taking	Entrepreneurial Orientation: All	Relative Profit
Uncertainty Avoidance	-0.03	0.00	0.07	-0.08	0.05	-0.03	0.07	-0.15*	0.10	0.07	-0.04	0.00	0.14*	0.00	1.00									
Effectuation	0.02	0.05	0.19**	-0.20**	0.22**	-0.10	-0.03	-0.01	-0.13	0.06	0.02	0.01	-0.02	0.08	0.31**	1.00								
Causation	-0.03	0.06	0.13	-0.10	0.20**	-0.11	0.06	0.03	-0.09	0.07	-0.03	0.03	-0.04	0.20**	0.36**	0.74**	1.00							
Positive Affect	0.09	-0.02	-0.11	-0.09	0.13	-0.11	0.09	-0.03	-0.01	0.04	0.01	-0.08	0.13	0.20**	0.51**	0.38**	0.46**	1.00						
Negative Affect	-0.09	-0.03	-0.06	0.14*	0.22**	0.01	-0.07	0.06	-0.07	0.14*	0.09	-0.09	-0.06	-0.05	-0.30**	0.09	-0.02	-0.30**	1.00					
Innovation	-0.06	0.14*	0.10	0.00	0.24**	-0.10	0.06	-0.03	-0.06	0.03	0.01	0.03	-0.09	0.09	0.14*	0.47**	0.48**	0.17**	0.12	1.00				
Proactive	0.01	0.09	0.15*	-0.03	0.17*	-0.06	0.12	0.08	-0.07	0.01	-0.09	-0.01	-0.06	.164*	0.20**	0.41**	0.38**	0.367**	-0.04	0.50**	1.00			
Risk Taking	0.03	0.07	0.12	0.04	0.13	-0.05	0.13*	0.06	-0.04	-0.01	-0.10	-0.03	0.02	0.03	0.31**	0.32**	0.38**	0.32**	0.02	0.47**	0.62**	1.00		
Entrepreneurial Orientation: All	-0.01	0.12	0.15*	0.00	0.22**	-0.09	0.13	0.04	-0.07	0.01	-0.07	0.00	-0.05	0.11	0.26**	0.48**	0.50**	0.34**	0.04	0.80**	0.85**	0.84**	1.00	
Relative Profit	-0.04	0.11	0.03	0.01	0.23**	-0.08	0.02	-0.07	-0.11	0.05	0.00	0.04	-0.14*	0.11	0.15*	0.53**	0.46**	0.29**	0.05	0.49**	0.37**	0.34**	0.48**	1.00

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

A power analysis was conducted in G-Power. Given 23 predictors, 16 control variables (uncertainty avoidance, owner/manager's age, owner/manager's sex [male or female], owner/manager's race [White, Black, Asian, Other], firm age, firm size, firm location [New England, Mideast, Great Lakes, Plains, Southeast, Southwest, Rocky Mountain, Far West], industry type [goods producing, service providing]; reference dummy variables excluded), two decision logic variables (effectuation and causation), three entrepreneurial orientation variables (innovativeness, proactiveness, and risk taking), and two affect variables (positive affect and negative affect) and where desired effect size $d = 0.3$, and error probability $\alpha = 0.05$, and sample size $n = 220$. Given these parameters, the statistical power of the model is 99.9%, indicating a low probability of committing a type II error (accepting a false null hypothesis).

Finally, hypothesis testing was conducted using IBM SPSS Statistics using hierarchical multiple regression and P-value significance testing (Hair et al., 1998). Each proposed hypothesis was tested at a 95% confidence level. The direct effects of each decision-making logic, causation and effectuation, were first tested independently then the interactive relationships of the moderating variables were tested. The findings of the multiple regression will be discussed in the subsequent section.

Test of Model

The regression analysis is conducted in four steps. The first step accounts for the potential direct influences of the discussed control variables. The second step examines the direct influences of the independent variables (causation and effectuation) on the dependent variable (relative profitability). The third step examines any direct influences on the intended moderating variables. The only statistically significant relationship among these added variables

discovered in this step was between innovation and relative profitability ($\rho < 0.01$) indicating that innovation is a direct predictor of relative profitability. The fourth step examines the interaction terms and is used to report the interaction effects. The overall model has an adjusted R-square of 0.44, indicating that it explains 44% of the change in relative profitability given its predictor variables, and an overall significance of less than 0.001, indicating a goodness of fit.

The first hypothesis (H1) proposed that causation is positively correlated with small business relative profitability. The relationship between causation and relative profitability was statistically insignificant ($\rho = 0.31$) given the associated p-value is greater than 0.05, **the first hypothesis (H1) is not supported**.

The second hypothesis (H2) proposed that effectuation is positively correlated with small business relative profitability. The relationship between effectuation and relative profitability was statistically significant ($\rho < 0.01$) given the associated p-value is less than 0.05. As predicted, the associated beta and standardized beta coefficients were positive ($ß = 0.44$ and $ß = 0.46$ respectively). Given the associated p-value is less than 0.05 and the positive directionality of the beta coefficient, **the second hypothesis (H2) is supported**.

The third hypothesis (H3) proposed that the entrepreneurial orientation dimension of innovating positively moderates the relationship between causation and small business relative profitability. The interactive relationship between innovating and causation and the combined relationship with relative profitability was statistically insignificant ($\rho = 0.68$) given the associated p-value is greater than 0.05, **the third hypothesis (H3) is not supported**.

The fourth hypothesis (H4) proposed that the entrepreneurial orientation dimension of innovating positively moderates the relationship between effectuation and small business relative

profitability. The interactive relationship between innovating and effectuation and the combined relationship with relative profitability was statistically insignificant (ρ = 0.42) given the associated p-value is greater than 0.05, **the fourth hypothesis (H4) is not supported**.

The fifth hypothesis (H5) proposed that the entrepreneurial orientation dimension of proactiveness positively moderates the relationship between causation and small business relative profitability. The interactive relationship between proactiveness and causation and the combined relationship with relative profitability was statistically insignificant (ρ = 0.36) given the associated p-value is greater than 0.05, **the fifth hypothesis (H5) is not supported**.

The sixth hypothesis (H6) proposed that the entrepreneurial orientation dimension of proactiveness positively moderates the relationship between effectuation and small business relative profitability. The interactive relationship between proactiveness and effectuation and the combined relationship with relative profitability was statistically significant (ρ = .01). As predicted, the associated beta and standardized beta coefficients were positive ($ß$ = 0.17 and $ß$ = 0.32 respectively). Given the associated p-value is greater than 0.05 and the positive directionality of the beta coefficient, **the sixth hypothesis (H6) is supported**. The interactive relationship is graphicly depicted in Figure 4 which shows that in the presence of high proactiveness the relationship between effectuation and relative profitability is altered significantly.

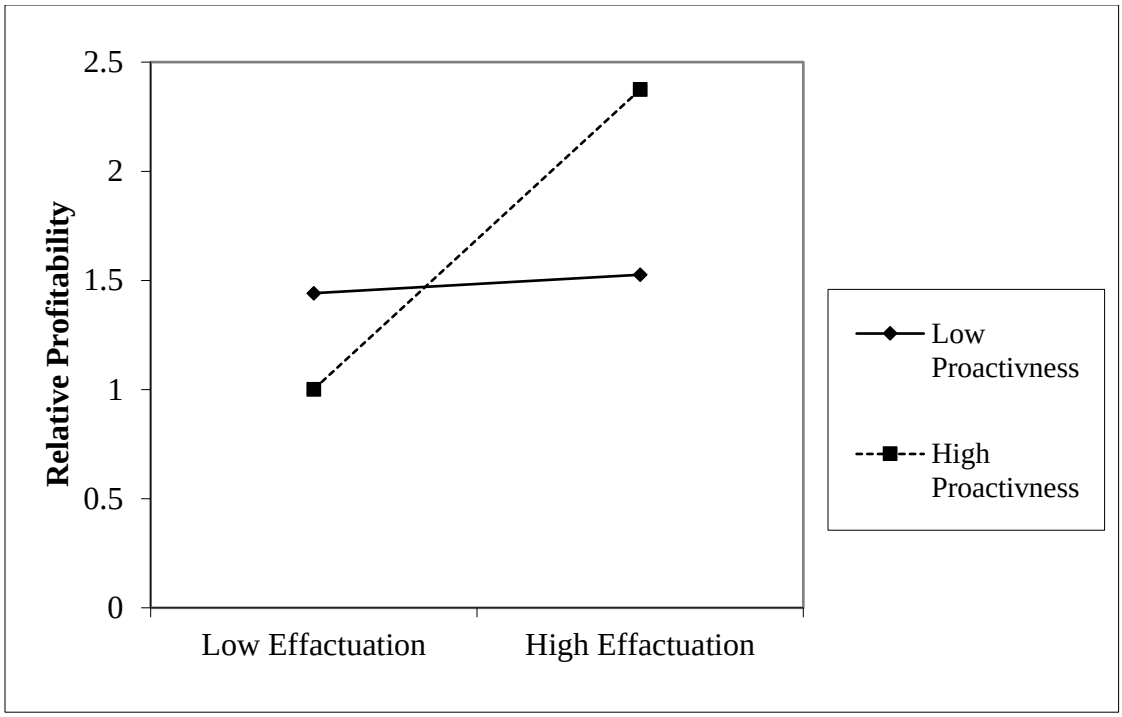

Figure 4: Effectuation and Relative Profitability Moderated by Proactiveness

The seventh hypothesis (H7) proposed that the entrepreneurial orientation dimension of risk-taking positively moderates the relationship between causation and small business relative profitability. The interactive relationship between risk-taking and causation and the combined relationship with relative profitability was statistically insignificant ($\rho = 0.06$) given the associated p-value is greater than 0.05, **the seventh hypothesis (H7) is not supported**.

The eighth hypothesis (H8) proposed that the entrepreneurial orientation dimension of risk-taking positively moderates the relationship between effectuation and small business relative profitability. The interactive relationship between risk-taking and effectuation and the combined relationship with relative profitability was statistically insignificant ($\rho = 0.72$) given the associated p-value is greater than 0.05, **the eighth hypothesis (H8) is not supported**.

The ninth hypothesis (H9) proposed that positive affect positively moderates the relationship between causation and relative profitability. The interactive relationship between positive affect and causation and the combined relationship with relative profitability was statistically significant ($\rho = 0.03$); however, contrary to prediction, the associated beta and standardized beta coefficients were negative ($ß = -0.12$ and $ß = -0.24$ respectively). This indicates negative, as opposed to positive, moderation. Given this finding, there is evidence for the reverse of the proposed hypothesis; in other words, positive affect negatively moderates the relationship between causation and relative profitability; therefore, **the ninth hypothesis (H9) is not supported**. The interactive relationship is graphicly depicted in Figure 5 which shows that in the presence of high positive affect the relationship between causation and relative profitability is altered significantly.

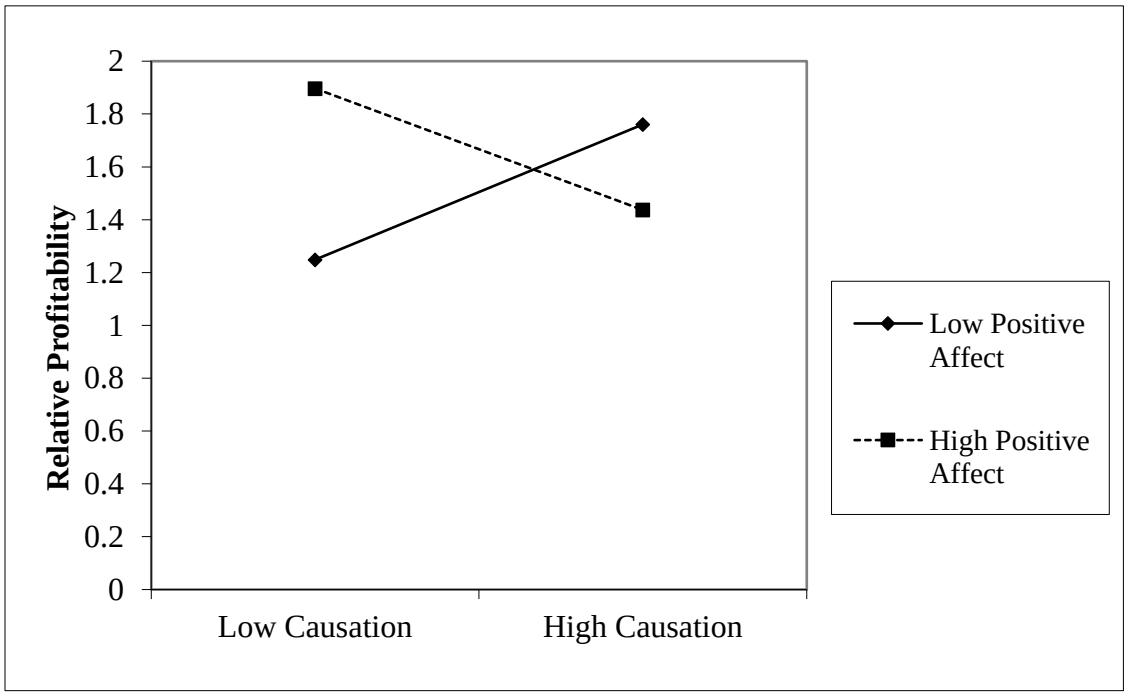

Figure 5: Causation and Relative Profitability Moderated by Positive Affect

The tenth hypothesis (H10) proposed that positive affect positively moderates the relationship between effectuation and relative profitability. The interactive relationship between positive affect and effectuation, and the combined relationship with relative profitability, was statistically significant ($\rho = 0.01$). The associated beta and standardized beta coefficients were positive ($ß = 0.15$ and $ß = 0.28$ respectively). Given the associated p-value is less than 0.05 and the positive directionality of the beta coefficient, **the tenth hypothesis (H10) is supported.** The interactive relationship is graphicly depicted in Figure 6 which shows that in the presence of high positive affect the relationship between effectuation and relative profitability is altered significantly.

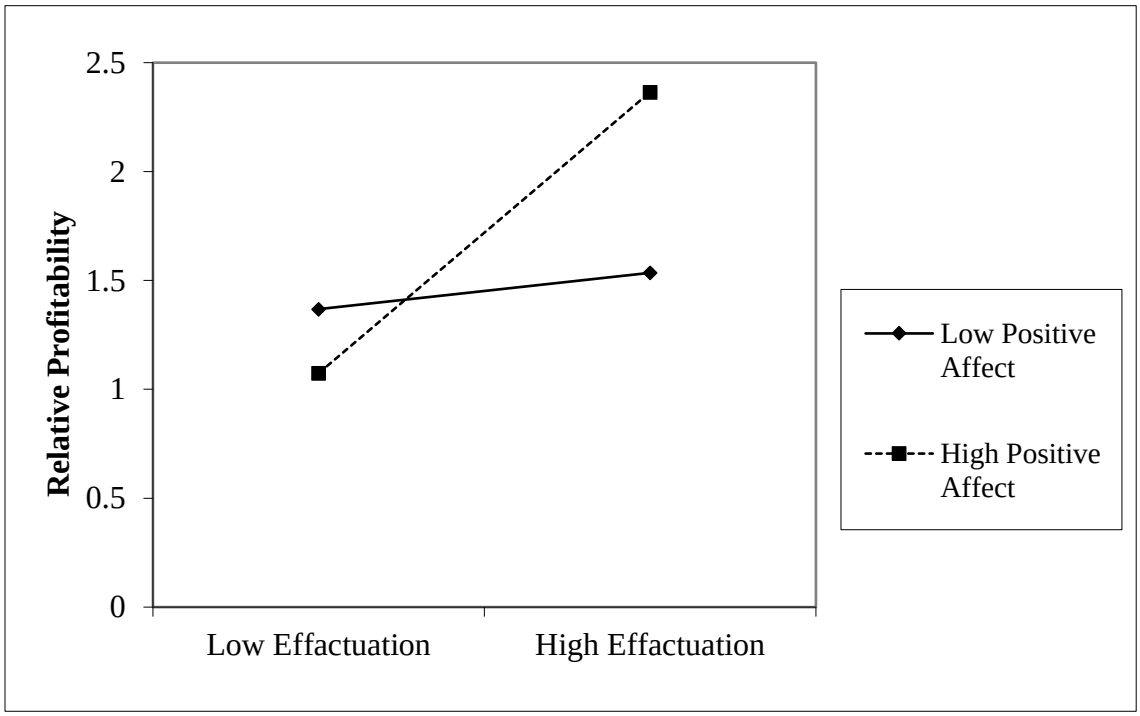

Figure 6: Effectuation and Relative Profitability Moderated by Positive Affect

The eleventh hypothesis (H11) proposed that negative affect negatively moderates the relationship between causation and relative profitability. The interactive relationship between

negative affect and causation, and the combined relationship with relative profitability, was statistically significant ($\rho = 0.01$). As predicted, the associated beta and standardized beta coefficients were negative ($ß = -0.14$ and $ß = -0.24$ respectively). Given the associated p-value is greater than 0.05 and the negative directionality of the beta coefficient, **the eleventh hypothesis (H11) is supported.** The interactive relationship is graphicly depicted in Figure 7 which shows that in the presence of high negative affect the relationship between causation and relative profitability is altered significantly.

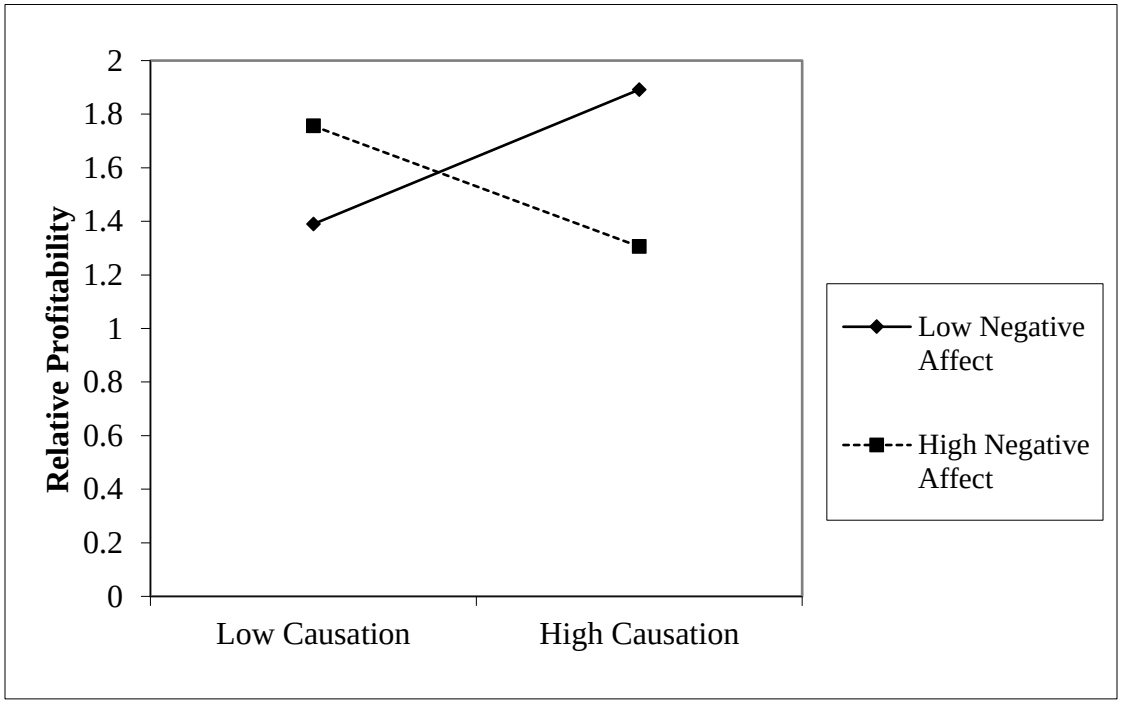

Figure 7: Causation and Relative Profitability Moderated by Negative Affect

The twelfth and final hypothesis (H12) proposed that negative affect negatively moderates the relationship between effectuation and relative profitability. The interactive relationship between negative affect and effectuation, and the combined relationship with relative profitability, was statistically significant ($\rho < 0.01$); however, contrary to prediction, the

associated beta and standardized beta coefficients were positive ($ß = 0.19$ and $ß = 0.32$ respectively). This indicates positive, as opposed to negative, moderation. Given this finding, there is evidence for the reverse of the proposed hypothesis; in other words, negative affect positively moderates the relationship between effectuation and relative profitability; therefore, **the twelfth hypothesis (H12) is not supported.** The interactive relationship is graphicly depicted in Figure 8 which shows that in the presence of high negative affect the relationship between effectuation and relative profitability is altered significantly.

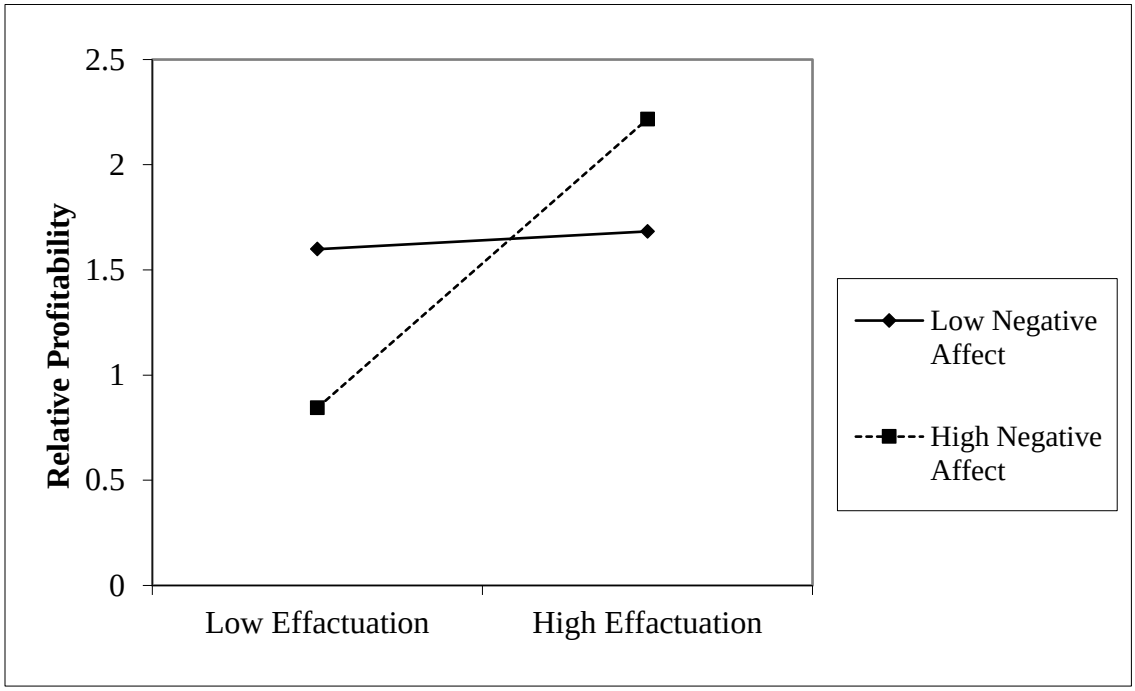

Figure 8: Effectuation and Relative Profitability Moderated by Negative Affect

Table 14: First Model Summary

Model	R Square	R Square Change	Adjusted R Square	F Value	Sig.
Step 1: Controls	0.13	0.13	0.06	1.890	0.02*
Step 2: Independent Variables	0.33	0.20	0.27	5.526	<0.01**
Step 3: Moderating Variables	0.41	0.08	0.34	5.924	<0.01**

Step 4: Interaction Variables	0.52	0.11	0.44	6.186	<0.01**
Dependent Variable: Relative Profit					
** Statistic is significant at the 0.01 level (2-tailed).					
* Statistic is significant at the 0.05 level (2-tailed).					
n = 220					

Table 15: First Regression Table

		Coefficients			t	Sig.	Confidence Lvl. 95.0%		Collinearity Statistics	
		Beta	Std. Error	Std. Beta			Lower Bound	Upper Bound	Tolerance	VIF
Step 1: Controls	Uncertainty Avoidance	0.11	0.05	0.14	2.05	0.04*	0.00	0.22	0.91	1.09
	Age	-0.01	0.01	-0.15	-2.08	0.04*	-0.02	0.00	0.87	1.15
	Female	0.00	0.09	0.00	0.04	0.97	-0.17	0.18	0.82	1.22
	Race: Black	0.04	0.11	0.03	0.39	0.70	-0.18	0.27	0.87	1.15
	Race: Asian	-0.02	0.24	-0.01	-0.09	0.93	-0.49	0.44	0.81	1.24
	Race: Other	0.05	0.16	0.02	0.30	0.77	-0.27	0.37	0.89	1.13
	Employees	0.00	0.00	0.16	2.33	0.02*	0.00	0.01	0.86	1.16
	Years In Business	0.04	0.02	0.14	2.09	0.04*	0.00	0.07	0.92	1.08
	Goods Producing	-0.16	0.09	-0.12	-1.66	0.10	-0.34	0.03	0.83	1.21
	New England	-0.31	0.28	-0.08	-1.12	0.27	-0.87	0.24	0.89	1.12
	Mideast	0.01	0.15	0.01	0.08	0.94	-0.29	0.31	0.71	1.41
	Great Lakes	-0.04	0.17	-0.02	-0.22	0.83	-0.37	0.29	0.74	1.34

	Plains	-0.18	0.19	-0.07	-0.97	0.33	-0.56	0.19	0.78	1.28
	Southwest	0.04	0.12	0.03	0.37	0.72	-0.19	0.27	0.51	1.96
	Rocky Mountain	0.05	0.26	0.01	0.18	0.85	-0.46	0.55	0.89	1.12
	Far West	-0.01	0.15	0.00	-0.04	0.97	-0.29	0.28	0.58	1.73
Step 2: Independent Variables	Effectuation	0.44	0.09	0.46	4.95	<0.01**	0.27	0.62	0.39	2.55
	Causation	0.09	0.09	0.09	1.02	0.31	-0.09	0.27	0.40	2.51
Step 3: Moderating Variables	Positive Affect	0.09	0.08	0.09	1.19	0.24	-0.06	0.25	0.49	2.03
	Negative Affect	-0.02	0.04	-0.04	-0.55	0.58	-0.11	0.06	0.67	1.49
	Innovation	0.17	0.05	0.24	3.24	<0.01**	0.07	0.27	0.55	1.82
	Proactive	0.03	0.06	0.03	0.42	0.67	-0.09	0.14	0.47	2.11
	Risk Taking	0.08	0.06	0.11	1.43	0.15	-0.03	0.20	0.48	2.07
Step 4: Interaction Variables	Effectuation X Innovation	-0.05	0.07	-0.10	-0.82	0.42	-0.19	0.08	0.18	5.65
	Effectuation X Proactive	0.17	0.06	0.32	2.77	0.01**	0.05	0.29	0.19	5.30
	Effectuation X Risk Taking	0.02	0.06	0.04	0.37	0.72	-0.10	0.14	0.19	5.28
	Effectuation X Positive Affect	0.15	0.06	0.28	2.63	0.01**	0.04	0.26	0.22	4.48
	Effectuation X Negative Affect	0.19	0.06	0.32	3.40	<0.00**	0.08	0.30	0.29	3.49
	Causation X Innovation	-0.03	0.06	-0.05	-0.42	0.68	-0.15	0.10	0.21	4.82
	Causation X Proactive	-0.05	0.06	-0.10	-0.93	0.36	-0.16	0.06	0.21	4.87
	Causation X Risk Taking	-0.11	0.06	-0.21	-1.91	0.06	-0.22	0.00	0.21	4.71
	Causation X Positive Affect	-0.12	0.06	-0.24	-2.25	0.03*	-0.23	-0.02	0.22	4.52

	Causation X Negative Affect	-0.14	0.06	-0.24	-2.53	0.01**	-0.26	-0.03	0.29	3.46
Dependent Variable: Relative Profit										
** Beta is significant at the 0.01 level (2-tailed).										
* Beta is significant at the 0.05 level (2-tailed).										

Table 16: Summary of Findings

Hypothesis	Supported	Beta	Standardized Beta	P-Value	Comments
H1	No	0.092	0.092	0.317	
H2	Yes	0.443	0.457	<.001	
H3	No	-0.026	-0.045	0.684	
H4	No	-0.055	-0.099	0.41	
H5	No	-0.053	-0.104	0.352	
H6	Yes	0.168	0.321	0.006	
H7	No	-0.108	-0.207	0.06	
H8	No	0.023	0.043	0.714	
H9	No	-0.125	-0.243	0.025	Reversed
H10	Yes	0.151	0.282	0.009	
H11	Yes	-0.145	-0.241	0.011	
H12	No	0.19	0.323	<.001	Reversed

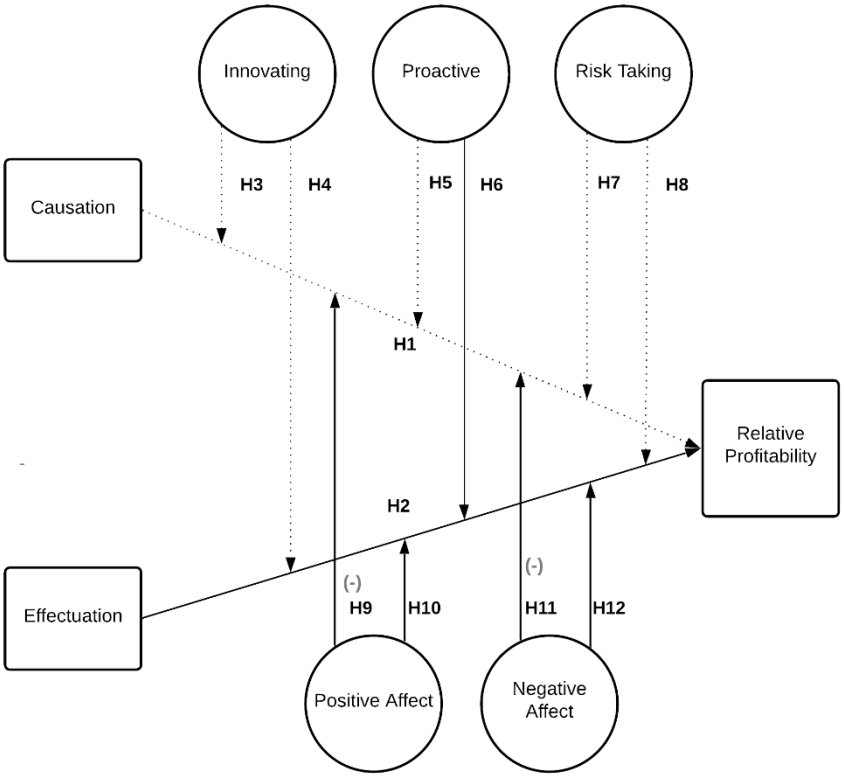

Figure 9: Supported Model

Post-Hoc Analysis

As previously mentioned, a second regression analysis was conducted using entrepreneurial orientation, as a whole, as a moderating variable in lieu of its components. This was done given concerns of the reliability of the measurement scales of each of the dimensions of entrepreneurial orientation. The results of this analysis yielded a model with an adjusted R-square of 0.42, only slightly less than the previously examined model, and an overall significance of less than 0.001. It also found that the interactive relationship between entrepreneurial orientation and causation and the combined relationship with relative profitability was statistically significant (ρ = 0.01); however, contrary to expectation, the associated beta and standardized beta coefficients were negative ($ß$ = -0.22 and $ß$ = -1.28 respectively). This

indicates negative, as opposed to positive, moderation. Given this finding, there is evidence that entrepreneurial orientation negatively moderates the relationship between causation and relative profitability. The interactive relationship between entrepreneurial orientation and causation is graphicly depicted in Figure 10 which shows that in the presence of high entrepreneurial orientation the relationship between causation and relative profitability is altered significantly.

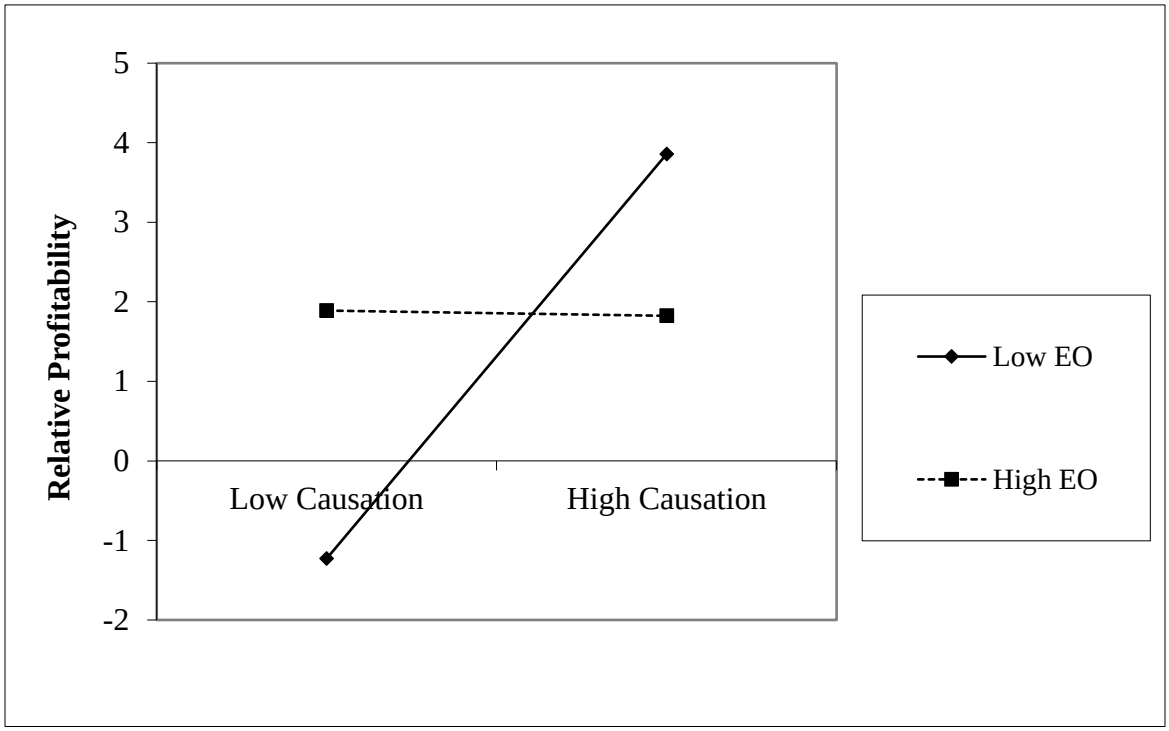

Figure 10: Causation and Relative Profitability Moderated by Entrepreneurial Orientation

Additionally, this analysis also found that the interactive relationship between entrepreneurial orientation and effectuation, and the combined relationship with relative profitability, was statistically significant ($\rho = 0.05$). Consistent with expectation, the associated beta and standardized beta coefficients were positive ($ß = 0.12$ and $ß = 0.21$ respectively), this indicates positive moderation. Given this finding there is evidence that entrepreneurial

orientation positively moderates the relationship between effectuation and relative profitability. The interactive relationship between entrepreneurial orientation and causation is graphicly depicted in Figure 11 which shows that in the presence of high entrepreneurial orientation the relationship between effectuation and relative profitability is altered significantly.

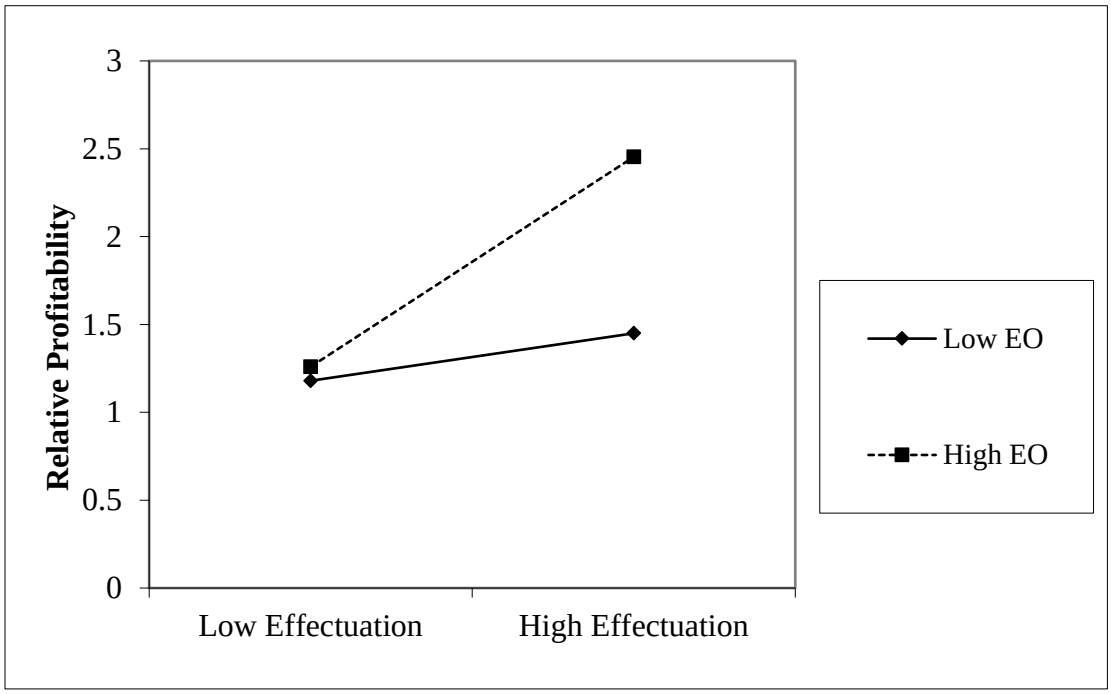

Figure 11: Effectuation and Relative Profitability Moderated by Entrepreneurial Orientation

Table 17: Second Model Summary Table: Entrepreneurial Orientation as Single Construct

Model	R Square	R Square Change	Adjusted R Square	F Value	Sig.
Step 1: Controls	0.13	0.13	0.06	1.89	0.02
Step 2: Independent Variables	0.33	0.20	0.27	5.53	<0.01
Step 3: Moderating Variables	0.40	0.07	0.34	6.32	<0.01
Step 4: Interaction Variables	0.49	0.09	0.42	6.77	<0.01
Dependent Variable: Relative Profit					
** Statistic is significant at the 0.01 level (2-tailed).					
* Statistic is significant at the 0.05 level (2-tailed).					
n = 220					

Table 18: Second Regression Table: Entrepreneurial Orientation as Single Construct

		Coefficients					Confidence Lvl. 95.0%		Collinearity Statistics	
		Beta	Std. Error	Std. Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF
Step 1: Controls	Uncertainty Avoidance	0.11	0.05	0.14	2.05	0.04	0.00	0.22	0.91	1.09
	Age	-0.01	0.01	-0.15	-2.08	0.04	-0.02	0.00	0.87	1.15
	Female	0.00	0.09	0.00	0.04	0.97	-0.17	0.18	0.82	1.22
	Race: Black	0.04	0.11	0.03	0.39	0.70	-0.18	0.27	0.87	1.15
	Race: Asian	-0.02	0.24	-0.01	-0.09	0.93	-0.49	0.44	0.81	1.24
	Race: Other	0.05	0.16	0.02	0.30	0.77	-0.27	0.37	0.89	1.13
	Employees	0.00	0.00	0.16	2.33	0.02	0.00	0.01	0.86	1.16
	Years In Business	0.04	0.02	0.14	2.09	0.04	0.00	0.07	0.92	1.08

	Goods Producing	-0.16	0.09	-0.12	-1.66	0.10	-0.34	0.03	0.83	1.21
	New England	-0.31	0.28	-0.08	-1.12	0.27	-0.87	0.24	0.89	1.12
	Mideast	0.01	0.15	0.01	0.08	0.94	-0.29	0.31	0.71	1.41
	Great Lakes	-0.04	0.17	-0.02	-0.22	0.83	-0.37	0.29	0.74	1.34
	Plains	-0.18	0.19	-0.07	-0.97	0.33	-0.56	0.19	0.78	1.28
	Southwest	0.04	0.12	0.03	0.37	0.72	-0.19	0.27	0.51	1.96
	Rocky Mountain	0.05	0.26	0.01	0.18	0.85	-0.46	0.55	0.89	1.12
	Far West	-0.01	0.15	0.00	-0.04	0.97	-0.29	0.28	0.58	1.73
Step 2: Independent Variables	Effectuation	0.44	0.09	0.46	4.95	0.00	0.27	0.62	0.39	2.55
	Causation	0.09	0.09	0.09	1.02	0.31	-0.09	0.27	0.40	2.51
Step 3: Moderating Variables	Positive Affect	0.06	0.08	0.06	0.81	0.42	-0.09	0.21	0.52	1.92
	Negative Affect	-0.02	0.04	-0.03	-0.44	0.66	-0.10	0.06	0.68	1.48
	Entrepreneurial Orientation	0.28	0.06	0.31	4.54	0.00	0.16	0.40	0.63	1.58
Step 4: Interaction Variables	Effectuation X Positive Affect	0.18	0.06	0.33	3.09	0.00	0.06	0.29	0.23	4.31
	Effectuation X Negative Affect	0.18	0.06	0.31	3.32	0.00	0.07	0.29	0.30	3.31
	Causation X Positive Affect	-0.11	0.05	-0.21	-1.96	0.05	-0.22	0.00	0.23	4.30
	Causation X Negative Affect	-0.14	0.06	-0.23	-2.53	0.01	-0.25	-0.03	0.32	3.12
	Effectuation X Entrepreneurial Orientation	0.12	0.06	0.21	2.01	0.05	0.00	0.24	0.24	4.22

	Causation X Entrepreneurial Orientation	-0.22	0.08	-1.29	-2.61	0.01	-0.39	-0.05	0.01	90.96
Dependent Variable: Relative Profit										
** Beta is significant at the 0.01 level (2-tailed).										
* Beta is significant at the 0.05 level (2-tailed).										

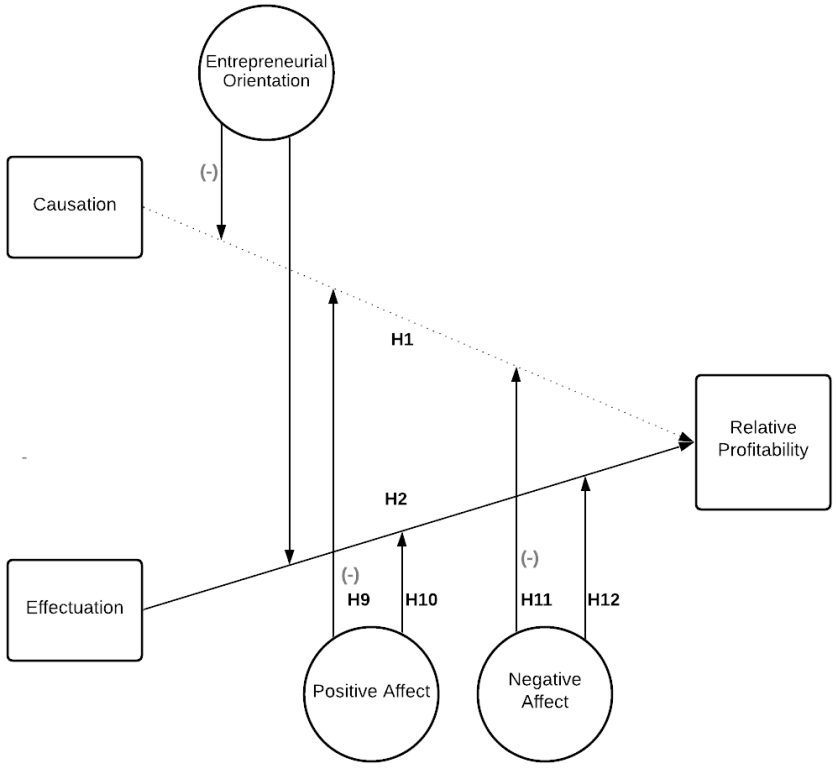

Figure 12: Supported Model with Entrepreneurial Orientation as a Single Construct

CHAPTER 4: DISCUSSION

Overview

This study sought to answer the question of whether small business enterprises can improve their relative profitability through the utilization of decision-making logics. Small and medium sized businesses continue to be essential to economic growth. These firms have historically generated much needed economic growth, and new job creation ("Frequently Asked Questions About Small Business," 2023; Kreiser et al., 2012). Small businesses and small entrepreneurial enterprises operate in a unique, more resource and information scarce strategic environment as compared to larger firms (La Rocca et al., 2009; Liberman-Yaconi et al., 2010). Improved outcomes through improved decision-making can aid small business development. With regard to decision making, emotional concerns are also relevant, though understudied in literature (Robert A Baron, 2008). Evidence suggests that small businesses owner / managers have deeper emotional ties to their enterprise than do their large corporation counterparts. The manner in which small business proprietors handle strategic decision-making is impacted by their emotion (Culkin & Smith, 2000). For this reason, it is considered prudent to include emotional measures in any practical model addressing decision-making logics in the small business and entrepreneurial context. Developing methods of maximizing the probability of increased profitability through the application of the most relevant decision-making logic would be a significant benefit to a small business owner.

The model given in this study is rooted in effectuation theory which conceptualizes two distinct decision-making logics of causation and effectuation. Causation is centered around prediction and goals and effectuation is centered around the owner / manager’s available means

and network (S. D. Sarasvathy, 2001). The model also fills existing gaps in literature by examining the interactive influences of a firm's entrepreneurial orientation and the owner / manager's emotion (affect) upon the outcome of relative profitability. This study has contributed to the body of literature by enhancing the understanding around small business and entrepreneurial decision-making. The findings presented have generalizable applications in both small business literature as well as entrepreneurship literature.

Findings: Decision-Making Logic

Given that the first hypothesis (H1) is not supported; this study finds no statistically significant relationship between causation and relative profitability. Given this, there is no evidence provided by this analysis that indicates that a small business owner / manager's use of causal logic will impact his or her profits. This is surprising given that several studies potentially offer evidence to the contrary (Zhang et al., 2022). This finding, however, is reasonable as this study specifically examines profitability; whereas, other studies examine performance metrics. Additionally, this study focuses exclusively on a narrowly defined sample demographic; small business owners (between five and one hundred employees) in the United States with less than ten years in business. Not only was the sample deliberately limited to firms with less than 100 employees; approximately 70% of the sample reported having between five and 25 employees, which indicates the majority of the sample are very small businesses. Further, the average respondent had been in business approximately five years. Given this situation, it is reasonable to assume that a decision-making logic centered around prediction and analytics would be less useful as such businesses probably lack the resource capital needed for high quality prediction (J.

S. Bracker et al., 1988; Frese et al., 2007). Further, in many cases it is possible that the expenses associated with strategic market analysis negate the profit increase (J. Y. Bracker & Pearson, 1986; Rue & Ibrahim, 1998).

Conversely, this study did find statistical evidence that effectuation predicts relative profitability in small business as the second hypothesis (H2) is supported. Given the nature of the sample and the small business context, this finding is reasonable considering that small businesses often face an inability to make quality predictions. The mindset of leveraging contingencies would logically create a comparative advantage (Kumar et al., 2012). One cannot realistically avoid the unexpected when almost everything is unexpected. Also, the means driven thinking of 'what can I do with what I have' is likely more profitable in an environment characterized by limited or inaccessible resources. Further, if partnerships and networking can effectively increase one's available resources then managing risk by way of affordable loss, rather than predictive gains, likely preserves resources in an environment where prediction accuracy is low, it can be intuitively understood how effectuation would be a predicter of firm relative profitability.

Findings: Entrepreneurial Orientation

The findings around entrepreneurial orientation may appear contradictory. On one hand, as the third, fifth, and seventh hypotheses (H3, H5, H7) are unsupported, there is no support offered by this study for the idea that any of the independent dimensions of entrepreneurial orientation enhance or diminish the relationship between causation and relative profitability; further, the evidence suggests that only the proactiveness dimension of entrepreneurial orientation enhances the relationship between effectuation and relative profitability, due to the

sixth hypothesis (H6) being supported and the fourth and eighth hypotheses (H4, H8) being unsupported. On the other hand, when evaluated as a whole construct, entrepreneurial orientation was shown to negatively moderate or diminish the relationship between causation and relative profitability and positively moderate or enhance the relationship between effectuation and relative profitability. It is possible that the additive properties of the dimensions of entrepreneurial orientation have synergistic effects. Future research should use latent profile analysis to further examine these synergistic effects (Stanley, Hernández-Linares, López-Fernández, & Kellermanns, 2019). Further, it should again be noted that each of the dimensions of entrepreneurial orientation (innovating, proactiveness, and risk-taking) measured in this study reported less than ideal reliability statistics (Cronbach's Alpha less than 0.70). As a result, the measurement methods and conceptualization of each entrepreneurial orientation dimension and the specific influences of each dimension may require re-examination in future research (Anderson et al., 2015).

The difficulty in assessing the influence of each aspect of entrepreneurial orientation notwithstanding, this study does provide reliable insight into the role of entrepreneurial orientation as a whole construct. Evidence is presented that entrepreneurial orientation negatively moderates or diminishes the influence of causation on relative profitability. This finding is perhaps initially counterintuitive, but understandable upon reflection. Given the context is smaller and newer businesses, where the prevailing environment is one of low access to capital, including knowledge capital, a business owner / manager relying more on a decision-making logic rooted in prediction and analysis, would likely find him / herself making decisions based on a poor representation of the future state of the market. This dilemma is compounded when entrepreneurial orientation is introduced because entrepreneurial orientation is defined by

having a proclivity toward newness (innovation), seeking first mover advantages (proactiveness), and taking measured risks. This can put owner / managers in a situation where they are investing time and money into introducing products and services into an untested or improperly tested market with low demand for said products or services; or in situations where they are entering competitive markets in which they are unknowingly outmatched; or in situations where they are taking risks with poor measures and loosing assets that they cannot afford to lose. In this environment, given the nature of causal decision-making logic, "innovation" may translate into "erratic," "proactive" may translate into "bungling," and risk-taking may translate into "reckless."

When examining the relationship of entrepreneurial orientation and effectuation, this study finds a positive moderating influence on relative profitability. Effectuation is not reliant on prediction of the future but is centered more on an understanding of the present and, as a result, is more forgiving of the unknown as the business owner / manager makes decisions based on those things that they can manage (S. D. Sarasvathy et al., 2001). As a result, making decisions utilizing effectuation with higher levels of entrepreneurial orientation appear to be an enhancement, given the small business context. Increasing proactivity, for example, would likely lead the business owner / manager to more proactively develop relationships and expand his or her means, having a more positive impact on relative profitability (S. Sarasvathy et al., 2014).

Findings: Affect

This study found evidence that positive affect negatively moderates the relationship between causation and relative profitability. This finding is suppressing as it represents not only a failure to support the ninth hypothesis (H9); but, a complete reversal of said hypothesis. This

finding; however, is not the first instance of research showing evidence of positive affect having less than desirable implications among entrepreneurs and small business owners (Robert A Baron et al., 2012). High levels of positive affect have been related to decreased self-regulation, misconstrued perceptions, and altered cognition; all of which influences decision making (Robert A Baron et al., 2012; Robert A Baron, Tang, & Hmieleski, 2011). Further, the adverse effects of high positive affect may be more pronounced in smaller firms as compared to larger firms. This is likely due to the decreased social scripts in these environments, making the impact of the detriments of high positive affect, such as lower self-regulation, more pronounced (Robert A Baron et al., 2011). This study also found that positive affect enhances the relationship between effectuation and relative profitability. This finding is consistent with the proposed tenth hypothesis (H10). Benefits of positive affect, such as increased determination or alertness may be more beneficial when paired with a decision-making logic that is more centered around networking and forming strategic partnerships (Tang et al., 2021).

Also, consistent with the proposed eleventh hypothesis (H11), this study finds that negative affect negatively moderates the relationship between causation and relative profitability. This finding is interesting as it indicates that high levels of either positive or negative affect may be problematic as either introduces diminishing gains from causation with regard to relative profitability. Inconsistent with the proposed twelfth hypothesis (H12), this study finds that negative affect positively moderates or enhances the relationship between effectuation and relative profitability. This is finding also represents the complete reverse of what the said hypotheses predicted. Therefore, it would seem that either positive or negative affect offer increasing returns when paired with effectual decision-making logic.

Overall Findings

As far as answering the research question as to whether small business enterprises can improve their relative profitability through the utilization of decision-making logics, this paper provides evidence that the answer is: yes. Taken together the findings of this study shows that small business owner / manager's use of effectuation is a much stronger predictor of relative profitability than causation. As a matter of fact, the findings suggest that causation may have no ability to predict relative profitably at all. This is interesting as causation has been the model decision-making logic formally taught in business schools throughout the country for decades (S. D. Sarasvathy, 2001; S. D. Sarasvathy et al., 2001). This study finds that, at least in the context of small and entrepreneurial businesses, effectuation may offer more tangible improved results with regard to profitability.

The study also indicates that entrepreneurial orientation likely enhances the relationship between effectuation and relative profitability. This means that as owner/ managers orient their businesses toward being more "entrepreneurial" their use of effectuation may have more pronounced impact on their relative profitability. The findings also show that increased positive or negative affect influence the relationship between the decision-making logics and relative profitability. According to the findings, increasing affect (positive and/or negative) can potentially diminish any returns that causation might have yielded. Conversely, increasing affect (positive and/or negative) can potentially enhance the probable returns yielded by effectuation.

Contributions to Literature

This study contributes to the overall body of literature in at least the following three ways. First, this paper contributes to the literature by filling existing gaps that have existed around the understanding of the interactive relationship between decision-making logics, entrepreneurial orientation, affect, and the influence of these constructs on a small business's relative profitability. This paper expands the understanding by directly examining the interaction between the organizational construct of entrepreneurial orientation and the individual constructs of effectuation and causation specifically within the small business and entrepreneurial context.

Secondly, the model also fills existing gaps in literature by examining the interactive influences of firm's entrepreneurial orientation and the owner / manager's emotion (affect) upon the outcome of relative profitability. In doing so, it provides evidence that affect (positive or negative) influences the relationship of decision-making logics on the tangible outcome of relative profitably, at least within the small business and entrepreneurial environments. Researchers should, therefore, consider implications of emotion when examining tangible impacts of decision-making constructs.

Finally, this study contributes to entrepreneurial research and small business research as it utilizes a sample composed exclusively of small and new business, radically diversified across almost every industry group and various geographical regions throughout the United States. By doing so it provides an argument for generalizability to all small businesses throughout the United States.

Practical Implications

The practical implications of the overall findings of this study include calling into question the conventional wisdom of including forecasts and projections in small business planning documents, as many firms clearly find success without reliance on prediction (S. D. Sarasvathy, 2001). Such projections have been traditionally required by small business lending institutions ("SBA Credit Standards," 2020). As a result, a causal decision-making logic, or at least elements thereof, are being imposed on small business owners, and funding opportunities withheld, when such imposition and restrictions may be unnecessary or ill-suited to the small business context.

Additionally, given that effectuation was found to be a more beneficial decision-making logic for small businesses, evaluating a small business owner's network and their ability to leverage said network may be a stronger prediction of future profitability than forecasting (Carrion et al., 2017; Wiltbank, Dew, Read, & Sarasvathy, 2006; Wiltbank et al., 2009). Also, business incubators, municipality supported small business support agencies, and other small business and entrepreneurial support organizations may be more helpful by offering small business owners' education around effectuation principles and building effective networking opportunities as well as offering workshops and trainings around enhancing entrepreneurial orientation among the firms in their supported small business communities.

Limitations and Suggestions for Future Research

The limitations of this study should be acknowledged. First, the sample is limited to small business firms in the United States, which limits the application of generalizability to small

businesses in the United States. Future research can examine any possible cultural or multinational constructs that may be present. Another limitation of the study deals with the aforementioned lack of reliability with regard to the measurement of the dimensions of entrepreneurial orientation; innovating, proactiveness, and risk-taking. The data collection method combined with the measure may have been insufficient to effectively measure each component of entrepreneurial orientation accurately. However, it does appear that the scale measurements were able to assess entrepreneurial orientation generally. Given this situation, the findings around each dimension of entrepreneurial orientation may be less than accurate due to the lower fidelity of the scale measurement. Also, as previously discussed, it is possible that the additive properties of the dimensions of entrepreneurial orientation have synergistic effects. Future research should use latent profile analysis to further examine these synergistic effects (Stanley et al., 2019). Future researchers may also wish to more closely examine the interactive effects of innovation, proactiveness, and risk-taking with causation and effectuation to offer confirmation of the findings. A third limitation of this study is the way in which relative profitability is measured. The relative profitability measure in this study is self-reported and based on the owner / manager's perception at the time of survey completion. As such it may be particularly prone to error and response bias. Acquiring quality financial data on small business firms at scale is a significant challenge for researchers. It may be plausible for future researchers to study smaller samples of small business owners who are willing to allow access to actual financial statements or tax returns. Finally, this paper is limited in application as the study's cross-sectional design is only able to show correlation and is unable to show direction of causality. Future researchers should consider a longitudinal examination of the presented model to provide insight into the temporal ordering of causes and effects.

This paper does not examine nor control for any potential influences of ownership structure (limited liability company verses corporation, etc.) as business entity type is assumed to have a negligible influence on the owner / manager's decision-making process; however, future research may wish to investigate the validity of said assumption. Also, this paper does not deeply examine the interplay between cognition and affect within the small business and entrepreneurial landscape. Such examination was beyond the scope of this study. However, this study does show evidence that such an interplay between cognitive decision-making logics and affect exists. Further research is required to explore the specific interactions of affect and decision-making and to offer deeper explanations for those interactions. Additionally, this paper also does not explore the interactions of other potentially relevant psychological constructs beyond positive and negative affect. Personality dimensions, for example, also effect cognition; and, by extension, may also influence the relationship between cognitive decision-making logics of owner / managers and firm outcomes (Ciavarella, Buchholtz, Riordan, Gatewood, & Stokes, 2004; Tett, Jackson, & Rothstein, 1991). Exploring other phycological constructs such as personality dimensions could potentially provide enhancement to the model presented in this study.

Conclusion

This paper explores the impact of causation and effectuation on small business relative profitability and the moderating influences of both entrepreneurial orientation and emotion or affect. The study builds upon the literature of effectuation theory and introduces a theoretical model for a practical application of decision-making logics specifically relevant to small businesses and entrepreneurial enterprises. The results of the study suggest that

effectuation may be a preferable decision-making logic for small business owner / managers and small enterprise entrepreneurs.

This study adds to existing practical understanding by specifically examining the small business environment recognizing its unique characteristics. Though previous researchers have evaluated the impact of a firm's entrepreneurial orientation on small business performance, this study examines the interplay between the decision-making logics of causation and effectuation and entrepreneurial orientation which is relevant, specifically in the small business context, because entrepreneurial orientation is centered around the decision-making proclivities of the firm which is greatly influenced by the decision-making disposition of the firm's owners / managers (An et al., 2019; Jeffrey G Covin & Slevin, 1988; Dew et al., 2009). Not only does the decision-making profile of the firm's owner / manager influence outcomes; but, the owner / manager's individual attitudes, feelings, and emotions (collectively referred to as 'affect') also influences outcomes (Robert A Baron, 2004, 2008). This study presents evidence that small business owners and entrepreneurs can increase their potential for higher relative profits through the employment of effectuation and that the employment of effectual decision-making logic is moderated by their emotions. It also provides evidence that metrics related to effectuation may be better predicters of profitability than traditional metrics associated with causation.

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APPENDIX A: SURVEY

Section 1: Please provide some background information about yourself.
Age: _____ years. Gender: ___ Male ___ Female

Which of the following races do you consider yourself to be?

White_____ Black or African American_____ Spanish Asian _____ Other race_____

Section 2: Please provide some background information about your firm.
Are you a small business owner? YES NO

How many employees does your firm have? _____

How many owners does your firm have? _____

Location of the firm? (state): _____ Firm Industry: _____

How old is your firm? (years): _____

Section 3: How would you rate your firm's current performance as compared to your competitors? (1 = Much Worse; 2 = Worse; 3 = About the Same; 4 = Better; 5 = Much Better).

Growth in sales	1	2	3	4	5
Growth in market share	1	2	3	4	5
Growth in number of employees	1	2	3	4	5
Growth in profitability	1	2	3	4	5
Return on equity	1	2	3	4	5
Return on total assets	1	2	3	4	5
Profit margin on sales	1	2	3	4	5
Ability to fund growth from profits	1	2	3	4	5

Section 4: In the past three years, do the following statements represent how your firm went about doing business? (1 = Strongly disagree; 5 = Strongly agree).

Firm activities were specified on the basis of given means/resources.	1	2	3	4	5
The targets were usually vaguely defined in the beginning.	1	2	3	4	5
Given means/resources had been the starting point.	1	2	3	4	5
The specification was predominantly based on given resources.	1	2	3	4	5

Given means had significantly impacted on the framework of the activity.	1	2	3	4	5
Considerations about potential losses were decisive for the selection of the option.	1	2	3	4	5
Budgets were approved on the basis of considerations about acceptable losses.	1	2	3	4	5
The selection of option was mostly based on a minimization of risks and costs.	1	2	3	4	5
Decisions on capital expenditures were primarily based on potential risks of losses.	1	2	3	4	5
We tried to reduce risks through internal or external partnerships and agreements.	1	2	3	4	5
We jointly decided with our partners/stakeholders on the basis of our competences.	1	2	3	4	5
Our focus was rather on the reduction of risks by approaching potential partners and customers.	1	2	3	4	5
In order to reduce risks, we started partnerships and received precommitments.	1	2	3	4	5
We always tried to integrate surprising results and findings during the process—even though this was not necessarily in line with the original target.	1	2	3	4	5
Our process was flexible enough to be adjusted to new findings.	1	2	3	4	5
New findings influenced the target.	1	2	3	4	5
The planning was carried out in small steps during the activity implementation.	1	2	3	4	5
Despite potential delays in execution, we were flexible and took advantage of opportunities as they arose.	1	2	3	4	5
Potential setbacks or external threats were used as advantageously as possible.	1	2	3	4	5

Section 5: In the past three years, do the following statements represent how your firm went about doing business? (1 = Strongly disagree; 5 = Strongly agree).

Firm activities were specified on the basis of given targets.	1	2	3	4	5
The targets were clearly defined in the beginning.	1	2	3	4	5
Required means/resources have been determined on the basis of given targets.	1	2	3	4	5
The specification was predominantly based on given targets.	1	2	3	4	5
Given targets have significantly impacted on the framework of the activity.	1	2	3	4	5

Considerations about potential returns were decisive for the selection of the option.	1	2	3	4	5
Budgets were approved based on calculations of expected returns (e.g., ROI).	1	2	3	4	5
The selection of the options was mostly based on analyses of future returns.	1	2	3	4	5
We mainly considered the potential odds of the activity.	1	2	3	4	5
We tried to identify risks of the activity through thorough market and competitor analyses.	1	2	3	4	5
We have analyzed the market and external trends to better assess future developments.	1	2	3	4	5
We have taken our decisions on the basis of systematic market analyses.	1	2	3	4	5
In order to identify risks, we focused on market analyses and forecasts.	1	2	3	4	5
We only integrated surprising results and findings when the original target was at risk.	1	2	3	4	5
Our processes focused on reaching the target without any delay.	1	2	3	4	5
New findings did not influence the target.	1	2	3	4	5
The planning was basically carried out at the beginning.	1	2	3	4	5
We first took care of reaching our initially defined targets without delays.	1	2	3	4	5
With the use of upfront market analyses, we tried to avoid setbacks or external threats.	1	2	3	4	5

Section 6: This scale consists of a number of words that describe different feelings and emotions. Read each item and then circle the appropriate answer next to that word. Indicate the extent you generally feel this way, that is, how you feel on the average. (1 = Not at all; 5 = Extremely).

	Not At All	A little	Moderately	Quite A Bit	Extremely
Interested	1	2	3	4	5
Distressed	1	2	3	4	5
Excited	1	2	3	4	5
Upset	1	2	3	4	5
Strong	1	2	3	4	5
Guilty	1	2	3	4	5
Scared	1	2	3	4	5
Hostile	1	2	3	4	5

Enthusiastic	1	2	3	4	5
Proud	1	2	3	4	5
Irritable	1	2	3	4	5
Alert	1	2	3	4	5
Ashamed	1	2	3	4	5
Inspired	1	2	3	4	5
Nervous	1	2	3	4	5
Determined	1	2	3	4	5
Attentive	1	2	3	4	5
Jittery	1	2	3	4	5
Active	1	2	3	4	5
Afraid	1	2	3	4	5

Section 7: Each of the following items consists of a pair of statements which represent two extremes Please indicate the number on the scale that best represent your firm.

In general, the top managers of my firm favor…						
a strong emphasis on the marketing of tried-and-true products or services.	1	2	3	4	5	a strong emphasis on R&D, technological leadership, and innovations.
How many new lines of products or services has your firm marketed in the past five years (or since its establishment)?						
No new lines of products or services.	1	2	3	4	5	Very 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	Changes in product or service lines have usually been quite dramatic.
In dealing with its competitors, my firm…						
typically responds to actions which competitors initiate.	1	2	3	4	5	typically initiates actions to which competitors then respond.
is very seldom the first business to introduce new products/services, administrative techniques, operating technologies, etc.	1	2	3	4	5	is very often the first business to introduce new products/services, administrative techniques, operating technologies, etc.
my firm typically seeks to avoid competitive clashes, preferring a "live-and-let-live" posture	1	2	3	4	5	my firm typically adopts a very competitive, "undo-the-competitors" posture
In general, the top managers of my firm …						

have a strong proclivity for low-risk projects (with normal and certain rates of return)	1	2	3	4	5	have a strong proclivity for high-risk projects (with chances of very high returns)
believe that owing to the nature of the environment, it is best to explore it gradually via cautious, incremental behavior.	1	2	3	4	5	believe that owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives.
When confronted with decision-making situations involving uncertainty, my firm typically …						
adopts a cautious, "wait-and-see" posture in order to minimize the probability of making costly decisions.	1	2	3	4	5	adopts a bold, aggressive posture in order to maximize the probability of exploiting potential opportunities.

Section 8: Please indicate your level of agreement with each of the statements below (1 = Strongly disagree; 5 = Strongly agree).

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
It is important to have job requirements and instructions spelled out in detail so that employees always know what a they are expected to do.	1	2	3	4	5
Managers expect employees to closely follow instructions.	1	2	3	4	5
Rules and regulations are important because they inform employees what the organization expects of them.	1	2	3	4	5
Standard operating procedures are helpful to employees on the job.	1	2	3	4	5
Instructions for operations are important for employees on the job.	1	2	3	4	5

Section 9: Please Answer the following.

According to your most recent P&L statement what is your firm's total revenue: _____

According to your most recent P&L statement what is your firm's cost of sales (COS); AKA cost of goods sold (COGS): _____