

ACQUISITION OF PRIVATE FIRMS

by

Leon Faifman

A Dissertation Submitted to the Faculty of

College of Business

In Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy

Florida Atlantic University

Boca Raton, FL

December 2018

Copyright by Leon Faifman 2018

ACQUISITION OF PRIVATE FIRMS

by

Leon Faifman

This dissertation was prepared under the direction of the candidate's co-advisors, Dr. Kimberly Ellis and Dr. Peggy Golden, Department of Management Programs, and has been approved by all members of the supervisory committee. It was submitted to the faculty of the College of Business and was accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

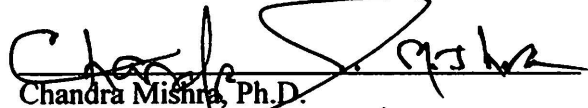
SUPERVISORY COMMITTEE:



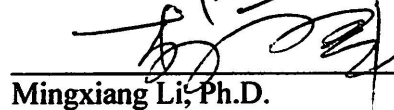
Kimberly Ellis, Ph.D.
Dissertation Co-Advisor



Peggy Golden, Ph.D.
Dissertation Co-Advisor



Chandra Mishra, Ph.D.



Mingxiang Li, Ph.D.



Roland Kidwell, Ph.D.
Chair, Department of Management
Programs



Daniel Gropper, Ph.D.
Dean, College of Business



Khaled Sobhan, Ph.D.
Interim Dean, Graduate College

December 3, 2018
Date

ACKNOWLEDGEMENTS

The author wishes to express his gratitude to his Co-Advisors, Dr. Kimberly Ellis and Dr. Peggy Golden, and to the dissertation committee members, Dr. Chandra Mishra and Dr. Mingxiang Li for their dedication, guidance, patience, and support. The author would like to further thank his Co-Advisor, Dr. Peggy Golden, for working after her retirement, as well as her support during the entire Ph.D. program.

ABSTRACT

Author: Leon Faifman
Title: Acquisition of Private Firms
Institution: Florida Atlantic University
Dissertation Co-Advisors: Dr. Kimberly Ellis
Dr. Peggy Golden
Degree: Doctor of Philosophy
Year: 2018

Mergers and acquisitions (M&As) of private target firms is a common phenomenon and being acquired is the desired outcome for some private firms, as it is the path to wealth creation for these firm's owners and investors. However, this M&A type has received limited attention in the literature, especially from the perspective of the target firm. Furthermore, neither a theoretical model to explain the phenomenon where the goal of the target firm is to be acquired in M&A, nor an indicator to gauge wealth creation for such firms were identified in the review of the literature.

This paper established that, because being acquired in a M&A may be the goal, the wealth generated from the M&A is the outcome or performance indicator for such firms. The outcomes of M&As depend, among other factors, on the acquiring firm's perception of the target firm's value. Thus, this paper coined the term 'private firm's attractiveness as an acquisition target', and built on the resource based view of the firm

and signaling theory to identify factors that influence a private firm's attractiveness to acquirers. Furthermore, private firm's attractiveness as an acquisition target was used as the bridge between the acquiring firm perspective and target firm perspective in a M&A.

The resource-based view of the firm and the signaling theory were used jointly in building the theoretical framework for hypotheses development. Hypotheses were tested using a sample of 222 acquisitions of US private target firms by US public acquiring firms. Hierarchical regression with inverse mills ratio, as well as two-step Heckman model were used to address the potential selection hazard.

Results provided strong support for most hypotheses, and showed that investor involvement, target firm's industry innovativeness, and target firm's emphasis on growth in human capital were positively related to the private firm's attractiveness as an acquisition target. Furthermore, the effects of emphasis on growth in human capital were stronger when the target firm's growth in revenue was lower and when the target firm operated in a more innovative industry. The effects of emphasis on growth in revenue were stronger when the target firm operated in a less innovative industry.

DEDICATION

I dedicate this dissertation paper to my loving, brilliant, beautiful, and overall amazing wife, Caroline Coulter Faifman. Caroline – thank you for being there for me throughout the entire process, helping and supporting me in every way, and doing it all while being the absolutely perfect wife and mother. Thank you, Caroline!

I also dedicate this work, as part of my overall academic accomplishments, to my parents, Alexander and Irina Faifman, who have believed in me, always supported me in the pursuit of my dreams, and enabled me to earn my education.

ACQUISITION OF PRIVATE FIRMS

LIST OF TABLES	xi
LIST OF FIGURES	xii
CHAPTER 1. INTRODUCTION	1
1.1 Preface	1
1.2 Acquirer Side in M&As	2
1.3 Target Side in M&As	4
1.4 Literature Gaps and Intended Contributions	6
1.5 Research Question and Next Steps.....	12
CHAPTER 2. LITERATURE REVIEW	14
2.1 General Entrepreneurship.....	15
2.2 Target Side	18
2.2.1 Firm Exit as Failure.....	19
2.2.2 Firm's Exit via M&A and Exit via Liquidation	22
2.2.3 Target Firm Factors.....	30
2.2.4 Venture Capital Investors	32
2.2.5 Section Conclusion.....	34
2.3 Acquiring Side.....	35
2.3.1 M&A Motivation.....	37
2.3.2 Target Selection	41
2.3.3 Acquisition Premiums	42

2.3.4 Innovative Outcomes	43
2.3.5 M&A Performance	46
2.4 Chapter Conclusion – Bridging the Two Sides	49
CHAPTER 3. HYPOTHESES DEVELOPMENT	55
3.1 Introduction	55
3.1.2 Joint Perspective	58
3.1.3 Attractiveness	60
3.2 Theoretical Framework	62
3.2.1 Resource-based View	63
3.2.2 Signaling Theory	64
3.3 Hypotheses Development	66
3.3.1 A Reliable Signal	66
3.3.2 Third Party	68
3.3.3 Target Firm’s Industry Innovativeness	69
3.3.4 Target Firm’s Growth Emphasis	72
3.3.5 Moderating Effects of Target Firm’s Industry Innovativeness	76
3.4 Conclusion	79
CHAPTER 4. METHODS	81
4.1 Data	81
4.2 Dependent Variable	82
4.3 Independent Variables	83

4.4 Control Variables	84
4.5 Analysis and Results	86
4.7 Robustness.....	103
CHAPTER 5. DISCUSSION.....	105
5.1 Contributions.....	105
5.2 Implications.....	112
5.3 Limitations and Future Research.....	114
5.4 Conclusion.....	116
APPENDICES	118
REFERENCES	121

LIST OF TABLES

Table 1: Summary of Findings in the Target Perspective Literature.....	19
Table 2: Summary of Findings in the Acquiring Perspective Literature	38
Table 3: Descriptive Statistics and Correlation Matrix.....	87
Table 4: Multicollinearity Analysis	88
Table 5: T-test and Comparison of Sub-sample: SDC Match vs. Online.....	89
Table 6: T-test and Comparison of Sub-sample Full SDC Match vs. Buyer Only SDC Match	90
Table 7: Hierarchical Regression – Private Firm’s Attractiveness as Acquisition Target	93
Table 8: Heckman Two-Step Model – First Step - Full Model	99
Table 9: Heckman Two-Step Model – Second Step - Full Model.....	101

LIST OF FIGURES

Figure 1: Private Firm's Attractiveness as an Acquisition Target	61
Figure 2: Two-way Interaction Plot – Emphasis on Growth in Human Capital and Emphasis on Growth in Revenue.....	94
Figure 3: Two-way Interaction Plot – Emphasis on Growth in Human Capital and Target Firm's Industry R&D Intensity	96
Figure 4: Two-way Interaction Plot – Emphasis on Growth in Revenue and Target Firm's Industry R&D Intensity.....	96
Figure 5: Two-way Interaction Plot – Investor Involvement and Target Firm's Industry R&D Intensity.....	97

CHAPTER 1. INTRODUCTION

1.1 Preface

M&As are a common phenomenon occurring between two parties: an acquiring firm and the selling (or target) firm. There were over 50,000 M&A transactions in 2017 valued at a total of \$3.66 trillion (Deloitte, 2018; Statista, 2018). It is estimated that M&As of private target firms account for 60%-75% of all M&A deals, and 85% of the deals that take place in technology-related sectors are of private target firms (Capron & Shen, 2007; Mangipudi, Subramanian, & Vasu, 2017)

The stream of literature examining M&As from the acquiring perspective, mostly studies in the field of strategic management, is well developed (Cartwright & Schoenberg, 2006; Dikova & Brouthers, 2016; Graebner, Eisenhardt, & Roundy, 2010; Haleblian, Devers, McNamara, Carpenter, & Davison, 2009; Hitt et al., 2009; King, Dalton, Daily, & Covin, 2004; Rossi, Tarba, & Raviv, 2013). However, the literature stream that examines M&As from the target perspective, particularly literature in the field of entrepreneurship, is limited (DeTienne, McKelvie, & Chandler, 2014; Graebner et al., 2010; Wennberg & DeTienne, 2014). And, few studies in either field focus on private target firms though a significant portion of M&A activity involves small firms that are privately owned (Capron & Shen, 2007; Granstrand & Sjölander, 1990). As such, this dissertation examines the M&A literature in the fields of strategic management and entrepreneurship, focusing on the phenomenon (i.e., acquisitions of private firms) from both sides of the transaction

The chapter begins with an overview of the literature that examines M&As from the acquiring firm perspective and continues with an overview of the literature that examines M&As from the target firm perspective. The chapter then discusses the gaps in the literature, and develops the theoretical framework that is used in the paper. The chapter concludes with the summary of the intended contributions.

1.2 Acquirer Side in M&As

Much of the M&A literature in the strategy field places emphasis on the acquiring side (Graebner et al., 2010; Hitt et al., 2009; Rossi et al., 2013). Among the common constructs of interest found in the literature are M&A outcomes for the acquiring firm, reasons for engagement in M&As, and issues of fit between the acquiring firm and its target. As such, research has identified various acquiring firm attributes and contextual factors that are related to M&A outcomes or performance for the acquiring firm (Brueller, Carmeli, & Drori, 2014; Haleblian et al., 2009; Hitt et al., 2009; King et al., 2004; Rossi et al., 2013).

Although some of the variance in outcomes of M&As for acquiring firms still remains to be explained, explanations for some of the variance can be found in the literature. , The research in the strategy M&A literature is grounded in theory, and the importance of building on and extending theory is emphasized (Bettis, Gambardella, Helfat, & Mitchell, 2014; Cording, Christmann, & Weigelt, 2010). There are various theoretical perspectives used in the literature such as the resource base view of the firm (Barney, 1991) and dynamic capabilities (Eisenhardt & Martin, 2000), and scholars have identified various rationales to engage in M&A such as acquisition of new or

complementary capabilities and resources, acquisition of knowledge, and creation of synergies (Graebner et al., 2010; Hitt et al., 2009; Rossi et al., 2013).

The logics in the process as well as in capturing the outcomes are rational and follow the rationale of the theoretical framework used. For example, strategy M&A literature that examines M&As from the acquiring perspective may rely on the RBV of the firm and view the target firm as a bundle of resources that may be acquired and integrated to achieve synergies for the acquiring firm (Barney, 1991; Cartwright & Schoenberg, 2006; Hitt et al., 2009; King, Slotegraaf, & Kesner, 2008; Seth, 1990). The theoretical framework can explain the phenomenon and, thus, understand and capture outcomes such as performance while explaining observed variations in the construct of interest.

In essence, from the perspective of the acquiring firm, the existence of the M&A phenomenon, reasons to engage in M&As, M&A-related processes, and M&A outcomes are explained by and grounded in theory. Research offers both theoretical explanations and empirical evidence about the rationale for engagement in M&As as well as management of M&A processes and thus, an understanding of what performance is and how it can be captured (Bettis et al., 2014; Cording et al., 2010).

In conclusion, strategy M&A literature relies on theoretical frameworks that can explain (a) the acquiring firm's existence and goals or direction, (b) reasons for M&A engagement, and (c) outcome and performance measures associated with M&As. Therefore, scholars have some theoretical bases for understanding why acquiring firms engage in M&As and the processes and factors that influence variations in M&A performance and other outcomes experienced by the acquiring firm.

Most of this research tends to focus on publicly held targets or mixed samples of public and private targets. However, the majority of acquisitions involve targets that are private firms. In such instances, acquirers may evaluate the potential value creation as the outcome of the acquisition (Graebner et al., 2010; Puranam & Srikanth, 2007; Rossi et al., 2013), and therefore traditional indicators of value such as target firm cash flows and sales may be of lesser importance than other factors such as its resources and capabilities (Graebner et al., 2010; Puranam & Srikanth, 2007; Rossi et al., 2013).

1.3 Target Side in M&As

This section provides a brief examination of the literature stream that examined M&As of private firms from the target firm perspective. This literature is often referred to as a stream within the broader exit literature, focusing on firm survival and discontinuation (Bates, 2005) and on types of firm exit, mostly through liquidation and M&A (Åstebro & Winter, 2012; Balcaen, Manigart, Buyze, & Ooghe, 2012; Coleman, Cotei, & Farhat, 2013). The literature on entrepreneurial exit (Åstebro & Winter, 2012; DeTienne, 2010; DeTienne & Cardon, 2012; DeTienne & Chandler, 2010; DeTienne et al., 2014; Wennberg & DeTienne, 2014; Wennberg, Wiklund, DeTienne, & Cardon, 2010) is also briefly mentioned, with the intention to show that some private firms are founded and developed with the goal of being sold.

First, when the private firm is acquired, it is viewed as exiting the industry. The other primary alternative for a firm to exit the industry is liquidation. While some research argues that firm exit from an industry is a failure (Bates, 2005; Coleman et al., 2013), other research on firm exit from an industry has found that it may be a form of

success (Balcaen et al., 2012; Cefis & Marsili, 2011, 2012; DeTienne & Cardon, 2012; DeTienne et al., 2014).

The sale of the firm vs. the liquidation of the firm is not solely the choice of the firm owners, and most literature argues that firm exit via M&A is more beneficial for the firm owners (Rossi et al., 2013; Wennberg & DeTienne, 2014), the economy (Mason & Harrison, 2006), and the industry (Pe'er & Vertinsky, 2008). Therefore, when the firm is indeed exiting the industry, it will exit via M&A whenever possible.

Furthermore, DeTienne and colleagues' work has shown that some entrepreneurial firms are found with the intention of selling it, because selling can generate high financial returns (DeTienne, 2010; Wennberg et al., 2010). Additionally, DeTienne and Cardon (2012) found that a relatively high percentage of the exits follow their intended exit strategy. Research mainly relies on the commonality of this phenomenon among entrepreneurs (DeTienne et al., 2014; Graebner & Eisenhardt, 2004; Graebner et al., 2010; Wennberg & DeTienne, 2014) and investors (Mishra, 2015; Zachary & Mishra, 2013). As such, there is non-coherence (Locke & Golden-Biddle, 1997) in the literature, rooted in the lack of a theoretical basis to explain how an eventual target firm exit through M&As can be a success.

Second, while the limited research that viewed firm exits via M&As as a success distinguished between such exit and exit via liquidation (Balcaen et al., 2012; Cefis & Marsili, 2012), the variance within the outcome of the firms that exit via M&As has not received attention (Wennberg & DeTienne, 2014). Thus, even in some cases when firm's exit is viewed as a success, it is unclear how the success could be captured beyond the distinction between one of two exit modes. Moreover, although occasionally used in the

literature as such, a firm's exit itself via a M&A is typically not viewed as a performance indicator, and the variance within it is not addressed or examined. Yet, firm exit is an important research topic for scholars in the entrepreneurship and strategy fields (Graebner et al., 2010; Wennberg & DeTienne, 2014), with great consequence for practitioners, policy makers, as well as the economy overall. Therefore, examining the factors related to target firm's exit via M&As and the variance within M&A exit is not only important, but also holds the potential for meaningful contribution to the above mentioned scholarly communities and other stakeholders.

To conclude this section, the literature that has examined a private firm's exit is limited and developing, and more theoretical development is needed (Graebner et al., 2010; Wennberg & DeTienne, 2014). The lack of a supporting theory to explain a firm's exit via M&A as success, absence of a clear indicator of performance for such cases, and need for an understanding of the variance in this performance are gaps that are both important and interesting.

1.4 Literature Gaps and Intended Contributions

This section of the introduction paper highlights three primary gaps identified in the literature and presents the contributions this paper makes. In doing so, the paper blends the RBV and signaling theory to build a theoretical framework that explains the phenomenon of M&As of private firms from the target perspective, provides a theoretical base for capturing the performance of such firms, and bridges between the acquiring and target sides in a M&A.

First, one explanation that scholars often offer for the variance in M&A performance is overpayment when acquiring a target firm, in the form of paying M&A

premiums that are in excess of the estimated value of the target and the synergies that the acquiring firm is able to produce (Hitt et al., 2009). Similarly, scholars have identified various explanations as to what the target firms can do to attract acquirers (Heeley, King, & Covin, 2006), something the target firms may be interested in since the target firm often receives a premium and its shareholders often reap high returns. As such, the concepts of overpayment and M&A premiums are important for both the acquiring side and target side in M&As. While research has studied M&A premiums, it is limited to target firms that are public.

However, even though the traditional measure of M&A premiums cannot be directly assessed for private target firms, paying a price that is too high may still have an effect on the acquiring firm in the form of lower post-M&A returns, and on target firms in the form of higher returns to firm owners. Thus, there is a need for research that considers overpayment or premiums for private target firms. As such, it would be of help to understand what acquiring firms may be willing to pay for private targets.

M&A literature in strategic management suggests that acquirers engage in acquisitions of firms for various reasons (Brueller et al., 2014; Graebner et al., 2010; Hitt et al., 2009; Rossi et al., 2013), and therefore may evaluate target firms based on various criteria beyond their performance as sellers of products and services. Furthermore, some of the strategy literature on M&As from the acquiring side views target firms as the source of new or complementary resources, knowledge, or capabilities; evaluates the fit between the acquiring firm and the target firm; and examines potential for synergies after the acquisition (Cloudt, Hagedoorn, & Van Kranenburg, 2006; Ellis, Reus, Lamont, & Ranft, 2011; Graebner et al., 2010; Jemison & Sitkin, 1986; King et al., 2008; Larsson &

Finkelstein, 1999; Ranft & Lord, 2002; Seth, 1990). Thus, reasons for engagement in M&As will likely influence the price that an acquirer pays for a private target firm.

A review of literature on target selection, M&A premiums, and M&A performance reveals several factors that could be related to positive M&A outcomes, and thus may provide insight about attractive attributes of target firms. However, the answer as to what acquiring firms find attractive when acquiring private firms is not clearly addressed in the M&A literature. With regards to the acquisition of private firms, most related literature examined acquisitions of tech firms, often with a motive to acquire capabilities and technological resources, create synergies, accelerate product development, and engage in exploration and exploitation activities (Cloudt et al., 2006; Graebner et al., 2010; King, Covin, & Hegarty, 2003; Puranam & Srikanth, 2007; Ranft & Lord, 2002).

As the goals of these acquisitions are often strategic, capturing M&A outcomes and performance is difficult. Further, since the firms are often private with a high level of intangible resources, common ways of analysis may become challenging, and the evaluation becomes even more subjective. Therefore, the focus is on the potential of value creation acquirers expect in the acquisition, where higher potential for value creation makes the acquisition of a target more attractive.

As such, the potential for creation of new sources of value and enhancing existing sources of value that result from synergies, may be viewed as the evaluation criterion by acquirers, and therefore should be adopted as a possible indicator of performance for target firms. With this in mind, a target firm's performance in the goods and services market may be of secondary importance. Therefore, entrepreneurship literature that

examines a target firm's readiness for acquisition by solely focusing on its performance in the goods and services market offers an incomplete picture and, in some cases, may be misleading. This gap is, in part, due to the lacking theoretical base for viewing a private firm's exit via M&A as success.

Second, the review of literature that focused on the target side in M&A of private firms identified various trends in the literature as well as several discrepancies. For example, while some literature viewed firm sale via M&A as success (Headd, 2003; Wennberg & DeTienne, 2014; Wennberg et al., 2010), some viewed it as failure. When scholars primarily build on ecological perspectives, target firm's exit is viewed as a failure.

On the other hand, target firm's exit via M&A is viewed as success, but it is commonly the case only when compared to exit via liquidation. The theoretical framework often used when viewing exit via M&A as success is RBV, where resources continue to the acquiring firm, or from the economics perspective of the entrepreneur or firm owners, for whom M&A is more beneficial than liquidation (Coleman et al., 2013; Fontana & Nesta, 2009; Greenaway, Gullstrand, & Kneller, 2009; Lee & Lee, 2015). As such, while ecological perspectives focus on survival only, RBV and economics perspectives look past survival alone and distinguish between the types of firm's exit from the industry. Finally, the notion that some firms are founded and grown intentionally to be sold has been accepted by the literature (DeTienne, 2010; Wennberg & DeTienne, 2014). However, in M&As of private target firms, even in studies that acknowledge firm sale as a success, the only examination is whether the M&A event occurred. But, if there is a goal to the existence of the firm, then there is a need for a

theoretical framework that can explain it. Similarly, if there is a goal, then there needs to be a way to measure its achievement as well as the variance in it (Dess & Robinson, 1984).

Third, when examining M&As of private target firms simultaneously from both sides of the transaction, it appears that the existing literature lacks a theoretical construct that connects and bridges the two sides. Because M&As involve both the acquiring and target firms, and the target firm is evaluated by the acquiring firm, it is important to understand what acquiring firms may value. Specifically, acquiring firms may evaluate target firms in terms of resources or capabilities, rather than as stand-alone firms.

To illustrate, consider, for example, WhatsApp – a tech company that developed a messaging app and offered it for free. Despite presenting impressive growth, the company basically had no revenue and the entrepreneurs and venture capital investors had negative returns. When examining the performance indicators commonly used in the academic literature, this target firm would be viewed as underperforming based on revenues and profits. However, WhatsApp was actually progressing, as it was developing its app and growing its user base. Therefore, Facebook acquired WhatsApp in 2014 for \$19 billion, which stands as the largest acquisition by Facebook and the largest acquisition of a company backed by venture capital firms. Although this is a relatively famous case, it is just one example of thousands of acquisitions of private firms that had little or no revenue (Carr, 2012; Lynley, 2011; Polovets, 2014; Thukkaram, 2014). Clearly, using revenues and profits as the only indicators of firm performance may be insufficient.

Private firm attractiveness as an acquisition target may be the goal and performance indicator, but the academic and practitioner literature that examine M&As from the acquiring firm perspective and the target firm perspective use different approaches to evaluate the target firm. Therefore, this paper establishes that private firm performance may be indicated by firm attractiveness as an acquisition target, and that the attractiveness should be studied from the perspective of the acquiring firm, including criteria that may be used by acquirers when evaluating the potential value of private firm targets. As such, target firm attractiveness as an acquisition target is posited to be the bridge that can connect the target and the acquirer perspectives as well as serve as the performance indicator in the context of this specific deal type – acquisitions of private firms. . Further, this paper develops a theoretical model that explains why and how a private firm’s exit via M&A can be a desired outcome as well as explains the variance in performance associated with acquisitions of private firms.

To conclude, the paper examines literature on private firms’ exit and on M&As of private firms from the target firm and acquirer firm perspectives. The paper develops an integrative theoretical framework of private firm's attractiveness as an acquisition target, and posits that a private firm's attractiveness as an acquisition target serves as a performance indicator for such firms. Thus, this paper contributes to the literature by addressing the gaps identified above, resolving the problematization regarding the use of different criteria to evaluate private firm's performance and attractiveness, and addressing the non-coherence in the firms exit literature. Moreover, the paper contributes to the understanding of M&As by bridging the target side and acquirer side.

This paper addresses multiple calls for future research to advance the use of theory in of entrepreneurship research (Campbell & Mitchell, 2012; Hoskisson, Covin, Volberda, & Johnson, 2011; Mishra, 2010; Mishra & Zachary, 2013; Mishra & Zachary, 2014), study the target side of M&As (Graebner & Eisenhardt, 2004; Graebner et al., 2010), develop a theoretical framework to guide studies in the exit literature (DeTienne, 2010; DeTienne et al., 2014; Wennberg & DeTienne, 2014), advance knowledge about what acquirers look for in a M&A target (Hitt et al., 2009; Kaul & Wu, 2015, 2016; Rossi et al., 2013) and blend RBV and signaling theory to tackle unanswered research questions (Ragozzino & Blevins, 2015). Finally, Cefis and Marsili (2012) stated that “a direction for further research would be to extend the analysis of the exit choice set to include measures of performance in order to better capture the difference between successful and unsuccessful exits” (p. 805). This paper also addresses this call for action.

1.5 Research Question and Next Steps

The broad question in the field of strategy is: Why do some firms perform better than others? This dissertation paper aims to answer this question, focusing on the private firm. Specifically, the focus is on M&As of private target firms and the aim is to explain why some private firms perform better than others as targets. The M&A outcome for the target firm which reflects the acquirer’s perception of its value is the performance indicator of interest.

Although the focus in this paper is on the target side in M&A, it is important to acknowledge that attractiveness is in the eye of the acquirer. The paper reviews the literature on M&A from the acquiring side, predominantly in the field of strategy. Thus, the paper examines what is valuable for acquirers, especially when acquiring private

firms. To guide this examination, this paper presents the following research question:

What makes private firms attractive as targets for acquisition?

The remainder of the dissertation is structured as following. Chapter 2 reviews the related literature, beginning with a review of the entrepreneurship literature, followed by a review of the literature on acquisitions of private firms from the target firm perspective, and ending with a review of the literature on M&As from the acquiring firm perspective. Chapter 3 develops the hypotheses and theoretical model of private firm's attractiveness as an acquisition target. Chapter 4 presents the data and methods that were used to test the theoretical model and discusses the results of the analyses. Finally, Chapter 5 provides a discussion of the results, directions for future research, limitations, contributions, and conclusion.

CHAPTER 2. LITERATURE REVIEW

The previous chapter identified several gaps in the different streams of literature, presented the three intended contributions, and concluded with the research question. This chapter presents the review of literature in these fields of strategy and entrepreneurship and is organized in three sections. The first section of this chapter examines the literature on entrepreneurial phenomenon and firm performance and explains that exit via M&A can be viewed as a performance indicator for some private firms. In turn, this explains that acquisition attractiveness can be used as proxy for performance because private firm attractiveness as an acquisition target may explain the variance in outcomes for such firms.

Next, the chapter presents the overview of the literature that examined each side in M&A, with each section followed by an integrated summary of the literature. Thus, the second part of this chapter reviews the literature on acquisitions of private firms from the target perspective. The review identifies factors that are related to firm survival as well as firm's exit from the environment via M&A vs. liquidation. As noted earlier, firm's attractiveness as an acquisition target refers to its attractiveness in the eyes of potential acquirers. Therefore, the third section of this chapter includes a review of the literature that examined the acquiring side in M&A. After presenting the factors identified in the M&A literature on both sides of the phenomena, the chapter concludes with the theoretical model that depicts constructs hypothesized to influence private firm's attractiveness as an acquisition target.

2.1 General Entrepreneurship

Shane and Venkataraman (2000) defined the field of entrepreneurship and argued that entrepreneurship involves sources of opportunities and the processes of discovery, evaluation, and exploitation of opportunities as well as the set of individuals who discover, evaluate, and exploit opportunities (Hitt, Ireland, Sirmon, & Trahms, 2011). Hitt, Ireland, Camp, and Sexton (2001) defined entrepreneurship as “the identification and exploitation of previously unexploited opportunities” (p.480), and Ireland, Hitt, and Sirmon (2003) expanded this definition primarily to include a focus on wealth creation as an outcome of entrepreneurship.

However, generation of wealth first requires creating value (Mishra & Zachary, 2014). The addition of wealth generation was one of the factors that took entrepreneurship research towards the field of strategy, since wealth is created through exploitation and achievement of competitive advantage (Hitt et al., 2011). While some scholars view entrepreneurship solely from exploratory and innovative perspectives (Kuratko & Audretsch, 2009; Zott, Amit, & Massa, 2011), others focus on both innovation and creation of value (Mishra & Zachary, 2014), wealth generation and growth (Ireland et al., 2003; Ireland & Webb, 2007).

Entrepreneurial phenomena involve the creation of newness; exploration of opportunities; exploitation of opportunities; and creation of value, including wealth. Hitt et al. (2011) draw the conclusion that overall, wealth generation through value creation is entrepreneurship’s central function.

Consequently, entrepreneurship research focused on discovery of opportunities in the market, often in the form of customer needs (Zott et al., 2011), and creation and

growth of ventures that offered products or services that addressed these needs. The research stream on venture growth (Gilbert, McDougall, & Audretsch, 2006; Ireland et al., 2003; Ireland & Webb, 2007; Short, Ketchen, Shook, & Ireland, 2009; Zott et al., 2011) is well developed, covering various topics that are related to creation and growth of ventures, business model design, strategy, and the fit between the firm and environment as well as the fit between other factors such as strategy, product, and opportunity.

In order to examine later stages in the life of a venture, research focused on firm discontinuation and failure, initial public offerings (IPO), and acquisition of the firm (DeTienne et al., 2014; Wennberg & DeTienne, 2014). Further, literature offers several views on the goals of entrepreneurial ventures, which vary from only wealth creation (Ireland & Webb, 2007) to satisfaction of various personal and social needs (DeTienne & Chandler, 2010). However, the literature points to only one type of opportunity for wealth creation – the creation and transformation of products and services and selling these to customers. The firm is often seen as a means to organize the business processes that generate value (Mishra & Zachary, 2013; Penrose & Pitelis, 2002; Priem, Li, & Carr, 2012).

However, this is not the only way in which private firms can create wealth for their owners (DeTienne et al., 2014; Wennberg & DeTienne, 2014). An additional path to wealth creation is through the process of the firm being acquired at a premium of some sort (DeTienne, 2010; Wennberg et al., 2010). Specifically, some private firm owners are able to create wealth and receive return on their investment by selling their company in a M&A, often referred to as a firm's exit via M&A (DeTienne et al., 2014). In the cases

where the firm was founded with the intention to be sold, the strategy is determined early, and the firm is often sold (DeTienne et al., 2014).

To conclude, there is a path through which private firm's owners can create wealth other than rent generation through the sale of products and services (DeTienne et al., 2014). However, while the rent generation model received much attention, both in the form of opportunity identification in the market for products and services and in the development, strategizing, and growth of the venture, the sale of the firm via M&A as a wealth creation path did not receive much attention. As explained earlier, exit via M&A is not viewed as a success. However, examining the event from the perspective of the firm's owners and creation of newness that results in creation of wealth can lead to the view of firm's sale via M&A as a possible success. Therefore, the potential outcome of private firm's exit via M&A, which can be captured as firm's attractiveness as a target, can be viewed as a performance indicator of private firms that were acquired.

As such, after establishing that private firm's attractiveness is the construct of interest, the reasons for studying it, and that it is the bridge between the two sides in M&A, the rest of this chapter is dedicated to examining what may be related to target firm's attractiveness as an acquisition target. In the first section of the chapter, I present the literature that examined acquisition of private firms from the target perspective. This literature typically compared firms that experienced a M&A event with firms that did not. Often, such as in the context of firms in distress, the sale of the firm via M&A was the best option for the target firm, eliminating explanations other than firm's attractiveness. The second half of the chapter presents the literature that examined M&A from the

acquiring side. The literature often examined M&A outcomes for the acquiring firm as well as concepts such as M&A premiums, target selection, and share acquired.

While the first half of the chapter presents the literature that examined what attributes of the private firm are related to the firm's likelihood of being acquired, the second half presents the literature that examined what acquiring firms may consider important in M&A. As the chapter will show, the literature on the target side often views the target firm as a unit that is either selected into a M&A or not. As such, the firm is also evaluated and examined as a stand-alone entity. On the other hand, the literature on the acquiring side may view the target firm as a bundle of resources, capabilities, or knowledge, and evaluate the post-M&A potential of these.

To conclude, the literature on the acquiring side in M&A presents the buyer's rationale, what acquiring firms value, and, thus, what they may find attractive in a target firm. The literature on the target side in M&A presents what target attributes were found to be related to being acquired. By combining these streams of literature, the paper examines both what the acquirers would like to buy as well as what sellers were more successful in selling.

2.2 Target Side

This section examines the literature on private firm's exit. This section presents the literature by streams of literature, where different streams examined the phenomenon differently. However, the main focus of the section is on examination of factors that were related to a private firm's likelihood of experiencing a M&A event, compared to not experiencing it. The literature is summarized in Table 1.

Table 1: Summary of Findings in the Target Perspective Literature

Construct	DV	Findings/Relationship	Citations
Founding team size, Experiences	M&A vs. liquidation	Positive with M&A	Grilli (2011); Coleman et al. (2013)
		No Difference	Lee & Lee (2015)
Target firm's age	M&A vs. liquidation	Inverted U-shaped	Bruno & Cooper (1982)
		No difference	Fontana & Nesta (2009); Grilli (2011); Lee & Lee (2015)
		Positive with M&A	Greenaway et. al., (2009)
Target firm's revenue growth	M&A vs. no-M&A	Positive with M&A	Granstrand & Sjölander (1990)
Target Firm's financial health	M&A vs. liquidation	Positive with M&A	Peel and Wilson (1989); Köke (2002); Åstebro & Winter (2012); Balcaen et al. (2012); Bhattacharjee et al., (2009)
Target firm's size	M&A vs. liquidation	Negative with M&A	Peel & Wilson (1989)
		No difference	Fontana & Nesta (2009); Grilli (2011); Lee & Lee (2015)
		Positive with M&A	Köke (2002); Greenaway et. al., (2009)
	M&A vs. no-M&A	Negative with M&A	(Billett, 1996)
		Inverted U-shaped	Bhattacharjee et. al., (2009)
		Positive with 'exit'	Esteve-Pérez et. al., (2010)
Innovativeness	M&A vs. liquidation	Positive with M&A	Cefis & Marsili (2007; 2011; 2012)
		No difference	Fontana & Nesta (2009); Esteve-Pérez et. al., (2010)
	M&A vs. no-M&A	Positive with M&A	Heeley et al. (2006)
IP Protection	M&A vs. no-M&A	Negative with M&A	Cefis & Marsili (2011); Coleman et al. (2013)

Table 1: Summary of Findings in the Target Perspective Literature

2.2.1 Firm Exit as Failure

The view of private firm's exit as a failure is limited and may be sometimes incorrect (Wennberg & DeTienne, 2014). However, the factors that are related to firm survival, as compared to firm closure, may be relevant to firm's attractiveness as an acquisition target, and some scholars have acknowledged this differentiation. Among the first studies that examined firms' survival, continuation, and exit via acquisition were Cooper and Bruno (1977) and Bruno and Cooper (1982). These studies examined 250 tech firms that were founded in the San Francisco area during the 1960s and then

examined in the 1980s. Engineers or scientists founded the firms, and common strategies were based upon the utilization of new technologies. Cooper and Bruno (1977) found that, overall, high-tech firms appeared to have had higher chances of survival than non-high-tech firms, and that the exits were characterized by higher rates of acquisitions. When examining the survival rates, the authors found that firms that were founded by a team had better chances.

The focus of Bruno and Cooper (1982) was on distinguishing acquisition and closure exits. They found that peak acquisition time was when target firms were between 4-7 years of age, and the secondary peak was when the firms were less than one year old. Additionally, (Bruno & Cooper, 1982) noted that, “the typical acquired firm had been experiencing rapid growth at acquisition, had all of its founders present at the time of acquisition, was not publicly traded, had profits less than 5% of gross revenues, had a tax loss carry forward, and did not have a long-range strategy regarding being acquired” (p. 284). However, the authors base this information on the responses of only 12 companies they were able to reach. When examining the acquiring firms, Bruno and Cooper (1982) found that about half had sales over \$10 million, 89% of which were related acquisitions, and no acquisitions were made by an acquisitive conglomerate. Additionally, firms that acquired the younger firms were mostly smaller and private and without prior M&A experience. These acquiring companies were relatively similar to their targets as they were primarily private tech firms in the San Francisco Bay area. Very large acquirers acquired firms when they had a median of eight acquisitions in prior five years. The target firms had similar characteristics to high growth firms, were founded by teams, operated in a tech market similar to the acquirer, were spun-off, and were older (Bruno &

Cooper, 1982). Additionally, Burgelman (1994) studied Intel and its operations and changes, including entering and exiting businesses. Although firm's exit from an industry was not the focus in the study, this work became one of the first to clearly explain that a business exit does not automatically equal failure.

As the research continued, some scholars started examining the acquisition of small firms from a different perspective. Granstrand and Sjölander (1990) studied the acquisition of Swedish, small technology-based firms (STBF) acquired by large technology based firms (LTBF) and found that firms that were acquired demonstrated much higher growth, especially when examining sales growth. The rationale for their study is that small tech firms serve as technological resources that, when acquired, may be combined with the resources of the large acquiring firms. The authors also noted sellers generally had more power in such transactions, acquirers achieved greatest synergies in R&D and marketing, and acquisitions of innovative firms involved an evaluation of both the target firm and its technology. Interestingly, Granstrand and Sjölander (1990) stated that, "STBFs are not bought by LTBFs because they are growing at a relatively high rate, but possibly because their resource base is complementary to that of the LTBFs, and their integration with these can reap the potential benefits. More than 50% of the interviewed firms in the pilot survey reported resource synergies, especially marketing and financial ones" (p. 15). Thus, the study highlighted that such firms may be evaluated not as stand-alone entities, but rather as the potential effect they may have on the acquiring firm after M&A.

Further, Schary (1991) suggested that there may be heterogeneity in firm exits and examined firms in the textile industry in the United States from 1924 to 1940,

comparing firms that survived and those that exited as well as firms that exited via bankruptcy and M&A. Results suggest that firms that exited via bankruptcy had lower financial performance than firms that survived. Harhoff, Stahl, and Woywode (1998) examined a large sample of approximately 11,000 firms in West Germany, comparing exit via voluntary liquidation and via forced bankruptcy. Although the focus was on legal status of the firm, additional factors were examined. The authors showed that firm size and diversification were negatively related to exit. Being a subsidiary had a positive relationship with voluntary exit and a negative relationship with forced exit. However, some results were mixed.

Cefis and Marsili (2006) examined Dutch firms to study the role of innovation in firm's survival. The authors surveyed 3,275 Dutch firms that exited in 1996-2000, using two data sources – the Business Register in the Netherlands and the Second Community Innovation Survey. They classified innovative firms as those that introduced an innovation, either product or process, and all other firms as non-innovative firms. They found the innovative firms had higher chances of survival and that innovation matters most for smaller firms and younger firms.

2.2.2 Firm's Exit via M&A and Exit via Liquidation

Distinguishing between firm's exit via M&A and closure, Peel and Wilson (1989) examined a sample of UK corporate firms in distress, suggesting that acquisition of distressed firms and closure should be viewed differently as these have different economic consequences, where acquisition of a distressed firm can be viewed as an alternative to bankruptcy. Overall, results suggest that smaller firms with higher financial leverage, lower fixed asset turnover, and longer reporting lag on annual accounts were

more likely to be acquired compared to non-failed firms. When comparing firms that ended in closure with those that were acquired, the firms that closed exhibited overall poorer financial performance.

When comparing firms that were acquired to the firms that closed, results presented by Köke (2002) suggested that factors related to higher chances of being acquired were financial performance in the form of ROA and debt-to-asset ratio, growth rate of employment, and size captured in total assets. This study examined 1,670 German public and private firms of medium and large size, for the years 1986-1995. Similarly, small size, poor financial performance, and high financial leverage were related to firm closure. Additionally, Cefis and Marsili (2007) examined Dutch manufacturing firms from 1996 to 2003 included in the Business Register in the Netherlands and the Second Community Innovation Survey with a focus on innovation and mode of exit. They found that more innovative firms were less likely to exit through closure and that product innovation was related to exit via M&A.

The importance of distinguishing between firms that closed, exited via M&A, or switched industries is highlighted in the research by Greenaway et al. (2009), who studied 3,004 Swedish manufacturing firms (of over 50 employees) from 1980 to 1996. The study noted that M&A was the most common form of exit and found that firm characteristics such as size and age and higher levels of total factor productivity and capital per employee as well as being locally owned and an intermediate producer were related to having higher probabilities of exit via M&A than closure. Additionally, firms that exit via M&A had lower capital intensity or exports than firms that continued in the industry. When conducting robustness tests, Greenaway et al. (2009) found that human

capital intensity (captured as wages) and R&D intensity were negatively related to the probability of engaging in any form of exit; however, a comparison between the types of exit was not provided.

Further, Fontana and Nesta (2009) examined both survival vs. exit and exit via liquidation vs. exit via M&A. The study examined 121 high-tech firms in the LAN switch industry in 1990-1999, focusing on firm's products and prices with the intention to capture quality and firm reputation. The findings suggested that firms closer to the frontier had higher chances of surviving, the relationship is non-linear, and exits occurred mostly for firms positioned in the middle of the market. Additionally, firms that were spin-offs, had higher R&D intensity, and were larger and older had better chances of survival; no real differences between the exit routes were shown.

Highlighting the importance of the research methods used, Esteve-Pérez, Sanchis-Llopis, and Sanchis-Llopis (2010) employed survival methods for studying firm exit and argued that these are more appropriate because they explained both when and whether an exit occurred. Using panel data for 2,998 Spanish manufacturing firms from 1990 to 2000 gathered from ESEE (total of 17,969 observations), these authors examined factors that were related to firm exit. The results suggested that older (over 50 years old) and larger firms are more likely to exit via M&A. With regards to innovation, overall exits were higher in higher innovative industries, but the likelihood of exit via M&A was not. Additionally, higher productivity was related to higher likelihood of exit via M&A as opposed to liquidation. R&D investment was negatively related to exit via liquidation, but was not a significant predictor of exit via M&A.

Continuing to analyze factors that are related to firm's exit via M&A as compared to exit via liquidation, Cefis and Marsili (2011) relied on the ecological and institutional perspectives to do so. Using panel data for Dutch manufacturing firms from 1996 to 2003 gathered from the Business Register in the Netherlands and the Second Community Innovation Survey, they found that innovative firms in low-tech industries were more likely to exit via M&A. Cefis and Marsili (2011) also noted that, "In low-tech industries, product innovation is less common and, as already shown, firm survival is positively affected by process innovation. In a stable environment where firms adapt by innovating in processes, product innovation becomes 'exceptional', competition is less intense, and acquisition by a competitor is more likely" (p. 492). Additionally, the authors noted, "this path to exit via acquisition, may reflect the fact that new firms lack the resources required to compete in the market with new products, or may indicate adoption of an exit strategy where a new firm is created with the objective of selling on" (p. 492). Cefis and Marsili (2011) concluded that "young firms that are product innovators become particularly attractive targets for acquisition" (p. 469) in stable environments. Interestingly, Cefis and Marsili (2011) found that patents were negatively related to being acquired. This was explained by the firm's intention to exploit opportunities and innovation in the product market, its ability to garner more financial resources, and its overall ability to better compete with other industry firms.

Continuing the research on the topic of a firm's innovation and its exit route, Cefis and Marsili (2012) relied on the RBV. The study examined a panel data of Dutch firms from 1996 to 2003 retrieved from the Business Register in the Netherlands and the Second Community Innovation Survey databases. They found that any type of innovation

was negatively related to exit by liquidation and that product innovation was positively related to exit via M&A. However, the relationship between process innovation to exit via M&A was not significant. Cefis and Marsili (2012) concluded that "... exit is not necessarily a sign of failure; it can be an explicit strategy of the firm. Our findings suggest that innovation opens alternative pathways for the firm to exit, in the form of an exit by merger or acquisition. Innovation makes the firm more attractive to potential acquirers" (p. 805). Additionally, (Cefis & Marsili, 2012) state that "for firms keen to harvest the returns from their activities by merging with or selling out to other firms, it is important to have a novel product idea that will attract the attention of potential acquirers" (p. 805). Thus, the study further highlighted that firm's sale via M&A may be desirable and that this opportunity may be related to the firm's ability to innovate.

Continuing the examination, but under different settings and context, Grilli (2011) examined the relationship between firm survival and exit and human capital of the founders under conditions of industry crisis. The study examined 179 Italian start-ups created between 1995 and 2000 in the communication and information technology industry during the economic crisis that occurred from 2000 to 2003. Grilli (2011) found that different types of work experience were related to different types of exits. Following the human capital and opportunity cost rationale, Grilli (2011) found that the founders' experience was positively related to exit and that experience in the specific industry was related to exit via M&A, while experience from other industries was related to exit via liquidation. Furthermore, most of the other factors examined, including size and age, were not significantly related to exit. However, firm size was found to be negatively related to exit via closure and positively related to exit via M&A. Grilli (2011) noted:

“this result confirms the highly distinct nature of exit via closure as compared to M&A and suggests how sale to or merger with other firms may represent a rather successful exit strategy for a high-tech, start-up firm” (p. 635). Thus, (Grilli, 2011) showed how some of the relationships might be different under economic distress, and further highlighted that firm’s sale may be a success.

Continuing the research on failure and exit of firms in financial distress, Åstebro and Winter (2012) examined firms operating in randomly selected industries, with the goal of developing a model that could predict failure. The authors noted that distinguishing between exit via M&A and exit via liquidation is important as these have different outcomes. With regards to acquisitions, the authors suggested that acquiring firms engage in acquisition for three main motives: hubris, discipline, and synergies. Since hubris is not something they can model, they focus on the latter two. They suggested that the target firm’s asset liquidity and profitability were positively related to exit via M&A. Results showed that firms that were acquired had significantly larger portions of cash on their balance sheets than other firms.

In addition, Balcaen et al. (2012) examined firms in financial distress, distinguishing between court-driven exit and voluntary exit, where firms exit via liquidation or M&A. The authors studied 6,118 distress-related exits in Belgium between 1998 and 2000 and identified factors related to the exit routes in each of the stages. They found that firms were more likely to voluntarily exit when they had large cash holdings, low leverage, were older, had group relationships, or had high levels of secure debt. When comparing voluntary liquidation and exit via M&A, firms were more likely to exit via M&A when they had lower levels of cash, lower levels of secured debt, were larger,

and were a part of a group. Balcaen et al. (2012) indicated that, with regard to future research, “it would be especially insightful to understand how a multi-exit type, two-step model works in Anglo-Saxon countries” (p. 971). As such, the authors highlighted the importance of extending the research to other contexts.

Fortune and Mitchell (2012), in distinguishing between exit via closure and exit via M&A, built on the RBV and focused on managerial and functional capabilities. Fortune and Mitchell (2012) suggested that, while firms may be selected out of the environment, capabilities might carry on and transfer to the acquiring firm. Fortune and Mitchell (2012) limited their study to financially struggling firms to avoid the bias of examining successful firms that also exit via M&A. They focused on the Internet sector during 2001 and found that managerial capabilities were positively related to exit by acquisition as were larger and older firms. Importantly, Fortune and Mitchell (2012) showed in their work that while firms may be selected out of the environment, capabilities were adopted and continued to the acquiring firms. The authors concluded that the acquisition of firms for their capabilities may require paying a lower acquisition premium than the acquisition of firms for their products or to remove them as competitors.

Continuing the research on survival vs. exit and exit via M&A vs. closure, Coleman et al. (2013) relied on the RBV and studied firms in the service industry using data from the Kauffman Firm Survey (KFS). The KFS surveyed 4,928 businesses started in 2004 and examined in 2005-2011, although Coleman et al. (2013) only examined years 2005-2009. The authors found that for both service and non-service firms, the factor related to survival was the same: human capital resources. However, in the service

industry firms founded by serial entrepreneurs were more likely to exit via M&A, assumingly because of their previous experience. Similar to prior studies, Coleman et al. (2013) also found that higher level of intellectual property, captured as patents and copyrights, was negatively related to exit via M&A for non-service firms. This finding is explained by signaling of quality, which enables the firms to acquire required resources to survive. However, Coleman et al. (2013) noted that their findings “regarding the impact of intangible assets in the form of intellectual property and R&D are less conclusive and pave the way for further research on the impact of these increasingly important firm assets” (p. 22). Moreover, the authors further highlighted the importance of examining this resource type in the context of acquisition of private firms as well as other factors that may offer explanations for the inconclusive results.

Advancing the conversation by viewing exit via M&A as success, Lee and Lee (2015) relied on the human capital theory and focused on entrepreneurial factors and their relation to the success of their ventures. The authors noted that “the value of venture creation resides in the ability of an entrepreneur to harvest the inputs devoted to the business (Holmberg 1991)” (p. 893), thus highlighting the importance of the harvest event. The harvesting can be achieved by either continuous operation of the business, including taking the business public through an initial public offering (IPO), or by successful exit, meaning exit via M&A. Further, (Lee & Lee, 2015) state that “while the extensive literature in entrepreneurship has examined the former strategy for harvesting, few have studied the latter strategy” (p. 893), even though entrepreneurial exit is one of the critical topics of entrepreneurship research. Lee and Lee (2015) highlighted that in many cases exit via M&A is a strategic, planned, and desired decision taken by the

entrepreneur in the earlier stages of venture creation. Lee and Lee (2015) further emphasized that viewing start-up continuation as success and exit as failure is a common, but flawed practice. Lee and Lee (2015) used data from the KFS. The dataset provides data on firms from 2004 to 2011, and the authors limited their selection to firms founded by a single entrepreneur and excluded firms that stopped their operations temporarily. The final sample consisted of 318 start-ups that completed an exit between 2005 and 2011, about 18% of which exited successfully. First, effects of firm size and age were non-significant and marginally significant, respectively. Second, the entrepreneur's industry experience and general education were not found to have a significant effect on the exit route. Only the work hours that were invested by the entrepreneur had significant effects, suggesting a positive relationship with exit via M&A. Lee and Lee (2015) did not account for heterogeneity in innovativeness of firms, a factor that was previously found related to the exit route. The authors called for future research to study innovative capabilities of start-ups, human capital factors, and environmental factors together.

2.2.3 Target Firm Factors

Contradictory to some prior studies and through the examination of takeover and acquisition activity, it was also found that larger firms are less likely to be acquired (Billett, 1996). Other measures of target firm factors and industry factors were mostly not significant. Blonigen and Taylor (2000), who focused on acquisition behavior of firms, noted that they did not clearly identify factors about target firms, but that majority of target firms were technologically important.

In one of the few studies that focused on the target firm, Heeley et al. (2006) relied on the RBV and examined the factors that make a firm an attractive target for

acquisition by comparing a sample of firms that were acquired with firms that were not acquired. The study used a sample of acquisitions from 1990 to 2000 and other data gathered from SDC and COMPUSTAT. The authors limited the sample to firms that reported R&D expenditure five years prior to the acquisition in COMPUSTAT, identified industries at the 4-digit SIC code level, and removed outliers from consideration, yielding a final sample of 1,443 acquired firms. Heeley et al. (2006) then paired these with 1,443 firms that were not acquired. Non-acquired firms were screened on R&D reporting, the same fiscal year-end, closest size (market capitalization) match, and within 30% of the size of acquired firms with which they were matched. Further, Heeley et al. (2006) found that the firm's industry-adjusted R&D stock measure, industry-adjusted ROA, and environmental complexity were positively related to the firm's chances of being acquired, while higher environmental dynamism lowered the chances of being acquired. Additionally, environmental munificence and dynamism positively moderated the relationship between the target firm's R&D investment and its likelihood of being acquired. Thus, Heeley et al. (2006) concluded: "firms with the highest probabilities of being acquired have high R&D stock expenditures and also operate in very dynamic industries" (p. 1527). (Heeley et al., 2006) also determined that "the value of firm's resources is exogenously determined" (p.1529), concluding that the acquiring firm appears to recognize either R&D value or potential or the signal of value. Additionally, Heeley et al. (2006) suggested that R&D expenditure may be used as a proxy by acquiring firms because knowledge-based resources are difficult to identify and evaluate. Heeley et al. (2006) also explained that identifying possible factors that make a firm an attractive acquisition target is important because investors may be able to identify firms

that are more likely to be acquired, which may result in receiving premiums that are commonly over 40%. However, (Heeley et al., 2006) noted that in some cases firms may increase R&D expenditure, in part to increase their attractiveness as a target.

Additionally, “a recognized alternative to the internal development of technology resources is the acquisition of technologically capable firms (Peteraf & Bergen, 2003)” (p. 1531). (Heeley et al., 2006) called for future research to “explore how less visible or intangible inputs to technology resources – like tacit technological knowledge – affect a firm’s likelihood of being acquired” (p. 1531).

2.2.4 Venture Capital Investors

Another unique aspect of the context of acquisition of private firm is the potential presence of investors, especially venture capitalists (CV). Because acquisition of private firms is a phenomenon with much variance and uncertainty, especially with regards to firm valuation (Ragozzino & Reuer, 2007). Ragozzino and Reuer (2007) relied on signaling theory and examined how IPOs may facilitate the acquisition of firms. The authors noted that while adverse selection and information asymmetry may be prevalent in M&A, it is particularly severe in acquisitions of entrepreneurial firms, because “the value of entrepreneurial firms is closely linked to the figure of the entrepreneur, who may have incentives to inflate the value of the firm and seek private gains upon receipt of new capital” (Ragozzino and Reuer, 2007; p. 158). As such, the authors emphasized the difficulties in evaluating entrepreneurial firms, often private and young, as well as the motives that firm’s owners may have. Furthermore, Ragozzino and Reuer (2007) explained that much of the resources are intangible, entrepreneur human capital and motivation are considerable factors, and firms may be still be at risk of not overcoming

the liability of newness or smallness. Additionally, following the information asymmetry and transaction cost rationale, the acquisition of private firms may be a 'lemon', with higher transaction costs to account for the associated risks. Therefore, going public via IPO may be a signal to the market, where information about firm's resources is mandatorily disclosed. However, even after an IPO there may be differences in the likelihood of acquisition for the firms, depending on the various signals the firms send. Ragozzino and Reuer (2007) tested their hypotheses using a sample of 1,287 IPOs drawn from SDC from 1986 to 2004. The SDC database was further searched to determine if 51% or more of these 1,287 firms was acquired during the five-year period after the IPO. This process revealed that about 18% of the firms that completed an IPO were subsequently acquired. Results suggest that firms that were backed by venture capitalists (VC) were more likely to be acquired and that investment-bank (IB) reputations were also related to the likelihood of acquisition, although it was meaningful mostly for non-VC-backed firms. Additionally, results suggest that being in a high-tech industry was positively related to being acquired, while the target firm's intangible resources and financial slack were not found to be significant.

Going beyond simply capturing VC involvement, Ragozzino and Blevins (2015) built on signaling theory and studied entrepreneurial firms that were backed by VCs, examining the factors that were related to exit via M&A and/or exit via IPO. The authors studied VC-backed firms from 1985 to 2012, resulting in a sample of 3,566 new ventures, of which 1,260 were acquired and 396 went through the IPO route. Explanatory variables used were VC prominence, number of VCs invested, time to first investment, and total amount invested. While the effect of VC prominence on exit via M&A was not

significant, the effect of the number of VCs was positive and diminishing. The time to the first investment was also significant, suggesting that earlier investments were related to greater chances of exit via M&A, while increased duration of the VC investment lowered the chances of exit through M&A.

As the literature is still developing, there is much opportunity for future research, both regarding the role of VCs and exit routes. Ragozzino and Blevins (2015) called for future research to examine additional exit routes, other factors that may be related to the exit route, and the roles angel investors and banks may play in an effort to more accurately capture types and determinants of exit. Finally, the need for studying firm's exit with additional theoretical perspectives is evident, and Ragozzino and Blevins (2015) concluded that "clearly, the entrepreneurial exit phenomenon is very complex and other theories - such as the resource-based view of the firm, for instance - can and have offered a great deal of insights to help sort out the various determinants of exit" (p. 1012). Thus, the potential contribution, as well as the associated complexity, are noted in the literature.

2.2.5 Section Conclusion

This section of the chapter examined the various streams of firm's exit literature, focusing on the target side and identifying factors that are related to firm's exit via M&A. Although the main goal in the review was to identify the attractiveness issues that are related to being selected by acquirers, the review presented research on additional and related streams. First, a common theme across the literature streams appears to be that firm exit is understudied and that a firm's decision to exit does not always indicate failure. Second, the organization of the articles in this section illustrates the various

perspectives used to study the phenomenon. Other streams focused on the private firm itself, examining firm's survival or termination as well as liquidation or sale via M&A.

Additionally, factors such as the target firm's size, age, financial performance, growth, intellectual property protection, and VCs and investment banks were examined and shown in some instances to significantly affect the likelihood of the firm experiencing a M&A event. Although empirical studies offered support for some of the relationships, there were also many mixed and inconsistent results. However, it is notable that this is a research area where context may be of high importance. The empirical analyses were conducted using different samples of firms from different countries and operating in different industries. Also, the studies reviewed were grounded in different theoretical perspectives and targeted toward audiences in different academic disciplines.

In conclusion, the literature review identifies several factors that may be related to private firm's attractiveness as an acquisition target. Further, the review suggests that researchers built on many theories, examined multiple factors, and tested the hypotheses in various contexts. The next section reviews the literature on the acquiring side.

2.3 Acquiring Side

Mergers and acquisitions represent a common growth strategy through which firms expand their product offerings, enter foreign markets, acquire resources, and gain market power (Haleblian et al., 2009; Kim, Haleblian, & Finkelstein, 2011). Further, many M&A fail to achieve goals established by the acquiring firm and often result in value creation for the target firm's shareholders, but not for those of the acquirer (Hitt et al., 2009). This fact has resulted in countless studies that seek to better understand key drivers of value creation for the acquiring side with an emphasis on characteristics of the

acquiring firm and the deal itself (Haleblian et al., 2009; Hitt et al., 2009; King et al., 2004). Several leading scholars have reviewed the vast literature in M&A research (Cartwright & Schoenberg, 2006; Haleblian et al., 2009; Hitt et al., 2009; King et al., 2004). Further, as M&A activity has increased globally, several reviews were conducted focusing on cross-border M&A (Dikova & Brouthers, 2016; Shimizu, Hitt, Vaidyanath, & Pisano, 2004). Additionally, as the world transitioned towards a knowledge-intense economy, research focusing on M&A in high-tech sectors and M&A of private and tech-based firms developed and was reviewed (Graebner et al., 2010; Rossi et al., 2013).

Despite the vast number of M&A studies that have been published mostly from the perspective of the acquiring firm, researchers suggest that much of the variance regarding M&A outcomes is still unclear, and future research opportunities exist (Graebner et al., 2010; Hitt et al., 2009; King et al., 2004; Rossi et al., 2013). For example, (Trichterborn, zu Knyphausen-Aufseß, & Schweizer, 2015) argued that the M&A literature still needs to examine what is the M&A capability that is often viewed as important as well as how it is developed. Similarly, past M&A research examined various acquirer related factors, including acquisition experience (Ellis et al., 2011; Haleblian & Finkelstein, 1999), and related these to M&A performance and, in a more narrow stream, to share of ownership acquired (Elango, Lahiri, & Kundu, 2013).

The focus of this paper is primarily on the what, in terms of acquirers and the target firms. Specifically, emphasis is placed on which factors acquirers may perceive as desirable when examining potential M&A targets or candidates and which target firm factors may influence the acquirer's post-M&A outcomes. To capture these factors, the next section reviews literature that examined key decisions made by acquiring firms and

related outcomes – reasons for M&A engagement; target firm selection; ownership share in the target firm; amount paid for the target firm, along with any associated premium; and post-M&A performance.

Although there may be several ways to categorize the M&A literature, this section is organized first by the research focus of the literature. As such, to examine the factors that are related to firm's attractiveness as a target for acquisition, the section first reviews the literature that examined why firms engage in M&A, especially in the context of acquisition of private firms. The section then presents literature that examines target selection (which firms to acquire), the share of ownership (how much to acquire), and acquisition premiums (what acquirers pay). Finally, the section examines the literature that studied M&A innovative outcomes and M&A performance. A brief summary of the literature is presented in Table 2.

2.3.1 M&A Motivation

To better understand firm's attractiveness as a target acquisition, it may be helpful to understand why firms are acquired; therefore, this section briefly reviews the literature on M&A engagement. For example, in his classic works, (Coff, 1999, 2003) clearly stated that the main motive behind acquisition are access to knowledge resources of the target firms. The author also explained that accessing the resources and evaluating them is more challenging than non-knowledge-based resources. Interestingly, (Ranft & Lord, 2000, 2002) also stated that the main reason for engagement in acquisitions is access to knowledge-based resources, whether products, technology, or capabilities.

In an effort to resolve inconsistency in the literature regarding the relationship between R&D expenditure and engagement in M&A, Blonigen and Taylor (2000)

examined a panel of 217 U.S. electronic and electrical equipment firms, years 1985-1993, focusing on the R&D expenditure of the acquiring firm.

Table 2: Summary of Findings in the Acquiring Perspective Literature

Construct	DV	Findings / Relationship	Citations
Target Firm's Knowledge Resources	M&A Engagement	Positive with M&A	Coff (1999;2003); Ranft & Lord (2000;2002))
	Innovation	Positive with Innovation	Cloodt et al. (2006); Makri et. al., (2010); Bresman et. al., (2010)
Acquiring Firm's R&D	M&A Engagement	Negative with M&A	Blonigen & Taylor (2000)
Perceived Target Firm Value	M&A Engagement	Positive with M&A	Mayer and Kenney (2004)
Target Firm's Capabilities	Target Selection	Negative with M&A	Kaul and Wu (2015)
Acquiring Firm's M&A Capability	M&A Performance	Positive with Performance	Trichterborn et. Al., (2015); Ellis et al., 2011; Haleblian & Finkelstein, 1999
Resource Complementarity	Innovation	Positive with Innovation	King et al. (2008); Puranam & Srikanth (2007); Edwards (2012); Cloodt et al. (2006); Makri et. al., (2010)
	M&A Performance	Positive with Performance	King et al. (2003); Uhlenbruck et al. (2006)

Table 2: Summary of Findings in the Acquiring Perspective Literature

The authors found a strong and negative relationship, suggesting that firms with higher R&D expenditure engaged in fewer M&A. Furthermore, they found that the same was true for these firms over time – changes in R&D expenditure were related to changes in acquisition behavior such that as its R&D expenditures increased, M&A engaged in by the firm decreased. Continuing the examination of an acquirer’s motivation for M&A engagement, King et al. (2003) suggested that a M&A may take place to exploit innovation and to leverage complementary resources or capabilities. After providing a brief review of innovation literature, the authors noted that small firms and large firms have different resources utilized for innovation, and therefore combinations may result in

complementarities, or “complementary innovation-enhancing resources” (King et al. (2003); p. 592). Additionally, King et al. (2003) noted, “Abernathy and Utterback (1988) describe small firms as the principal source of product innovations, and large firms as the principal source of process innovations” (p. 591). The authors suggested that large established firms often enter new markets and technologies later, in part due to uncertain value and real-options reasoning, leaving room for entrepreneurs to take advantage of emerging opportunities. Smaller firms, with the ability to utilize external technologies, are often more flexible and more responsive and sometimes create new industries. Overall, it may be beneficial for acquirers to capitalize on size mismatches when engaging in M&A (most often large acquirers purchasing small firms) due to the potential complementarity of resources, especially after the emergence of a new dominant design.

With a more practice-focused research design, Mayer and Kenney (2004) examined Cisco’s M&A activity and presented quotes of managers, which indicated that Cisco’s primary reasons for M&A engagement were access to new technologies, strengthening of human capital, and overall market growth. Further, when examining potential targets, managers viewed not only the current state of the firm’s operations and its product offerings, but also considered the firm’s future potential and future generations of its products.

Continuing the focus on knowledge resources and technology firms, Puranam and Srikanth (2007) stated that the acquisition of technology firms by established firms was an important and common phenomenon and that acquiring firms often pursued acquisitions to access the knowledge of the target firms. Shifting from innovation to firm

performance, King et al. (2008) stated that acquisitions take place to improve the acquiring firm's performance, although it is often not the eventual outcome. Further, these authors identified another main rationale acquirers may have, which was access to resources, possibly complementary resources such as R&D or capabilities that the acquiring firm lacked.

As the literature continued to advance, Graebner et al. (2010) reviewed the research on acquisition of tech firms, often entrepreneurial firms, and showed that the reasons for engagement in acquisitions often were accessing new products or technologies, accessing innovative capabilities and the potential of young tech firms, entering new markets, or achieving strategic renewal by reconfiguring or recombining resources or technologies. As further support for these reasons, the authors highlighted the earlier findings of Ranft and Lord (2000) that in the acquisition of technology firms, 35% were conducted to access specific technologies and 32% to access innovation capabilities.

Continuing the focus on innovation and acquisition on knowledge resources, Edwards (2012) examined the importance of leaving the familiarity of the acquiring firm's core operations in pursuit for innovation. The author indicated that the motivation behind M&A is often the acquisition of technology and capabilities and showed that, overall, exploring further away from the firm's core, whether to new markets or new technologies or capabilities, may lead to lower performances. However, the author concluded that in today's environment of fast technological advancement, exploring beyond the firm's core is required.

As M&A in high-tech industries and research of the phenomenon became more common, Rossi et al. (2013) offered a review of the literature. In their article, Rossi et al. (2013) discussed the reasons for engagement in M&A. Additionally, in emphasizing high-tech acquisitions, (Rossi et al., 2013) specified the principal reasons for these deals included “access to competitive technologies, implementation of a diversification process, [and] recombination of organizational resources in a different way” (p. 69). Thus, the authors highlighted what acquiring firms may be looking for and perceive as attractive when engaging in M&A.

2.3.2 Target Selection

Although the selection of target firms may have effects on M&A performance and may be important for acquirers, only limited research focused on this step of the M&A process. For example, Hitt et al. (2009) noted that part of the development of a M&A capability is selecting acquisition targets, although it seems that the emphasis in the literature is on the integration part and the target selection part seems to be understudied.

Furthermore, although literature acknowledges the importance of the selection of the right targets for acquisition, resource picking (Makadok, 2001), and their valuation (Priem et al., 2012), research focusing on the criteria of the target is still limited and fragmented. For example, as presented in the previous section, Heeley et al. (2006) examined how a target firm’s R&D stock is related to its likelihood of being acquired, and noted, “the resource profiles of attractive acquisition targets have received significantly less research attention” (p. 1514). In contrast to the literature on the target firm’s side presented in the previous section, it is of note that the authors wrote about the

resource profiles of attractive targets and not of the target firm as a whole. This highlights the differences in views of the target firm in the different literature streams.

Continuing the research on target selection, Alessandri, Cerrato, and Depperu (2014) relied on the behavioral theory and examined how the acquirer's financial slack and acquisition experience were related to the type of acquisition completed in different economic conditions. Alessandri et al. (2014) analyzed a sample of 385 large acquisitions in Italy from 2007 to 2010 and found that, particularly under unfavorable economic conditions, acquirers with more financial slack and more acquisition experience were likely to engage in cross-border and diversifying acquisitions as compared to non-diversifying domestic acquisitions.

Finally, Kaul and Wu (2015) suggested that "The question of what acquirers look for when assessing targets thus remains open" (p. 1221). Additionally, the authors highlighted that one of their contributions is addressing the question of target selection beyond just the information view, but acknowledged that more research is needed.

2.3.3 Acquisition Premiums

Coff (1999) stated that knowledge is often the focus of acquisitions, and in acquisitions of knowledge-intensive firms it is hard to observe variations in quality. In turn, uncertainty about the target knowledge resource can be broken down to three parts: uncertainty about the actual quality of the knowledge, uncertainty about what knowledge can be transferred, and uncertainty about the synergies that would result from the transfer. The information asymmetry problem may be addressed by acquirers in several ways, such as offering lower bids, having lengthy negotiations, and avoiding cash payments. Hypotheses were tested using a sample of 218 acquisitions drawn from the

ADP database and cross-referenced with COMPUSTAT between 1988 and 1999. Results support the hypothesis that acquirers' coping strategies mentioned above were related to the industries' knowledge intensity, although it was less likely for unrelated buyers.

Coff (2003) built on the knowledge-based view of the firm and transaction cost economics in examining the relationship between R&D intensity and bidding wars. The sample obtained from SDC included acquisitions during the 1980-1999 period and was limited by data availability for R&D expenditure. Results suggested that the target firm's R&D intensity was positively related to lock-up agreements and negatively related to bidding wars. In turn, this may serve as an explanation as to "why bidding premiums are lower for knowledge intensive targets" (Coff, 2003; p. 82), but not as to what acquiring firms perceive as desirable or valuable.

However, despite the importance of M&A premiums, the topic has received very limited attention in the literature (Hitt et al., 2009; Laamanen, 2007). The premium paid in acquisitions is often the key factor that explains underperformance of the acquisitions because acquirers simply overpay beyond the synergies they are later able to achieve. Additionally, although personal motivations or characteristics of the acquirers' managers may explain some of the overpayment, some premiums are due to an inability to properly identify and evaluate the target firms and manage the acquisition.

2.3.4 Innovative Outcomes

Although innovation outcomes can be viewed as an indication of performance of an acquisition, the topic is examined separately in this paper because (a) it can be viewed as a unique sub-stream in the literature, and (b) may be of unique importance in

acquisition of entrepreneurial and/or high-tech firms where the more common indicators of financial performance may simply not apply.

Further, Cloudt et al. (2006) studied the relatedness between the knowledge bases of the acquiring and target firms. The authors built on RBV and the organizational learning rationale and examined the factors that may be related to post-M&A innovative outcomes. In particular, Cloudt et al. (2006) examined how the absolute and relative size of the acquired knowledge bases as well as the relatedness between the knowledge bases are related to post-M&A innovative outcomes. Hypotheses were tested on a sample of 347 companies, 256 of which were headquartered in North America, 45 in Europe, and 46 in Asia. The firms operated in four high-tech industries, specifically aerospace and defense, computers and office machinery, pharmaceuticals, and electronic and communication. Overall, in the period between 1985 and 1994, these companies engaged in 2,429 M&A transactions, of which 1,148 were classified as technological and 1,281 as non-technological. Results provided support for hypotheses, suggesting that the absolute and relative size of knowledge bases have effects and that technological relatedness has a curvilinear effect.

Puranam and Srikanth (2007) continued the examination of acquisition of tech firms and focused on the integration aspect. Specifically, the authors examined how integration of targets that are small tech firms can both help and hurt the process. The commonly recognized dilemma is that integration may hurt innovative capabilities, but enhance knowledge transfer. Therefore, the authors argued that the intended use of the acquired knowledge could be viewed as either the knowledge of *how* and *what*. Specifically, *what* pertains to acquiring the knowledge that already exists, while *how*

pertains to acquiring the capability to create new knowledge. For the former, the hypothesis is that structural integration is positively related, and for the latter negatively related. Additionally, the relationship about knowledge leverage and capability leverage are positively moderated by acquisition experience. Testing of hypotheses was done with a final sample drawn from SDC of 97 acquisitions of small firms (under 500 employees) that had filed at least one patent. Results supported the hypotheses, and thus (Puranam & Srikanth, 2007) highlighted the importance of distinguishing between the two types of acquisition - acquisition of knowledge and acquisition of capabilities, their motive, and how to approach these.

Continuing the research on resource and knowledge acquisition, Makri, Hitt, and Lane (2010) studied how complementarities in scientific and technological knowledge between firms are related to post-acquisition invention performance. First, they highlighted that the view of relatedness as commonly captured in strategy literature may be limited since it often captures similarities in markets and products, but not in knowledge and capabilities. Second, the authors distinguished between scientific and technological knowledge and showed how these can be related to different types of innovation. Third, the authors highlighted the difference between similarity and complementarity, where similarity is focused on the same narrow field and complementarity is how the distinct narrow fields of focus are shared within a broader field.

Additionally, Makri et al. (2010) noted that they limit the focus to similarities and complementarities within the R&D activity as opposed to across different activities of the value chain. Makri et al. (2010) used a sample of 95 M&A in drugs, chemical, and

electronics industries in 1996, between \$10 million and \$500 million in size, and relied on patents and citations to capture knowledge and innovation complementarities and post-M&A innovation performance. Results of the analyses suggested that knowledge complementarities have a positive effect on innovation outcomes and that the combination of both scientific knowledge complementarities and technology knowledge complementarities have an even more positive effect on innovation outcomes.

Continuing the research on the process of knowledge transfer as well as on the factors that are related to the transfer outcomes, Bresman, Birkinshaw, and Nobel (2010) examined cases of 42 multinationals and three acquisitions in the Swedish R&D context and received 219 questionnaires answered by personnel in R&D units. The authors presented several interesting findings including that different types of knowledge are transferred differently and in different stages of the process. Specifically, more articulate knowledge such as project management systems and technologies was transferred first, while tacit knowledge involving higher levels of collaborations was transferred later.

2.3.5 M&A Performance

After examining why firms engage in M&A, this section examines the literature on M&A performance. The rationale is that, assuming acquirers are rational and interested in positive performance outcomes, factors related to performance may also be related to the value acquirers expect to extract from the acquisition and, therefore, to target firm's attractiveness as an acquisition candidate. In other words, acquirers will be attracted to target firms that they think have higher potential to enhance the combined entity's post-M&A performance.

Continuing with a similar approach, Langford and Brown III (2004) presented the lessons learned from their practitioner-focused study of top-performing acquirers. The factors examined included acquisition premiums, number of transactions for each acquiring firm, and cross-border acquisitions. The authors summarized their conclusions with a CEO checklist, which included the importance of properly evaluating potential synergies, capturing opportunities of high value, and reaching various agreements within the management team of the acquiring firm.

In an effort to explain greater variance in M&A outcomes, Uhlenbruck, Hitt, and Semadeni (2006) built on the RBV and organizational learning perspectives to study acquisitions of a sub-group of firms, specifically Internet target firms acquired by both Internet and non-Internet firms. Further, Uhlenbruck et al. (2006) used a sample limited to public firms from 1995 to 2001 and transactions where the acquirer had over 51% of ownership after the transaction and no more than 49% of ownership before the transaction. Hypotheses were tested using an event study, capturing abnormal returns as an indication for performance. The acquisition of Internet firms was found positively related to short-term, market-based M&A performance for Internet and non-Internet acquirers. The authors concluded that acquisition of Internet firms by Internet firms “were made for competitive positioning and competitive advantage reasons. Alternatively, acquisitions of online firms by offline firms attempt to integrate complementary resources and gain early-mover advantages” (Uhlenbruck et al. (2006); p. 910). Thus, the study documented how acquisitions may occur with the focus on operating capabilities, rather than products that may be complementary.

Focusing on resource complementarities and relying on the RBV, King et al. (2008) examined how a target firm's R&D resources interact with an acquirer's marketing resources and absorptive capacity. King et al. (2008) used a sample of 133 acquisitions, over \$10 million of public high-tech firms from 1994 to 1997. Analysis revealed interesting results – relatedness was positively related to performance, but target R&D and its interaction with acquirer R&D were both negatively related to performance due to resources substitution and surplus. Finally, interaction of target R&D and acquirer marketing resources was positively related to acquisition performance as these complemented each other. King et al. (2008) concluded that “acquisitions do not lead to higher performance on average (King et al., 2004), but we find resource interactions play a significant role in explaining the performance of acquiring firms” (p. 333). This finding further suggests that, when evaluating potential acquisition targets, acquiring firms may focus on the potential of post-M&A interactions of the target firm's resources with its own and not solely on the target firm's resources and performance as a stand-alone entity.

In their review of advances in the M&A literature, Hitt et al. (2009) dedicated a section to technology and learning in acquisitions, highlighting the uniqueness of this context. The authors stressed the importance of innovation and that acquisitions may be an alternative way to obtaining the knowledge and complementary capabilities to create new capabilities and innovations that may lead to competitive advantage. However, the authors noted that identification of targets and avoidance of excessive premiums are key with regards to M&A performance.

Riviezzo (2013) utilized the multiple-cases method to study the M&A process and outcomes and focused on acquisitions where the main motive of the acquirer is access to

knowledge-based resources. Specifically, acquirer market and entrepreneurial orientation, structure, and experience were proposed to be related to the way acquisitions are managed and their performance outcomes. As synergies are often the goal of M&A, Fiorentino and Garzella (2015) offered a review on synergy management pitfalls in mergers and acquisitions and highlighted the dangers of both over-estimation of the potential value in an acquisition and under-estimation of the difficulties in realizing the synergies required to extract the value. In their review, the authors noted that synergies as a motive for M&A received support in the literature and theory, and included resources of different types, activities in firms' value chains, and exploration and/or exploitation activities. Synergy is often viewed as a functional motive, and proper target selection, evaluation, and integration may result in realized synergies and above average returns to all stakeholders.

2.4 Chapter Conclusion – Bridging the Two Sides

This literature review chapter presented the literature on both sides of M&A. The chapter began with literature that examined how and why private firm's exit via M&A is part of the entrepreneurial phenomenon and may be a goal and means for wealth creation for firm's owners. As such, the firm may be viewed as a product, selling the firm may be viewed as the goal, and the acquirers may be viewed as the potential customers. This section further explained why target firm's attractiveness as an acquisition target is the construct of interest and the connector that bridges the two sides in M&A of private firms.

The second section of the chapter continued with the focus on private firms and examined the literature focusing on the various modes of firms' exit, with a particular

emphasis on identifying factors that have been shown to be related to firm's exit via M&A. First, two common themes across the literature streams appear to be that firm exit is understudied and that firm's exit does not always indicate failure (Wennberg & DeTienne, 2014). Second, the organization of articles in this section illustrated the various perspectives used to study the phenomenon and identified multiple factors that influence a firm's exit mode.

Additionally, although empirical studies offered support for some of the relationship, there were also many mixed and inconsistent results regarding factors related to firm's exit via M&A. However, it is notable that this is a literature stream where context may have high importance, and the empirical analyses were conducted using different samples from different countries and industries, focusing on different levels of analysis, and building upon different theoretical perspectives in different disciplines.

Generally, the factors that appear to be related to a firm's likelihood of being acquired are its human capital, its innovative resources and capabilities, and other aspects of its operations. More specifically, the target firm factors often considered are its age, size, innovative capabilities, and operation in environments that are innovative or in industries with specific characteristics. Finally, evidence of involvement by venture capitalists, including factors such as VC experience, VC reputation, number of investors, and stage of investment, was examined as a signal of a target's quality to potential acquirers and the market (Ragozzino & Blevins, 2015). As such, this section showed what factors of private firms were related to their likelihood of experiencing a M&A event.

The next section of the chapter shifted the focus to the acquiring firm and examined M&A from the acquiring perspective, identifying the various factors that may be attractive to acquirers. However, the literature on the factors that make a firm attractive to acquirers as a potential acquisition target is limited and it is still not clear what acquirers look for in target firms when making acquisition decisions (Kaul & Wu, 2015). Therefore, the section first examined the literature to understand why acquirers engage in M&A and what may be the common motives. Then the section examined literature to identify factors related to target selection, share acquired, and M&A premiums. In other words, the literature was organized such that the section presented why firms engage in M&A, which firms may be acquired and not acquired, what share of the firm is acquired, and how much premium the acquirer is willing to pay. Finally, the section examined the literature on M&A performance to identify factors that acquirers may desire, assuming they are interested in improved performance following the acquisition. As such, the section presented what the acquiring firms may value and perceive as attractive in target firms.

The review of literature on the acquiring side revealed several interesting points. First, there are several common factors that are related to M&A performance, target selection, share acquired, and M&A premiums. Among the common factors identified are acquirer's M&A capabilities, often captured as M&A experience, and extent of similarity between the firms, often captured as relatedness. Furthermore, many acquisitions are motivated by the acquiring firm's desire to gain access to innovation and knowledge resources of the target firm. Second, the acquisition of private firms, often by large firms,

is a common phenomenon, although only limited literature examined it (Graebner et al., 2010; Rossi et al., 2013; Wennberg & DeTienne, 2014).

As the focus in this paper is on the acquisition of private firms, the review was focused appropriately. The goal that is often pursued in the acquisition of private firms is the acquisition of resources (Graebner et al., 2010; Hitt et al., 2009; Puranam, Singh, & Chaudhuri, 2009; Puranam & Srikanth, 2007; Ranft & Lord, 2000, 2002; Rossi et al., 2013), often intangible resources (Graebner et al., 2010; Heeley et al., 2006), and integration of these resources into the firm to achieve synergies (Bauer, Matzler, & Wolf, 2014; Ellis, Weber, Raveh, & Tarba, 2012; Graebner, 2004; Hitt et al., 2009; Kirca et al., 2011; Larsson & Finkelstein, 1999; Puranam et al., 2009; Puranam & Srikanth, 2007; Seth, 1990; Weber & Tarba, 2011; Zhu, Xia, & Makino, 2015). The synergies could be achieved by leveraging and/or scaling the acquirer's firm capabilities, the target firm's capabilities, or complementarities in the two firms' knowledge or technology (Heeley et al., 2006; King et al., 2008; Makri et al., 2010). Similarly, these acquisitions may focus on innovative capabilities and on new products or technology (Graebner et al., 2010; Heeley et al., 2006; Rossi et al., 2013) or serve as a supplement for internal R&D (Heeley et al., 2006; Rossi et al., 2013), or as part of corporate venture capital (Benson & Ziedonis, 2009, 2010; Ivanov & Xie, 2010; Keil, 2004).

As such, the potential of value extraction following the acquisition is what is important for acquirers (Graebner et al., 2010; Hitt et al., 2009), and therefore influences what acquirers may find attractive in an acquisition candidate. However, identifying and properly evaluating the resources in target firms is challenging (Graebner et al., 2010; Heeley et al., 2006; Hitt et al., 2009; Ragozzino & Blevins, 2015; Ragozzino & Reuer,

2007). This is especially true for firms that are private, small, and have a high share of intangible resources (Faifman, Ellis, & Golden, 2016)(Faifman, Ellis, & Golden, 2016)(Faifman, Ellis, & Golden, 2016)(Faifman, Ellis, & Golden, 2016)(Faifman, Ellis, & Golden, 2016)(Faifman et al., 2016).

Further, as large firms often need to balance between entrepreneurial and strategic orientation, that is, searching for new opportunities or exploiting current opportunities (Hitt et al., 2011; Levinthal & March, 1993; March, 1991), acquisition of innovative firms may supplement the search for new opportunities (Graebner et al., 2010). Therefore, acquirers of private firms may find attractive firms that are more dedicated to innovation. Acquisition of this type of firm may also be more attractive because it may require lower acquisition premiums as compared to acquisition of a firm to exclude it as a competitor (Heeley et al., 2006; King et al., 2008).

Clearly, the acquisition of private firms may offer acquirers multiple benefits and opportunities for high value extraction potential. However, as noted earlier, identifying and properly evaluating the resources in and focus of target firms is challenging, especially when acquiring private firms. Therefore, acquirers may rely on signals they receive from the target firms regarding the characteristics of firms' resources and capabilities (Backes-Gellner & Werner, 2007; Ragozzino & Reuer, 2007) to determine firm's attractiveness as an acquisition candidate. From the target perspective, there are various factors that may be attractive to acquirers. Following the RBV rationale (Barney, 1991), acquirers would be attracted to resources that are either valuable, rare, not easily imitable, and non-substitutable (VRIN) or to resources that could be combined with the acquiring firm's current resources to create VRIN resources. From the joint view

perspective, the factors that may be related to this potential are the acquirer's ability to conduct the M&A process, the similarity and complementarity between the firms, and the extent of potential synergies and potential for scaling/leverage as well as distances between the firms.

The next chapter presents the theoretical framework and develops the hypotheses of this paper. With the high levels of uncertainty and information asymmetry in the context of M&A of private target firms, the main theoretical framework utilized is signaling theory (Bergh, Connelly, Ketchen, & Shannon, 2014; Spence, 1973, 1974). As such, the next chapter offers hypotheses regarding the relationships between the signals that the private firm sends and the acquiring firm's perceptions of the private firm's attractiveness as an acquisition target.

CHAPTER 3. HYPOTHESES DEVELOPMENT

3.1 Introduction

The previous chapters examined the M&A literature from both sides of the transaction. First, the literature suggests that private firms may be founded with the goal of being sold, and thus there should be a way to (a) distinguish between failure and success of achieving the goal and (b) ability to measure the variance in it (Dess & Robinson, 1984).

Continuing with review of the literature on both sides in M&A, scholars studied the factors related to the firm going through a M&A event, while on the acquiring side scholars studied how firms select acquisition targets, factors related to M&A performance, and the M&A premiums paid. On the target firm side, primarily of private firms, the phenomenon of experiencing a M&A event was studied in different contexts and from different perspectives. Studies mostly examined whether the firm continued in its environment or exited by either M&A or liquidation. The factors that were mostly studied are firm's age and size, innovative capabilities, financial performance, and human capital, although the results of the studies are mixed.

For example, firm size was negatively related to exit (Bhattacharjee, Higson, Holly, & Kattuman, 2009; Billett, 1996; Bruno & Cooper, 1982; Cooper & Bruno, 1977; Harhoff et al., 1998; Peel & Wilson, 1989; Wennberg et al., 2010), while mid-size was positively related to M&A. Furthermore, some literature suggests that firm size was positively related to M&A

(Balcaen et al., 2012; Esteve-Pérez et al., 2010; Fortune & Mitchell, 2012; Greenaway et al., 2009; van Teeffelen & Uhlaner, 2013) and, in some cases, size was not significantly related to exit (Grilli, 2011; Lee & Lee, 2015).

Similarly, firm's age was found to be negatively related to its likelihood to exit (Amaral, Baptista, & Lima, 2007); to be indirectly related to the likelihood of experiencing a M&A event, with 4-7 years as peak age (Bruno & Cooper, 1982); to be positively related to M&A (Esteve-Pérez et al., 2010; Fortune & Mitchell, 2012; Greenaway et al., 2009; Köke, 2002); or to not show significant results (Grilli, 2011; Lee & Lee, 2015).

Additionally, literature suggests that financial performance is positively related to M&A (Åstebro & Winter, 2012; Bhattacharjee et al., 2009; Greenaway et al., 2009; Köke, 2002; Schary, 1991; van Teeffelen & Uhlaner, 2013). Finally, human capital characteristics, such as experience and education, were found to be positively related to M&A (Bruno & Cooper, 1982; Coleman et al., 2013; Cooper & Bruno, 1977; Fortune & Mitchell, 2012; Wennberg et al., 2010); negatively related to exit, but not significantly to M&A (Greenaway et al., 2009); or did not appear to be significant (Lee & Lee, 2015; van Teeffelen & Uhlaner, 2013).

The innovation capabilities of the target firm or the extent of firm's knowledge were mostly positively related to both firm survival and experiencing a M&A event (Cefis & Marsili, 2006, 2011, 2012) and had a non-linear effect (Fontana & Nesta, 2009). Further, different types of innovation and in different industries had different effects (Cefis & Marsili, 2011; Heeley et al., 2006). Additionally, innovativeness of the environment was negatively related to firm's survival (Esteve-Pérez et al., 2010),

positively related to a M&A event (Heeley et al., 2006), or did not present significant results regarding M&A (Esteve-Pérez et al., 2010).

On the acquiring side of M&A, literature examined why firms engage in M&A; what they may want to achieve; and the way firms manage the M&A process, from target selection and M&A premiums paid to integration and post-M&A outcomes. Although acquiring firms may engage in M&A due to various reasons (Brueller et al., 2014; Hitt et al., 2009; King et al., 2004), literature suggests that the main reasons to engage in M&A are access to knowledge-based resources (Coff, 1999, 2003; Puranam & Srikanth, 2007; Ranft & Lord, 2000, 2002; Riviezzo, 2013), especially in the context of private or high-tech firms (Graebner et al., 2010; Rossi et al., 2013).

Similarly, firms may engage in M&A to achieve complementarities in their resources or capabilities related to knowledge and other intangible resources (Cloodt et al., 2006; King et al., 2008; Makri et al., 2010; Uhlenbruck et al., 2006) or new capabilities to avoid core rigidities (Cohen & Levinthal, 1990; Edwards, 2012; Eisenhardt & Martin, 2000; Grant, 1996; Makadok, 2001; Teece, Pisano, & Shuen, 1997). Furthermore, (Kaul & Wu, 2015) suggested that “The question of what acquirers look for when assessing targets thus remains open” (p. 1221).

Moreover, literature devoted much attention to the process of M&A, primarily integration and the post-M&A effects. Literature suggests that target identification and evaluation (Makadok, 2001), valuation (Priem et al., 2012), and M&A experience and integration practices (Alessandri et al., 2014; Ellis et al., 2011; Nadolska & Barkema, 2007) as well as resource similarity and relatedness are all related to M&A outcomes (Fiorentino & Garzella, 2015; Hitt et al., 2009; King et al., 2004). Similarly, literature

examined M&A premiums and identified various related factors of the acquiring firm, such as acquiring firm's growth desperation (Kim et al., 2011) and innovation capabilities as well as environmental factors (Carow, Heron, & Saxton, 2004; Laamanen, 2007; McNamara, Haleblan, & Dykes, 2008). However, despite the notion that paying high M&A premiums is one of the main reasons for low M&A performance (Hitt et al., 2009), the topic received limited attention in the literature (Hitt et al., 2009; Laamanen, 2007).

3.1.2 Joint Perspective

Accordingly, from the target firm's perspective, going through an M&A event is an important step, primarily due to the associated returns the firm's owners may receive (Cefis & Marsili, 2012; DeTienne et al., 2014; Heeley et al., 2006; Wennberg & DeTienne, 2014). For example, (Heeley et al., 2006) suggested that "Shareholders of target firms typically realize stock premiums during acquisitions. Research indicates that such premiums are commonly over 40 per cent of the target firm's per share value (Jensen, 1993)" (p. 1530). The literature that focused on the target firm studied the M&A event itself and whether the firm experienced it. However, for target firms that experienced an M&A event, returns were also determined by the M&A transaction value received. The variance in the transaction value received by target firms within the group of the firms that were acquired may further explain the variance in these firms' returns (Cefis & Marsili, 2012). In addition, while the literature on M&A premiums may offer some insight, it has limitations; for example, the focus is primarily on the acquiring firm and the studies are limited to public target firms, while 60%-75% of all M&A are of private target firms (Capron & Shen, 2007).

From the acquiring firm's perspective, selection of the target to acquire and the price paid in M&A are also important, since paying higher M&A premiums is associated with lower returns for the acquiring firm (Hitt et al., 2009). These literature streams related to target selection, M&A capability, and M&A premiums studied these topics extensively. However, the focus was primarily on the acquiring firm and the M&A process, while the factors of the target firm, especially a private target firm, received limited attention.

As such, this paper continues the study of the phenomenon of acquisition of private firms and extends the literature in several ways. First, from the perspective of the target firm, the paper extends beyond the dichotomous view of M&A vs. no M&A and examines the variance in the transaction value the private target firm received in M&A. Second, the paper develops a theoretical framework that examines the target firm from the acquiring firm's perspective. With the intention of bridging the target and acquiring sides in M&A, the paper focuses on the concept of private firm's attractiveness as an acquisition target, which is explained later in this chapter. Finally, this paper extends the literature that studies the phenomenon in other, limiting contexts. Specifically, the paper extends the study of target firm's attractiveness (Heeley et al., 2006) and transaction value or M&A premiums to the context of private firms. The paper also extends the study of the private firm going through an M&A event to the U.S. context to multiple industries and to firms that were both backed and not backed by investors.

The paper builds on a theoretical framework that integrates the RBV (Barney, 1991) with signaling theory (Spence, 1973, 1974) and develops a model of acquisition of private target firms. In the model, private firm's attractiveness as an acquisition target is

the connector that bridges the acquiring and target sides in M&A. As seen in the literature, RBV can explain what resources the acquiring firms may be interested in obtaining. Similarly, signaling theory explains the dynamics between a buyer and a seller in an environment characterized by information asymmetry and uncertainty (Spence, 1973, 1974). As such, signaling theory explains how a buyer may evaluate the seller and the seller's actions to communicate its value to the buyer (Bergh et al., 2014; Connelly, Certo, Ireland, & Reutzel, 2011; Spence, 1973, 1974).

The integrated theoretical framework, combining RBV with the signaling theory, may explain what the acquiring firms may be interested in obtaining, how the acquiring firms may evaluate the acquisition candidate, and how the target firm may communicate its value. As such, the paper makes a theoretical contribution as well as builds on this theoretical framework to develop the model of private firm's attractiveness that connects both sides in M&A (Figure 1).

The remaining portion of the introduction section further explains the rationale for studying firm's attractiveness as a target. The following section presents the theoretical framework that was briefly discussed earlier, followed by the hypotheses development section, and conclusion.

3.1.3 Attractiveness

By examining private firm's attractiveness as an acquisition target, the model in this paper bridges the gap between the two sides of M&A. As such, this paper extends the accomplishments already present in the literature by using the theoretical framework

Figure 1: Private Firm's Attractiveness as an Acquisition Target

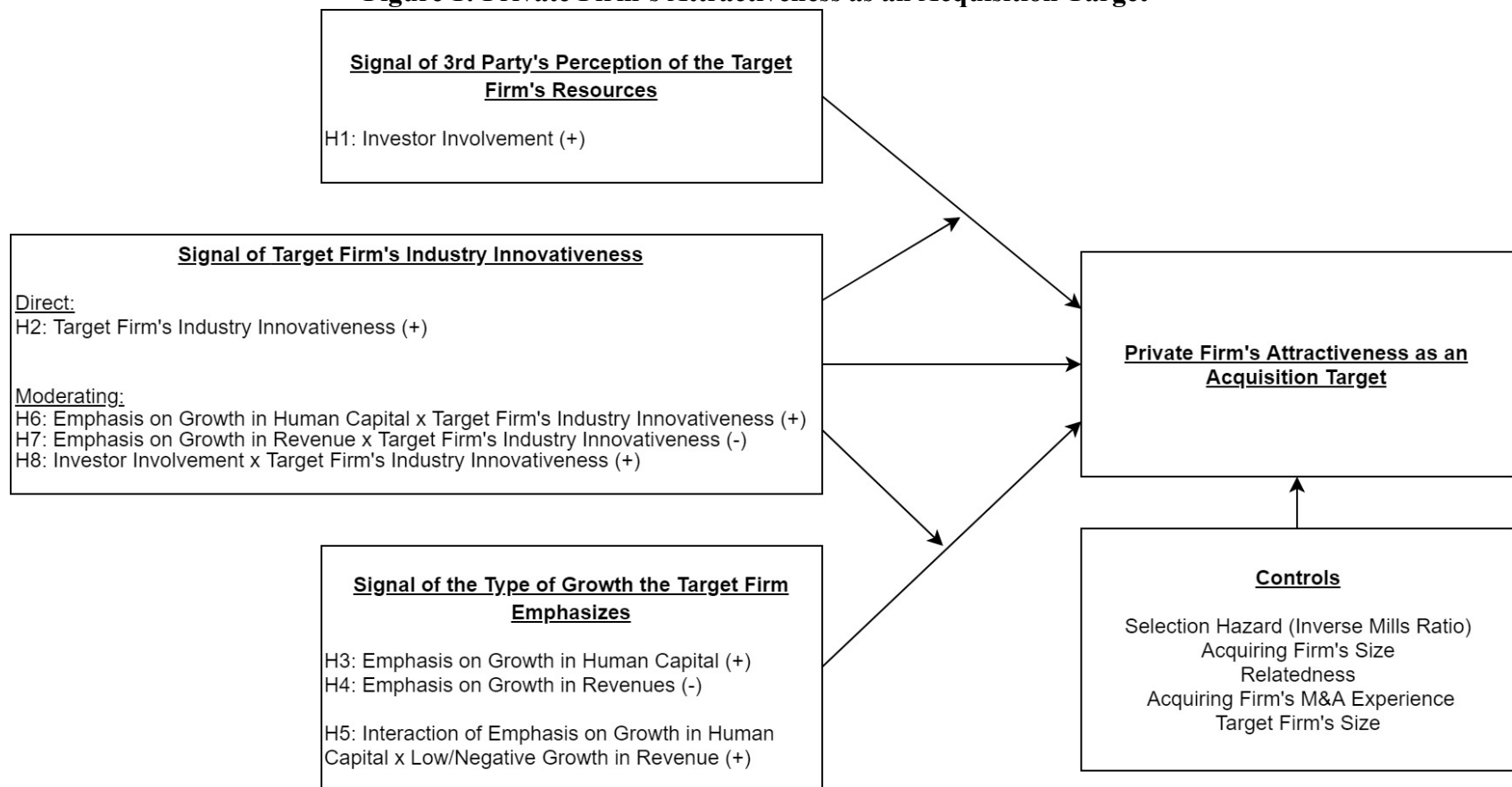


Figure 1: Private Firm's Attractiveness as an Acquisition Target

presented below, which allows the developing of the theoretical model as well as bridging the two sides in M&A.

To conclude, this paper builds on a theoretical framework that integrates RBV and signaling theory to develop a theoretical model that connects both sides in M&A. The integrated theoretical framework explains both what the acquiring firms may find desirable and how they could evaluate the target in the conditions of high information asymmetry and uncertainty, which are the conditions in the context of acquisition of private firms. By developing the integrated theoretical framework and the model described, this paper makes a contribution to theory and to the studies of the phenomena described above. As such, by studying firm's attractiveness, the paper answers the research question: *What makes private firms attractive as an acquisition target?*

3.2 Theoretical Framework

To answer the research question of *What makes private firms attractive as acquisition targets?* the paper follows the rationale previously presented and examines the acquisition from the acquirer's perspective. First, the paper builds on the RBV to explain what acquirers may perceive as attractive.

Second, the context of acquisition of private firms is characterized by conditions of high levels of information asymmetry and uncertainty (Ragozzino & Blevins, 2015; Ragozzino & Reuer, 2007, 2010). The signaling theory suggests that, in such conditions, buyers are unable to evaluate the seller and/or the product acquired because the true value becomes clear only after the acquisition. As such, buyers face the hazard of adverse selection: overpaying for lower quality goods and underpaying for high quality goods (no deal) (Bergh et al., 2014; Connelly et al., 2011; Spence, 1973, 1974).

To conclude, RBV offers the theoretical framework that can explain to *what* the acquirers are attracted in M&A. In the context of acquisition of private firms, however, acquirers may be unable to evaluate the target firms and their characteristics. The signaling theory can explain *how* acquirers can evaluate the target firms in this context. As such, in the context of acquisition of private target firms, the RBV and the signaling theory may complement each other when used jointly in a theoretical framework.

3.2.1 Resource-based View

The resource-based view of the firm (Barney, 1991; Peteraf & Barney, 2003) is a theoretical framework that is widely used in strategy research (Alvarez & Busenitz, 2001; Cefis & Marsili, 2012; Coleman et al., 2013; Hitt et al., 2009; Kraaijenbrink, Spender, & Groen, 2010; Leiblein, 2011; Priem et al., 2012). RBV suggests that firms can be viewed as a bundle of resources that are combined and managed by the firm. When the firm controls resources that are valuable, rare, inimitable, and non-substitutable (VRIN), the firm can achieve sustained competitive advantage (Barney, 1991). Resources can be tangible or intangible and may include knowledge and capabilities, including tacit knowledge and know-how. With regards to M&A, the RBV rationale views the target firm as a bundle of resources and suggests that acquisition may be done to gain access to such resources that could not be obtained otherwise. The use of the acquiring firm's current and new resources may result in synergies (Seth, 1990), which in turn may justify paying an acquisition premium above the value of the target firm. Following this rationale, the value of the acquired resources may be greater when combined with the resources of the acquiring firm than when on its own (Hitt et al., 2009; King et al., 2003; King et al., 2008).

3.2.2 Signaling Theory

Private target firms may have high levels of intangible resources and may have no revenue, and thus evaluation of such firms may be very difficult (Graebner et al., 2010; Heeley et al., 2006; Ragozzino & Blevins, 2015; Ragozzino & Reuer, 2007, 2010; Rossi et al., 2013). Combined with the high levels of uncertainty and information asymmetries, potential acquirers face higher hazards of adverse selection (Ragozzino & Blevins, 2015). In other words, acquirers risk paying too high a premium, which may result in negative post-M&A performance outcomes for the acquirer (Hitt et al., 2009). As such, while overpayment may result in lower returns for the acquiring firm, overpayment may result in higher returns for the target firm.

In this context, acquirers of private firms have to rely on signals they receive from the target firms. Acquirer's perception of the target firm and its overall quality and VRIN is based on a reliable signal received from the target firm. Signaling theory explains the criteria of such signal and the criteria that make the signal reliable in the eyes of the buyer.

According to signaling theory (Akerlof, 1970; Spence, 1973, 1974), in conditions of information asymmetry and the hazard of adverse selection, the sides have to rely on signaling to communicate and evaluate quality. This occurs due to the buyer's uncertainty regarding the quality of the product or service acquired, whether there is a risk of overpaying for a low quality product or service, or offering a price that would be appropriate for a low quality product. However, sellers who offer high quality product or service would reject such an offer. Therefore, the seller may pay for something that signals quality to the acquirer, such that acquiring the same signal will have higher cost

for a seller of a lower quality product or service. As such, sellers of higher quality products and services will benefit from paying the price for the signal and do so, while sellers of lower quality products or services will not benefit due to the higher costs for the signal. This results in an equilibrium where, due to differences in costs of the signal, sellers of higher quality goods acquire the signal and use it to sell the products for a higher price, while sellers of lower quality products do not acquire the signal because it is not beneficial and therefore sell their products for a lower price.

Bergh et al. (2014) noted that this concept is referred to as the separating equilibrium concept and it “is the essential predictive mechanism that drives the unique explanations associated with signaling theory-based hypotheses” (p. 1335). Interestingly, although strategy research that built on signaling theory examined the various signals sent by firms, limited attention has been given to the concept of separating equilibrium in strategy research (Bergh et al., 2014; Connelly et al., 2011).

Accordingly, the most accurate use of the signaling theory requires identifying and presenting the separating equilibrium as it is required for the signals to be most meaningful (Bergh et al., 2014; Connelly et al., 2011; Spence, 1973, 1974). In the context of acquisition of private firms, high-quality and low-quality firms would send different signals. Further, the cost of a signal will be different for high-quality and low-quality sellers. Specifically, low-quality firms will have higher costs they have to pay for the signal than high-quality firms.

The use of signaling theory is gaining popularity in strategy research (Bergh et al., 2014; Connelly et al., 2011), including research on acquisition target selection and type of engagement (Reuer & Ragozzino, 2012), premiums (Reuer, Tong, & Wu, 2012), and

IPO and attractiveness (Ragozzino & Reuer, 2007). Calls for future research suggest that a theoretical framework that combines RBV and signaling theory could be interesting and valuable (Ragozzino & Blevins, 2015).

3.3 Hypotheses Development

3.3.1 A Reliable Signal

The context of acquisition of private firms is characterized by high levels of information asymmetry and uncertainty (Ragozzino & Reuer, 2007, 2010). According to the signaling theory, in such conditions acquirers face the hazard of adverse selection – either overpaying for a low quality product or underpaying for a high quality product, which may result in the seller not willing to sell (Akerlof, 1970; Bergh et al., 2014; Spence, 1974). To address this issue and reduce this risk, buyers can evaluate reliable signals to distinguish low quality sellers from high quality sellers. However, the signal is reliable only if the rationale of the separation equilibrium holds: The same signal would cost more for a low quality seller than a high quality seller.

Spence's (1973) seminal work presented the example of hiring a new employee. The employer is willing to pay a higher price for higher quality workers, but cannot evaluate the quality of the worker before hiring and thus has to rely on a reliable signal; in this example, a professional certification. While the cost of *attempting* to acquire certification is the same for low quality and high quality workers, the cost of *successfully receiving* it is higher for low quality workers. The assumption is that low quality employees may have a higher risk of failure, causing them to have to retake the course and, as such, the total cost for having the certificate may be higher for them. In such conditions, high-quality workers may pursue certification because the future higher

wages outweigh the cost of the certificate. On the other hand, low quality workers will not pursue the certificate because, even if they may receive higher wages in the future, the higher cost of the certificate outweighs the future gains. As such, certification itself becomes a reliable signal of quality (Bergh et al., 2014).

In other words, low quality workers understand that obtaining certification may be more risky for them due to their low quality and, therefore, the cost will be higher. The higher quality workers understand that obtaining certification may be less risky for them due to their high quality and, therefore, the cost will be lower. The certification itself becomes a reliable signal for the acquirer, and therefore high quality workers will work toward obtaining it since this will separate them from lower quality workers and result in them receiving higher wages when hired.

In the context of acquisition of private firms, a similar rationale may apply. Due to the information asymmetry, acquirers may be unable to evaluate the target firm and its resources prior to the acquisition, and therefore may have to search for reliable signals about the target firm's quality. For the signal to be reliable, it must have a higher cost for lower quality target firms and a lower cost for higher quality firms. Similar to the rationale presented above, the difference in cost of obtaining the signal may lie in the difference in risk for higher and lower quality firms. As such, the cost of *starting* a process or going on a path may be the same, but the estimated total cost has to be different due to the differences in risk for the low and high quality firms. Specifically, the estimated total cost has to be higher for lower quality firms because the same path is riskier for them due to their lower quality.

As noted earlier, according to the RBV, acquiring firms may be attracted to target firms that they perceive to have VRIN resources. As such, in the context of acquisition of private firms, the terminology of high quality and low quality may be supplemented by VRIN characteristics of the target firm's resources. Thus, acquirers may search for reliable signals to evaluate the VRIN characteristics of the target firm's resources.

To conclude, acquirers may be more attracted to high quality target firms with VRIN resources, but are unable to evaluate these. Thus, acquirers have to search for reliable signals. For a signal to be reliable, the path to obtaining it has to have a higher total estimated cost for lower quality target firms, which may be due to higher risk. Due to the differences in risk and with the total estimated cost, higher quality firms may follow the path that lower quality firms may not.

3.3.2 Third Party

A signal that acquiring firms may look for is third party involvement with the target firm. Research that examined the roles of third party in M&A found that its presence may be related to M&A and may be a signal of higher quality of the target firm (Bergh et al., 2014; Bruton, Chahine, & Filatotchev, 2009; Connelly et al., 2011; Ragozzino & Blevins, 2015). The rationale is that third parties, such as VCs and investment banks, due to the nature of their business and experience, have the ability to evaluate target firms as well as prepare them for acquisition (Mishra, 2015).

For example, the rationale is that VCs are expert risk takers and business accelerators who select a small number of firms with high potential, grow firms fast, and promote them (Mishra, 2015; Puri & Zarutskie, 2012). As such, the presence of investors on its own is a signal of quality, since the investors screen the firms and only select to

invest in a small number. Similarly, third party involvement may address the information asymmetry issues that acquirers face, especially when acquiring private firms.

Furthermore, from the separating equilibrium perspective, acquirers may view investor presence as a signal of higher quality as this may be associated with higher risks for some entrepreneurs or owners of private firms. Investors obtain a share ownership in the firm, gain power, and may have conflict of interests with the entrepreneur (Masulis & Nahata, 2011). Investors are diversified and are more inclined to take higher risks in pursuit for higher growth and high returns (Mishra, 2015; Puri & Zarutskie, 2012).

As such, from the perspective of the target firm, investor presence may be associated with a fast-growth and high-risk direction. Moreover, since investors are typically not interested in low growth firms but are rather pursuing high-growth opportunities (Mishra, 2015; Puri & Zarutskie, 2012), they may be not interested in investing in target firms with resources that have lower future potential.

As such, acquirers may view third party involvement with the target firm as a signal of higher quality or more VRIN resources. Therefore:

H1: Third party involvement with a private firm will be positively related to firm's attractiveness as an acquisition target.

3.3.3 Target Firm's Industry Innovativeness

Scholars who build on RBV examined how firm's resources may be related to the firm experiencing an M&A event. Additionally, literature suggests that in many cases, acquirers engage in M&A to acquire knowledge resources and innovation capabilities and to gain access to capabilities and knowledge that could not be developed internally (Coff, 1999, 2003; Puranam & Srikanth, 2007; Ranft & Lord, 2000, 2002; Riviezzo,

2013). In different contexts, scholars have studied the target firm's knowledge-based resources, innovation, and unique capabilities, environment characteristics, and their relation to M&A.

For example, Heeley et al. (2006) showed a positive relationship between target firm innovativeness captured as R&D investment and likelihood of being acquired as compared to paired firms because R&D may be viewed as a signal of value. Additionally, firms that were operating in complex and dynamic environments appeared to be more attractive (Graebner et al., 2010; Heeley et al., 2006; Rossi et al., 2013). Focusing on innovation and distinguishing between product and process innovation as well as industry (Cefis & Marsili, 2012) were found to be related to being acquired as compared to being liquidated. Furthermore, product innovation was found to be more strongly related to being acquired than process innovation (Cefis & Marsili, 2012).

In the context of acquisition of private firms, this paper examines certain characteristics of the environment in which the target firm operates. Specifically, literature suggests that firms operating in highly innovative industries are associated with higher innovation. Overall, the firm's ability and dedication to innovate were found to be positively related to survival as well as to exit via M&A vs. liquidation (Cefis & Marsili, 2011, 2012). Additionally, literature suggests that acquirers may be attracted to firms that signal an ability to innovate, demonstrate flexibility, and have knowledge resources (Cefis & Marsili, 2011, 2012; Graebner et al., 2010; Heeley et al., 2006)

The importance of innovation may lie in the ability to operate in the market of products by developing new products and services and in attractiveness for potential acquirers due to the uniqueness of the knowledge resources. Firms that are capable of

innovating and that can operate and survive dynamic and high-risk environments may appear attractive for potential acquirers since the above mentioned capabilities and intangible resources may be VRIN.

In the context of acquisition of private firms, due to the high levels of information asymmetry and uncertainty, acquirers may be unable to reliably evaluate the VRIN characteristics of the target firm's resources, its innovative capabilities, and its knowledge resources. As noted earlier, according to signaling theory, acquirers will have to rely on a reliable and meaningful signal. Target firms that operate in highly innovative industries, such as high-tech, medical, pharma, and biotech, may appear as more dedicated to innovation. Additionally, operating in such industries that may have high levels of dynamism and uncertainty (Heeley et al., 2006) requires firms to engage in innovation (Cefis & Marsili, 2012; Graebner et al., 2010). Therefore, this paper argues that such firms may be oriented towards innovation, which may be an important consideration when acquiring private firms (Graebner et al., 2010; Hitt et al., 2001; Hitt et al., 2011; Hitt et al., 2009; Ireland et al., 2003; March, 1991; Puranam, Singh, & Zollo, 2006; Puranam & Srikanth, 2007; Rossi et al., 2013).

Furthermore, operating in industries with such conditions may be more risky than operating in stable industries with lower levels of uncertainty. Therefore, due to the differences in risk, the anticipated total cost may be higher for lower quality firms than higher quality ones, and especially for firms with better developed innovation capabilities and knowledge resources. As such, acquirers may view the target firm's operation in an innovative industry as a signal of higher quality or more VRIN resources. Therefore:

H2: Private firm's industry innovativeness will be positively related to firm's attractiveness as an acquisition target.

3.3.4 Target Firm's Growth Emphasis

As noted earlier, acquirers will search for a signal that is visible and has a higher cost for a lower quality target firm. As such, while the acquirers are not aware of the target firm's quality and VRIN of its resources, the target firm is well aware of these and selects the signal it sends accordingly. One such signal can be the growth direction or type of growth emphasized by the target firm.

The topic of firm growth has received extensive attention in the literature, including examining explanations for growth, internal vs. external growth, extent of growth, and its measurement (Gilbert et al., 2006). Further, although growth as a measure was gauged in different ways, including combination of sales growth and employee growth, some literature viewed growth as a construct that may have different types, patterns, and measures and combinations (Gilbert et al., 2006; Weinzimmer, Nystrom, & Freeman, 1998). Specifically, (Delmar, Davidsson, & Gartner, 2003) showed that growth is a multi-dimensional phenomena, and "different forms of growth should be measured with different growth measures" (p. 190).

Additionally, the way firm growth is related to the resources the firm possesses as well as how the firm manages the resources according to strategy (Davidsson, Steffens, & Fitzsimmons, 2009) or goals (Delmar & Wiklund, 2008; Greve, 2008). Furthermore, different dimensions, or types of growth, were found to be related to different organizational outcomes, whether as the cause or the effect (Freel & Robson, 2004). Moreover, the relationship between the commonly used measures was examined, and

showed that the measures are indicators of different phenomena (Chandler, McKelvie, & Davidsson, 2009).

The two most common measures of growth are growth in the number of employees and growth in revenue; other indicators may be limited to specific contexts (Delmar et al., 2003; Delmar, McKelvie, & Wennberg, 2013; Delmar & Wiklund, 2008). Although employee growth and revenue growth were often viewed either in aggregation or selecting one over the other, the measures are related, but are indicators of different things (Chandler et al., 2009; Delmar et al., 2003).

Specifically, firms may be experiencing growth in number of employees when the firms are start-ups, high-tech, or creating new activities (Delmar et al., 2003). On the other hand, a firm may be experiencing growth in revenue, even if the firm has not created the resource base for sustained competitive advantage (Davidsson et al., 2009). Alternatively, growth in revenue alone may be due to increases in productivity or replacement of employees by machines or to degree of integration (Delmar et al., 2003).

Additionally, when distinguishing between the types of firms based on growth patterns, Delmar et al. (2003) identified several groups of firms, two of which are steady sales growers and employment growers. The former showed higher sales growth, possibly with none or negative growth in employment, while the latter showed higher employment growth, possibly with none or negative sales growth.

Transaction cost economics (Williamson, 1981) utilizing the rationale of asset specificity, especially human asset specificity, can explain the differences in the relationship between employee growth and revenue growth (Chandler et al., 2009). Under conditions of high human asset specificity where the firm must keep these internally,

growth in employment will occur with growth in revenue. On the other hand, under conditions of lower human asset specificity, the firms will contract externally, and thus revenue growth will not be accompanied by growth in employment (Chandler et al., 2009).

Human asset specificity includes product-specific knowledge, firm-specific knowledge, the importance of excellent personalized service, and the necessity of maintaining proprietary information. On one hand, these may become sources of competitive advantage if they are VRIN resources (Barney, 1991; Chandler et al., 2009). On the other hand, development of knowledge and employees requires a front-load expenditure, which may pay off in the future (Chandler et al., 2009) or not at all. Additional difficulties and risks such as screening and supervising, behavioral uncertainty, and other factors negatively moderate the employment growth – revenue growth relationship (Chandler et al., 2009) as these can be perceived as risks and/or hazards.

Following the rationale presented above, this paper suggests that a reliable signal may be the growth type that the target firm emphasizes. Specifically, the focus is on either growth in human capital or growth in revenues. First, emphasis on growth in human capital may be regarded as a more risky with uncertain future returns, while revenue growth is in the present and may be regarded as less risky. Second, firms that emphasize growth of human capital may be creating assets that are highly human specific, which may be related to developing a future competitive advantage. As such, higher human capital growth may be associated with higher future potential as well as higher potential for future innovative outcomes and knowledge. As such, firms that

emphasize human capital growth may be taking a riskier approach, but one that may result in potential for building VRIN resources. On the other hand, firms that emphasize revenue growth may be taking a less risky approach, but may be sacrificing the creation of future VRIN resources.

According to signaling theory, for a signal to be reliable it must have higher cost for lower quality sellers (Bergh et al., 2014). In the context of this paper, an acquirer would rely on a signal to evaluate the resources of the target firm and their VRIN characteristic. As such, the type of growth that the target firm exhibits – either leaning more towards growth in human capital or leaning more towards growth in revenues – satisfies the requirements for a reliable signal. Specifically, higher quality firms may be willing to take the riskier path of employment growth, while lower quality firms may be unwilling to follow the riskier path. As such, the type of growth that is emphasized itself becomes a reliable signal (Bergh et al., 2014).

As noted earlier, acquirers are searching for a reliable signal of the target firm's quality and VRIN characteristics of its resources. Because the type of growth the target firm emphasizes will have a different total expected cost for high and low quality firms, the type of growth can be viewed as a reliable signal. Therefore:

H3: Private firm's emphasis on growth of human capital will be positively related to firm's attractiveness as an acquisition target.

H4: Private firm's emphasis on growth in revenues will be negatively related to firm's attractiveness as an acquisition target.

H5: Private firm's emphasis on growth of human capital, while exhibiting low or negative growth in revenues, will be positively related to firm's attractiveness as an acquisition target.

3.3.5 Moderating Effects of Target Firm's Industry Innovativeness

As noted earlier, because more innovative industries are characterized by higher levels of innovation and knowledge-based resources, firms that operate in such industries may be more complex, have more specific resources, be more specialized, and have greater share of intangible resources, compared to less innovative industries (Graebner et al., 2010). Literature suggests that evaluating intangible resources as well as integrating them and transferring knowledge may be more challenging than more tangible resources (Riviezzo, 2013).

In turn, acquirers may face greater challenges when evaluating target firm's resources when these are more intangible. As noted earlier, signaling theory suggests that, in conditions of information asymmetry and uncertainty, buyers have to rely on signals to evaluate the seller (Akerlof, 1970; Bergh et al., 2014; Spence, 1973, 1974). In the context of acquisition of private firms where acquiring firms have limited knowledge of the target, acquirers will look for a reliable signal based on which they could estimate the firm quality and the VRIN characteristics of its resources. As suggested earlier, acquirers may view third party involvement with the target firm as a signal of its quality and VRIN resources.

As suggested above, target firms that operate in an innovative industry may appear more attractive. However, literature that examined innovation and its relation to the target firm's experiencing a M&A event showed that distinguishing between different

types of innovation as well as different industries is required (Cefis & Marsili, 2006, 2011, 2012). Specifically, that innovation would have different value in high-tech and low-tech industries – while in high-tech it is mandatory but common, in low-tech it is not. As such, innovative firms in low-tech industries may appear as more attractive acquisition targets than innovative firms in high-tech industries (Cefis & Marsili, 2011).

This paper extends this rationale and suggests that the type of growth the target firm emphasizes may be perceived differently when the target firm is in an innovative industry, which is often also a dynamic industry and has higher levels of uncertainty. As argued earlier, target firms in such industries will be perceived as more innovative, especially with regards to product innovation (Cefis & Marsili, 2011). In turn, this suggests that a greater emphasis on growth in human capital would be expected to be more common in more innovative industries than in less innovative industries where product innovation is not common (Cefis & Marsili, 2011). As such, the type of growth emphasized by target firms would be perceived as a signal differently in different industries.

First, and as noted earlier, emphasis on higher growth of human capital may be associated with higher risks. Additionally, according to signaling theory, a signal is reliable if it has a higher cost for a lower quality seller. Furthermore, the purpose of the signal is not only to communicate value, but also for the sellers to differentiate themselves (Akerlof, 1970; Bergh et al., 2014; Spence, 1973, 1974).

In innovative industries, where innovation is required for survival, emphasis on growth of human capital may be more common. In turn, this suggests that there may be more firms that emphasize this type of growth. On the other side of M&A, acquiring

firms search for a reliable signal to evaluate target firm's resources and to distinguish between higher and lower quality firms. As noted earlier, innovation is important for firms in both types of industries, but product innovation associated with higher growth in human capital is more important in innovative industries (Cefis & Marsili, 2011).

As such, the type of growth the private target firm emphasizes will be perceived as a reliable signal in both types of industries. However, in more innovative industries, emphasis on growth of human capital would be perceived as more meaningful, and in less innovative industries it would be perceived as less meaningful. Therefore:

H6: The relationship between private firm's emphasis on growth of human capital and firm's attractiveness as an acquisition target will be stronger when the target firm operates in a more innovative industry.

As noted earlier, innovation, especially product innovation, associated with a higher emphasis on human capital growth is more essential and common in more innovative industries (Cefis & Marsili, 2011; Graebner et al., 2010; Rossi et al., 2013). While innovation, especially product innovation, is mandatory to compete in such industries, firms in less innovative industries may compete based on other factors such as efficiencies and process innovation (Cefis & Marsili, 2011), which may be associated with lower growth in human capital.

As such, the type of growth the private target firm emphasizes will be perceived as a reliable signal in both types of industries. However, in more innovative industries, the emphasis on growth in revenue would be perceived as less meaningful, and in less innovative industries it would be perceived as more meaningful. Therefore:

H7: The relationship between private firm's emphasis on growth in revenue and firm's attractiveness as an acquisition target will be stronger when the target firm operates in a less innovative industry.

Finally, since evaluating private target firms with greater share of intangible resources may be even more challenging (Graebner et al., 2010; Porrini, 2004; Ragozzino & Reuer, 2010; Riviezzo, 2013; Rossi et al., 2013), the acquiring firm's reliance on third party involvement as a signal may be greater. As such, in the context of acquisition of private firms, acquiring firms will rely on the signal of third party involvement when evaluating target firms and their resources. However, since target firms in more innovative industries may typically have a greater share of knowledge based and intangible resources, the signal of third party involvement will be perceived as more meaningful by the acquiring firms. Therefore:

H8: The relationship between third party involvement with the private firm and firm's attractiveness as an acquisition target will be stronger when the target firm operates in a more innovative industry.

3.4 Conclusion

This chapter presented the theoretical framework and hypotheses development. The chapter started with an introduction section, highlighting the findings and limitations identified in the literature review. The chapter continued with the presentation of a joint perspective, integrating the target and acquiring sides in M&A. The section then presented the construct of private firm's attractiveness as acquisition target, which serves as the connection between the acquiring and target sides in M&A.

The chapter continued with the theoretical framework, combining RBV (Barney, 1991) and signaling theory (Akerlof, 1970; Spence, 1973, 1974). The RBV part of the theoretical framework suggests that acquiring firms will view target firms with VRIN resources as desirables. The signaling theory portion of the chapter suggests that under conditions of information asymmetry and uncertainty, buyers will have to rely on signals to evaluate their sellers. As such, in the context of acquisition of private firms, acquiring will rely on signals to evaluate the target firms and the VRIN characteristics of their resources. RBV explains *what* the acquirers may find desirable, and signaling theory explains *how* the acquirers can evaluate the targets.

Finally, the chapter presented the hypotheses development section. First, the section presented the emphasis in signaling theory regarding the criteria for a signal to be meaningful. The section then presented four signals that meet this criteria and hypothesized how each of these is related to private firm's attractiveness as an acquisition target. Finally, the section argued that two of these signals may be perceived as more meaningful and one as less meaningful when the target firm operates in a dynamic environment with a high level of uncertainty. The next chapter presents the methods this paper uses to test these hypotheses.

CHAPTER 4. METHODS

4.1 Data

Although the SDC Platinum database is often utilized in M&A studies, many data items are often undisclosed or missing for acquisitions involving private firms. Given the focus of this paper specifically on acquisitions of private target firms, the decision was made to primarily rely on data drawn from PrivCo, which is a database specializing in providing information on private firms, to test the hypotheses developed in the previous chapter.

The initial sample was requested from PrivCo with the following restrictions: acquisitions were completed between January 1, 2000 and February 28, 2018, acquisitions were conducted by U.S. public acquiring firms, and target firms were private and headquartered in the United States. The initial sample included 5,373 acquisitions. Additionally and independently, PrivCo provided various data on private firms, investors, and funding rounds. Data were integrated into a single database, using the target firm as the unifying item across the two datasets. Out of the 5,373 acquisitions, 2,209 were matched with the data on target firms. A total of 32 acquisitions were removed because share acquired was not indicated and 31 were removed because the share acquired was under 95%, which suggests a partial, not full acquisition. Finally, since the analyses require data on target firm's revenues and employees for two consecutive years prior to the acquisition, only acquisitions of target firms for which such data were available were retained. As such, the final working sample was comprised of 222 acquisitions.

4.2 Dependent Variable

The construct of interest in this study is the *private firm's attractiveness as an acquisition target*. The approach taken in this study to capture attractiveness differs from the more traditional utilization of acquisition premiums, which can be viewed as paying an amount or purchase price above the target firm's value (Hitt et al., 2009; Kim et al., 2011; Laamanen, 2007). Literature that examined acquisition premiums used samples of public target firms, where there is a clear value of the target firm's stock price that can be evaluated, and thus acquisition premiums can be determined by comparing the change in the target firm's stock price as reflected in the purchase price at deal announcement and some prior time point (Beckman & Haunschild, 2002; Malhotra, Zhu, & Reus, 2015; Reuer et al., 2012).

Private firms do not have a clear stock market value and, as such, determining the M&A premium in the same way is not possible. Furthermore, since the value of the firm is determined exogenously (Heeley et al., 2006), it is the price that the acquirer is willing to pay that eventually becomes the perceived value of the target firm in the M&A transaction.

However, capturing the perceived value of the private target firm is not the same as capturing the perceived attractiveness. In order to develop an indication of the perceived attractiveness, it would be necessary to identify an objective indicator of the target firm's value or performance prior to the acquisition and use it together with the transaction value. Specifically, this study examines the revenues generated by the target firm as the objective indicator. Thus, the study uses the ratio of the M&A transaction value divided by the target firm's revenues one year prior to acquisition as the proxy for

the private firm's attractiveness as an acquisition target. This ratio, often referred to as enterprise value/revenue, is a commonly used by practitioners to evaluate private firms, especially in M&As (BCG, 2017; EY, 2018; seekingalpha.com, 2018)

4.3 Independent Variables

The first independent variable in this study is a *signal of a third-party's perception of the target firm*. In the context of public firms, the market and analysts have varying ways (e.g., buying and selling stock, issuing recommendations and forecasts, or writing product reviews) to convey their perception of a firm, its resources, and its overall quality. Moreover, the actions of the market and analysts also may affect would-be acquirers and other stakeholders' perceptions of a firm. However, in the context of private firms, this is not the case. As such, acquiring firms that are looking for such a signal may have to rely on a proxy. This study relies on an overall investor involvement with the target firm as such proxy. Investor involvement was captured as the total number of investors that invested in the company (Ragozzino & Blevins, 2015; Reuer & Ragozzino, 2012). The data were obtained from PrivCo.

The second independent variable in this study is the *signal of the target firm's industry innovativeness*. Building on prior literature, this study suggests that, when acquiring firms are searching for a proxy for an innovative environment, they may distinguish between firms operating in different industries, thus using the type of industry or an industry-level characteristic as a proxy for the target firm's environment. Overall, high-tech industries are viewed as innovative (Cefis & Marsili, 2011; Graebner et al., 2010; Rossi et al., 2013). Furthermore, to capture the variance within the industries, this study uses the industry's R&D intensity by NAICS 6-digit level classification. The

NAICS codes for each target firm were obtained from PrivCo and R&D intensity for the industries were obtained from the National Science Foundation (NSF). NSF calculates R&D intensity as the total domestic R&D expense divided by net domestic sales.

The third and fourth independent variables in this study are the signals of the type of growth emphasized by the target firm: *signal of emphasis on growth in human capital* and *signal of emphasis on growth in revenue*. Because the type of growth emphasized by the target firms is not clear to the acquiring firms, acquirers have to search for proxies that can be an indication of the above. Acquiring firms that are searching for ways to assess the type of growth the target firm emphasizes can examine the annual growth in the number of employees as a proxy for a focus on human capital development and the annual growth in revenues as the proxy for emphasis on strategic proactiveness and/or product quality (Chandler et al., 2009; Ghosh, Gu, & Jain, 2005; Gilbert et al., 2006; Weinzimmer et al., 1998). As such, this study captures employee growth as the change in the target firm's number of employees from two years prior to one year prior to the acquisition and revenue growth as the change in the target firm's revenues two years prior to one year prior to the acquisition. The data on number of employees and revenues for both years were retrieved from PrivCo.

4.4 Control Variables

First, the effects of the size of the target firm were used to categorize acquisitions and may have a bearing on M&A decisions and outcomes (Drori, Wrzesniewski, & Ellis, 2011; Ellis & Lamont, 2004; Wulf, 2004; Zaheer, Schomaker, & Genc, 2003). From the acquirer's perspective, scholars have examined whether the target firm is relatively large enough to make any impact on the acquiring firm (Clodt et al., 2006; King et al., 2008)

and whether it is not too large for the acquiring firm to integrate or manage. The study uses the *target firm's number of employees* as a proxy to its size. The data were obtained from PrivCo.

Second, we controlled for the effects of two acquiring firm factors and one fit factor. As with the target firm, the study controls for the *acquiring firm's size*, captured as the firm's total assets. Additionally, firm similarity in terms of industry or market *relatedness* is an important factor related to the acquiring firm's post-M&A performance (Chatterjee & Wernerfelt, 1991; Haleblian et al., 2009; Hitt et al., 2009; King et al., 2004) as well as to the decision about what share of the firm to acquire (Chari & Chang, 2009; Faifman et al., 2016; Malhotra, Sivakumar, & Zhu, 2011). Additionally, the importance of the concept was highlighted in the research on corporate diversification and growth, where related diversification is often viewed as related to higher performance due to the ability to use resources in ways that generate synergies and complementarities (Miller, 2006; Ng, 2007; Palich, Cardinal, & Miller, 2000; Wan, Hoskisson, Short, & Yiu, 2011). Following the RBV rationale, acquisition of resources that are more similar to the resources of the acquired firm may have more favorable outcomes because acquirers may be able to better evaluate the resources, integrate them, and restructure them accordingly (Barkema & Schijven, 2008b), as necessary. *Relatedness* was calculated based on the primary and secondary SIC codes of the acquiring and target firms, following (Ellis et al., 2011; Haleblian & Finkelstein, 1999). Firms that matched on the primary four-digit SIC code were coded as 4, three-digit primary SIC code matches as 3, two-digit primary SIC code matches as 2, a match between secondary SIC codes at the four-digit level as 1, and no match at all as 0.

Furthermore, M&A can be viewed as a process (Jemison & Sitkin, 1986), and therefore the ability of acquiring firms and managers to manage the process may vary (Barkema & Schijven, 2008a; Haleblan & Finkelstein, 1999; Trichterborn et al., 2015). Research showed that the process of managing M&A can be learned, and the effects of M&A experience were found to be related to M&A performance and share of ownership acquired. Specifically, as firms learn how to make acquisitions, they may learn the processes of target selection, target evaluation, estimation of potential synergies, and integration management, which, in turn, favorably affect post-M&A performance and other outcomes (Hitt et al., 2009; King et al., 2004; Trichterborn et al., 2015). As such, this study controls for the *acquiring firm's acquisition experience*, which was captured as the number of acquisitions the acquiring firm conducted in the period of five years preceding the focal acquisition (Ellis et al., 2011; Haleblan et al., 2009).

Data for these three control variables were obtained from SDC Platinum and then matched with the main sample. Out of the 222 transactions, 137 acquisitions were included in SDC. Data on an additional 36 acquiring firms were present in SDC for the year of acquisition, but for a different target. The data for the remaining 49 acquiring firms were obtained from public sources. Total assets were obtained from annual reports (10-K). SIC codes were obtained from SICcode.com. Data for M&A experience were obtained from Crunchbase.com. Appendix 1 presents the constructs, variables, measures, and data sources.

4.5 Analysis and Results

Table 3 provides means, standard deviations, and correlations. There were significant bivariate correlations among several of the variables, with the highest being

Table 3: Descriptive Statistics and Correlation Matrix

Variable	Std.		1	2	3	4	5	6	7	8
	Mean	Dev.								
Private Firm's Attractiveness as an Acquisition Target	6.05	12.47								
Acquiring Firm's Size	2240	51144	0.19**							
Relatedness	1.88	1.60	0.17*	-0.07						
Acquiring Firm's M&A Experience	5.67	10.57	0.24**	0.44**	0.16					
Target Firm's Size	1301	3502	-0.12 [†]	-0.04	-0.03	-0.05				
Investor Involvement	2.76	5.83	0.38**	0.42**	0.13	0.34**				
Target Firm's Industry R&D Intensity	5.28	4.93	*	*	*	*	-0.13*			
Emphasis on Growth in Human Capital	0.27	0.57	0.20**	0.09	0.12 [†]	0.13*	0.24***	0.31**		
Emphasis on Growth in Revenue	0.41	0.67	0.35**	0.15*	0.06	0.20**	-0.13*	0.17*	-0.00	
			0.34**			0.30**		0.33**	0.15	0.45**
			*	0.17*	0.11	*	-0.15*	*	*	*

n=222; STATA; All results are for two-tailed test. [†]p<0.1; *p <0.05; **p<0.01; ***p<0.001.

Table 3: Descriptive Statistics and Correlation Matrix

$r = 0.38$. Multicollinearity analysis suggested that there were no problems, with 5.26 being the highest VIF value (Hair, Anderson, Tatham, & Black, 1995) (Table 4).

Table 4: Multicollinearity Analysis

Variable	VIF	1/VIF
Emphasis on Growth in Human Capital X Emphasis on Growth in Revenue	5.26	0.19
Emphasis on Growth in Revenue	5.18	0.19
Investor Involvement X Target Firm's Industry R&D Intensity	4.06	0.25
Emphasis on Growth in Human Capital	4.05	0.25
Emphasis on Growth in Revenue X Target Firm's Industry R&D Intensity	3.71	0.27
Investor Involvement	3.27	0.31
Emphasis on Growth in Human Capital X Emphasis on Growth in Revenue	2.3	0.43
Target Firm's Industry R&D Intensity	1.87	0.53
Acquiring Firm's Size	1.51	0.66
Acquiring Firm's M&A Experience	1.5	0.67
Target Firm's Size	1.36	0.73
Relatedness	1.13	0.88
Inverse Mills Ratio	1.05	0.95
Mean VIF	2.79	

Table 4: Multicollinearity Analysis

To examine the differences between the transactions that matched with SDC Platinum and those that did not match, the study conducted a *t*-test of means, comparing all measures used in the study (Tables 5 and 6). Overall, the transactions that did not appear in SDC were larger in value and made by larger acquiring firms. Also, target firms in the deals not appearing in SDC were growing faster, operated in more innovative industries, and were more closely related. It is not clear why these transactions were not found in the SDC sample. Furthermore, when comparing between transactions that matched and those that matched only by acquiring firm, the only differences were the acquiring firms' size and higher relatedness.

Table 5: T-test and Comparison of Sub-sample: SDC Match vs. Online

Variable	SDC Match (n=173)	Online Only (n=49)	Mean Difference	Pr(T < t) Ha: diff < 0	Pr(T > t) Ha: diff ≠ 0	Pr(T > t) Ha: diff > 0
Sale Price	492,000,000	764,000,000	(272,000,000)	0.05	0.10	0.95
Target Num. Employees	1,112	1,968	(856)	0.07	0.13	0.93
Target Revenue	304,000,000	612,000,000	(308,000,000)	0.01	0.02	0.99
Target Num. Employees Growth	0.30	0.16	0.14	0.93	0.13	0.07
Target Revenue Growth	0.47	0.17	0.30	1.00	0.01	0.00
Total Number of Investors	3.24	1.06	2.18	0.99	0.02	0.01
Target Industry R&D Intensity	5.85	3.24	2.62	1.00	0.00	0.00
Acquirer Total Assets (millions)	24,727	14,181	10,546	0.90	0.20	0.10
Acquirer M&A Experience	6.07	4.24	1.82	0.86	0.29	0.14
Relatedness	2.01	1.41	0.60	0.99	0.02	0.01

Table 5: T-test and Comparison of Sub-sample: SDC Match vs. Online

Table 6: T-test and Comparison of Sub-sample Full SDC Match vs. Buyer Only SDC Match

Variable	Full SDC Match (n=137)	Buyer Only SDC Match (n=36)	Mean Difference	Pr(T < t) Ha: diff < 0	Pr(T > t) Ha: diff ≠ 0	Pr(T > t) Ha: diff > 0
Sale Price	446,000,000	1,220,000,000	(220,000,000)	0.08	0.16	0.92
Target Num. Employees	1,081	1,230	(149)	0.41	0.81	0.59
Target Revenue	288,000,000	364,000,000	(76,300,000)	0.29	0.57	0.71
Target Num. Employees Growth	0.30	0.28	0.02	0.57	0.86	0.43
Target Revenue Growth	0.49	0.42	0.07	0.69	0.62	0.31
Total Number of Investors	3.50	2.25	1.25	0.86	0.28	0.14
Target Industry R&D Intensity	6.13	4.81	1.32	0.92	0.17	0.08
Acquirer Total Assets (millions)	20,374	41,294	(20,920)	0.02	0.04	0.98
Acquirer M&A Experience	6.05	6.14	(0.09)	0.48	0.96	0.52
Relatedness	2.17	1.42	0.75	0.99	0.01	0.01

Table 6: T-test and Comparison of Sub-sample Full SDC Match vs. Buyer Only SDC Match

The dependent variable (DV) in this study is private firm's attractiveness as acquisition target, captured by using the ratio of M&A transaction value over target firm's revenue as a proxy. As such, the study used Hierarchical regression to test the hypotheses. To satisfy the assumption of normality of distribution and to address extreme values, the study used natural log transformation for several of the variables: the DV, the acquiring firm's total assets, and the target firm's number of employees. Furthermore, the study utilized the option for Robust Standard Errors, which is an appropriate option when some variables may have outliers or non-normal distribution. Regression results are presented in Table 7.

Model 1 presents the control variables used in the study. Hypothesis 1 suggested a positive relationship between a signal of third party perception of target firm's resources, captured as investor involvement, and private firm's attractiveness as an acquisition target. As presented in Model 2, the results suggest a positive relationship ($\beta = 0.04, p < 0.10$), supporting Hypothesis 1. Model 3 presents the results for testing the relationship between target firm's industry innovativeness and private firm's attractiveness as an acquisition target ($\beta = 0.06, p < 0.001$), supporting Hypothesis 2.

Hypothesis 3 predicted a positive relationship between the signal of the target firm's emphasis on human capital growth and the private firm's attractiveness as acquisition target. As presented in Model 4, the hypothesis was supported ($\beta = 0.71, p < 0.001$). Hypothesis 4 suggested a negative relationship between the signal of the target firm's emphasis on growth in revenue and the private firm's attractiveness as an acquisition target. As presented in Model 5, the relationship is only marginally significant, and is positive ($\beta = 0.38, p < 0.10$). As such, Hypothesis 4 was not supported.

Table 7: Hierarchical Regression – Private Firm’s Attractiveness as Acquisition Target

Variable	Model 1	Model 2	Model 3	Model 4
Inverse Mills Ratio	0.03 (0.25)	0.03 (0.24)	-0.05 (0.24)	-0.19 (0.22)
Acquiring Firm’s Size	0.25*** (0.04)	0.23*** (0.04)	0.24*** (0.04)	0.22*** (0.04)
Relatedness	0.07 (0.05)	0.06 (0.05)	0.05 (0.05)	0.04 (0.05)
Acquiring Firm’s M&A Experience	0.02* (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Target Firm’s Size	-0.33*** (0.04)	-0.31*** (0.04)	-0.25*** (0.05)	-0.20*** (0.04)
Investor Involvement		0.04† (0.02)	0.02 (0.02)	0.02 (0.02)
Target Firm’s Industry R&D Intensity			0.06*** (0.01)	0.07*** (0.01)
Emphasis on Growth in Human Capital				0.71*** (0.15)
Emphasis on Growth in Revenue				
Emphasis on Growth in Human Capital X Emphasis on Growth in Revenue				
Emphasis on Growth in Human Capital X Target Firm’s Industry R&D Intensity				
Emphasis on Growth in Revenue X Target Firm’s Industry R&D Intensity				
Investor Involvement X Target Firm’s Industry R&D Intensity				
R ²	0.31	0.33	0.37	0.44
F	33.4***	27.23***	26.82***	27.62***
ΔR ²		0.02	0.04	0.07
ΔF		3.29†	19.32***	20.83***

Table 7: Hierarchical Regression – Private Firm’s Attractiveness as Acquisition Target – Continued

Variable	Model 5	Model 6	Model 7	Model 8
Inverse Mills Ratio	-0.20 (0.23)	-0.25 (0.25)	-0.31 (0.25)	-0.33 (0.25)
Acquiring Firm’s Size	0.21*** (0.04)	0.21*** (0.04)	0.20*** (0.04)	0.20*** (0.04)
Relatedness	0.03 (0.05)	0.05 (0.05)	0.04 (0.05)	0.04 (0.05)
Acquiring Firm’s M&A Experience	0.01 (0.01)	0.01 (0.01)	0.00 (0.01)	0.00 (0.01)
Target Firm’s Size	-0.18*** (0.04)	-0.14** (0.04)	-0.13** (0.04)	-0.13** (0.04)
Investor Involvement	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)	0.03 (0.02)
Target Firm’s Industry R&D Intensity	0.07*** (0.01)	0.07*** (0.02)	0.07*** (0.02)	0.08*** (0.02)
Emphasis on Growth in Human Capital	0.55*** (0.14)	1.18*** (0.24)	0.94** (0.28)	0.94** (0.28)
Emphasis on Growth in Revenue	0.38† (0.20)	0.78*** (0.19)	0.98*** (0.21)	0.92*** (0.21)
Emphasis on Growth in Human Capital X Emphasis on Growth in Revenue		-0.60*** (0.15)	-0.64*** (0.15)	-0.63*** (0.16)
Emphasis on Growth in Human Capital X Target Firm’s Industry R&D Intensity			0.08** (0.07)	0.07** (0.26)
Emphasis on Growth in Revenue X Target Firm’s Industry R&D Intensity			-0.03* (0.01)	-0.02 (0.01)
Investor Involvement X Target Firm’s Industry R&D Intensity				-0.00* (0.00)
R ²	0.46	0.50	0.52	0.52
F	24.40***	34.73***	34.42***	31.28
ΔR ²	0.02	0.04	0.02	0.00
ΔF	3.48†	15.27***	6.08**	3.94*

n=222; Standard errors are robust standard errors. STATA; All results are for two-tailed test.

†p<0.1; *p<0.05; **p<0.01; ***p<0.001.

Table 7: Hierarchical Regression – Private Firm’s Attractiveness as Acquisition Target

Hypothesis 5 suggested that private firm's emphasis on growth of human capital, while exhibiting low or negative growth in revenues, will be positively related to firm's attractiveness as an acquisition target. To test the hypothesis, an interaction term was created and added to the regression equation (Model 6). The interaction term ($\beta = -0.60, p < 0.001$) was significantly related to private firm's attractiveness as an acquisition target. To better understand the nature of the moderating effect, the study used a two-way interaction plot for unstandardized variables, obtained from the Jeremy Dawson website (Dawson). Figure 2 presents the interaction plot, which shows that the effect of human capital growth is stronger when the revenue growth is low and weaker when revenue growth is high. As such, Hypothesis 5 is supported.

Figure 2: Two-way Interaction Plot – Emphasis on Growth in Human Capital and Emphasis on Growth in Revenue

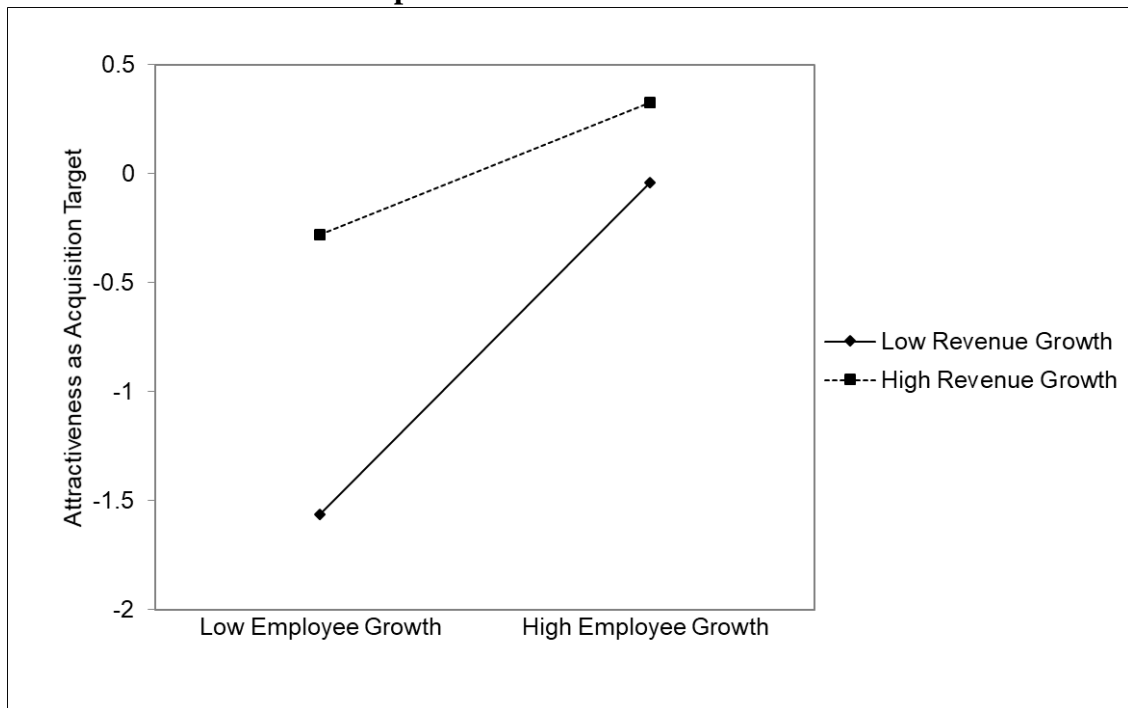


Figure 2: Two-way Interaction Plot – Emphasis on Growth in Human Capital and Emphasis on Growth in Revenue

Hypotheses 6 and 7 were added as a single block. Hypothesis 6 suggested that the relationship between private firm's emphasis on growth of human capital and firm's attractiveness as an acquisition target will be stronger when the target firm operates in more innovative industries. Hypothesis 7 suggested that the relationship between private firm's emphasis on growth in revenue and firm's attractiveness as an acquisition target will be weaker when the target firm operates in a more innovative industry. To test the hypotheses, two interaction terms were created and added to the regression equation as a single block (Model 7).

The first interaction term in this block ($\beta = 0.08, p < 0.01$) was significantly related to private firm's attractiveness as an acquisition target. Figure 3 presents the interaction plot, which shows that the effect of human capital growth is stronger when the target firm is in a more innovative industry and weaker when the target is in a less innovative industry. Thus, Hypothesis 6 is supported. The second interaction term in this block ($\beta = -0.03, p < 0.05$) was also significantly related to private firm's attractiveness as an acquisition target. Figure 4 presents the interaction plot, which shows that the effect of revenue growth is stronger when the target firm is in a less innovative industry and weaker when the target is in a less innovative industry. As such, Hypothesis 7 is supported.

Finally, Hypothesis 8 suggested that the relationship between third party involvement with the private firm and firm's attractiveness as an acquisition target will be stronger when the target firm operates in a more innovative industry. An interaction term of number of investors and target firm's industry R&D intensity was created and added to the regression equation in Model 8. The interaction term ($\beta = -0.003, p < 0.05$)

Figure 3: Two-way Interaction Plot – Emphasis on Growth in Human Capital and Target Firm’s Industry R&D Intensity

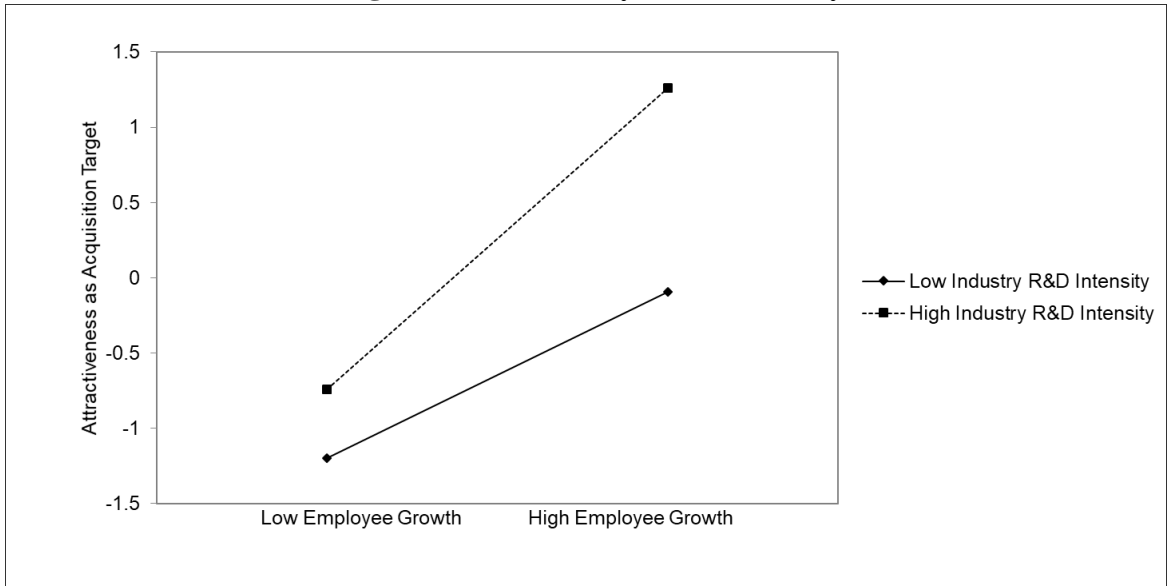


Figure 3: Two-way Interaction Plot – Emphasis on Growth in Human Capital and Target Firm’s Industry R&D Intensity

Figure 4: Two-way Interaction Plot – Emphasis on Growth in Revenue and Target Firm’s Industry R&D Intensity

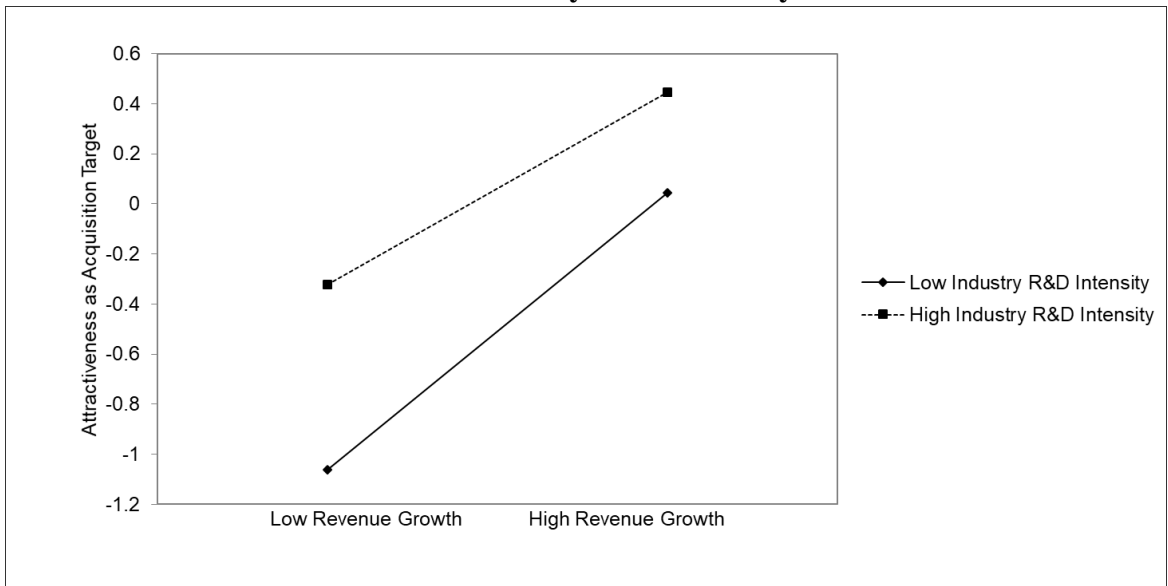


Figure 4: Two-way Interaction Plot – Emphasis on Growth in Revenue and Target Firm’s Industry R&D Intensity

was significantly related to private firm's attractiveness as an acquisition target. Figure 5 clearly shows that the relationship between investor involvement and target firm's attractiveness is weaker when the target firm is in a more innovative industry and stronger when the target firm is in a less innovative industry. As such, while the moderating effect is present, it is in the opposite direction as hypothesized; thus, Hypothesis 8 is not supported.

Figure 5: Two-way Interaction Plot – Investor Involvement and Target Firm's Industry R&D Intensity

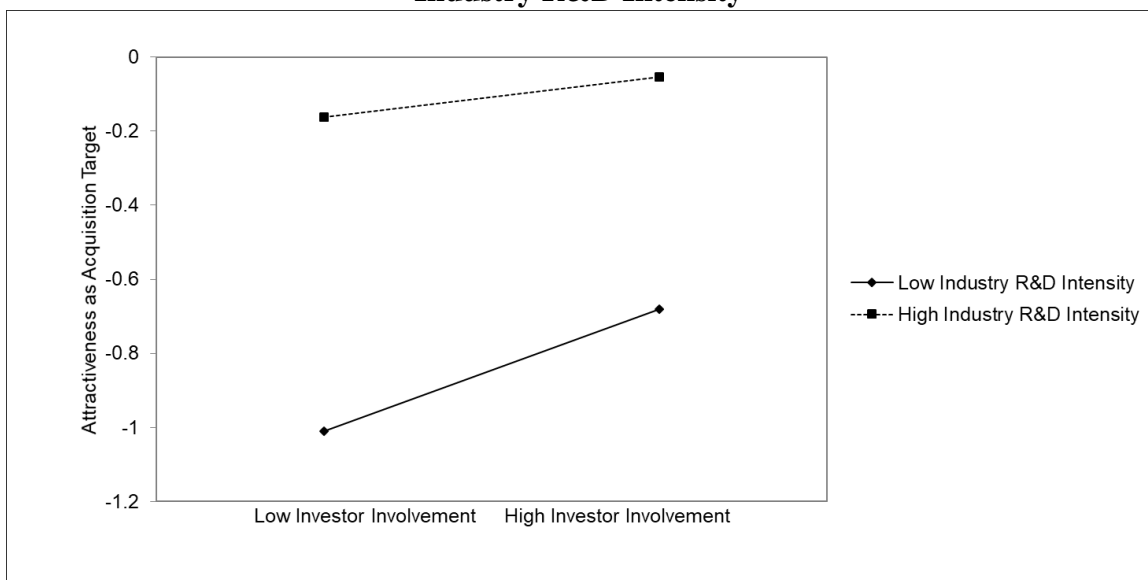


Figure 5: Two-way Interaction Plot – Investor Involvement and Target Firm's Industry R&D Intensity

4.6 Endogeneity

As noted earlier, this paper examines private firm's attractiveness as an acquisition target. The study examines private firms that were acquired, with the ratio of transaction value over target firm's revenues used as the proxy for attractiveness. However, the analyses only examine firms that experienced a M&A event.

It is possible that the factors related to private firm's attractiveness as an acquisition target may also be related to the private firm experiencing a M&A event. In turn, this presents possible selection bias, which is an endogeneity concern. To address

this issue, this study follows the procedure of identifying M&A deals that were not completed but met other selection criteria used to generate the sample for the study. Specifically, data were pulled from SDC Platinum for transactions that were not completed but listed U.S. public acquirers and private U.S. targets for the same time period.

The study addressed this concern in two ways. First the study compared M&As that were completed and not completed and, using Probit regression, calculated the inverse mills ratio (IMR) and used it as a control variable in the main regression model (Ellis et al., 2018; Smits, 2003). The working sample consisted of a total of 525 observations, of which 222 were selected for acquisition and 303 were not selected for acquisition.

As an additional analysis, the study used the Heckman two-step selection model available in Stata, where the first step is the selection itself (Table 8), and the second step is the main regression model (Table 9).

In controlling for possible selection bias, it is necessary to identify instrument variables which may predict whether or not a private target firm is selected for acquisition. First, literature suggests that various conditions in the environment may be related to increased rates of M&A as well as private firms experiencing a M&A event (Francis, Hasan, & Siregar, 2009; McNamara et al., 2008; Ovtchinnikov, 2013). Second, literature suggests there are several firm-level factors that may be related to the private firm experiencing an M&A event.

Table 8: Heckman Two-Step Model – First Step - Full Model

Variable	
Year 2006	0.23 (0.61)
Year 2007	0.18 (0.59)
Year 2008	0.21 (0.59)
Year 2009	0.42 (0.62)
Year 2010	1.78*** (0.46)
Year 2011	2.30*** (0.46)
Year 2012	3.00*** (0.46)
Year 2013	2.21*** (0.49)
Year 2014	3.11*** (0.46)
Year 2015	3.2*** (0.47)
Year 2016	2.62*** (0.47)
Year 2017	2.67*** (0.49)
Target Age	0.00 (0.00)
Same State	-0.75*** (0.19)
Target in California	0.41* (0.19)
Wald Chi ²	(12); 243.66***

n=525, censored=303, uncensored=222; Standard errors. STATA; All results are for two-tailed test.

†p<0.1; *p<0.05; **p<0.01; ***p<0.001.

Table 8: Heckman Two-Step Model – First Step - Full Model

Table 9: Heckman Two-Step Model – Second Step - Full Model

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
Acquiring Firm's Size	0.25*** (0.04)	0.22*** (0.04)	0.23*** (0.04)	0.21*** (0.04)	0.21*** (0.04)
Relatedness	0.06* (0.05)	0.04 (0.05)	0.03 (0.05)	0.04 (0.05)	0.03 (0.05)
Acquiring Firm's M&A Experience	0.02 † (0.01)	0.01 (0.01)	0.01 (0.01)	0.00 (0.01)	0.00 (0.01)
Target Firm's Size	-0.33*** (0.05)	-0.30*** (0.05)	-0.25*** (0.05)	-0.20*** (0.05)	-0.17*** (0.05)
Investor Involvement		0.05** (0.01)	0.03* (0.01)	0.02 † (0.01)	0.02 (0.01)
Target Firm's Industry R&D Intensity			0.06** (0.02)	0.07*** (0.02)	0.07*** (0.02)
Emphasis on Growth in Human Capital				0.70*** (0.13)	0.54*** (0.14)
Emphasis on Growth in Revenue					0.37** (0.12)
Emphasis on Growth in Human Capital X Emphasis on Growth in Revenue					
Emphasis on Growth in Human Capital X Target Firm's Industry R&D Intensity					
Emphasis on Growth in Revenue X Target Firm's Industry R&D Intensity					
Investor Involvement X Target Firm's Industry R&D Intensity					
Wald Chi ²	(4); 104.60***	(5); 119.30***	(6); 135.98***	(7); 178.27***	(8); 193.80***

n=525, censored=303, uncensored=222; Standard errors. STATA; All results are for two-tailed test.

†p<0.1; *p<0.05; **p<0.01; ***p<0.001.

Table 9: Heckman Two-Step Model – Second Step - Full Model - Continued

Variable	Model 6	Model 7	Model 8	Model 9	Model 10
Acquiring Firm's Size	0.20*** (0.04)	0.21*** (0.04)	0.20*** (0.04)	0.20*** (0.04)	0.19*** (0.04)
Relatedness	0.03 (0.04)	0.05 (0.04)	0.03 (0.04)	0.04 (0.04)	0.04 (0.04)
Acquiring Firm's M&A Experience	-0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	0.00 (0.001)	0.00 (0.01)
Target Firm's Size	-0.16** (0.05)	-0.14** (0.05)	-0.14** (0.05)	-0.13** (0.05)	-0.12* (0.05)
Investor Involvement	0.05* (0.02)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.04 † (0.02)
Target Firm's Industry R&D Intensity	0.09*** (0.02)	0.07*** (0.02)	0.06*** (0.02)	0.07*** (0.02)	0.08*** (0.02)
Emphasis on Growth in Human Capital	0.52*** (0.14)	1.17*** (0.21)	0.93*** (0.23)	0.94*** (0.23)	0.94*** (0.23)
Emphasis on Growth in Revenue	0.39** (0.12)	0.76*** (0.15)	0.71*** (0.16)	0.97*** (0.22)	0.89*** (0.22)
Emphasis on Growth in Human Capital X Emphasis on Growth in Revenue	-0.004 † (0.002)				-0.003 (0.002)
Emphasis on Growth in Human Capital X Target Firm's Industry R&D Intensity		-0.60*** (0.15)	-0.57*** (0.15)	-0.64*** (0.07)	-0.63*** (0.15)
Emphasis on Growth in Revenue X Target Firm's Industry R&D Intensity			0.07* (0.03)	0.07* (0.03)	0.07* (0.03)
Investor Involvement X Target Firm's Industry R&D Intensity				-0.03 † (0.02)	-0.01 (0.02)
Wald Chi ²	(9); 200.26***	(9); 223.92***	(10); 232.84***	(11); 238.71***	(12); 243.66***

n=525, censored=303, uncensored=222; Standard errors. STATA; All results are for two-tailed test.
 †p<0.1; *p<0.05; **p<0.01; ***p<0.001.

Table 9: Heckman Two-Step Model – Second Step - Full Model

The two factors most commonly studied are the size and age of the target firm (Amaral et al., 2007; Balcaen et al., 2012; Bhattacharjee et al., 2009; Billett, 1996; Bruno & Cooper, 1982; Cooper & Bruno, 1977; Esteve-Pérez et al., 2010; Fortune & Mitchell, 2012; Greenaway et al., 2009; Harhoff et al., 1998; Köke, 2002; Peel & Wilson, 1989; van Teeffelen & Uhlaner, 2013; Wennberg et al., 2010). Additionally, some literature suggests that target firm's financial performance is related to the M&A event (Åstebro & Winter, 2012; Bhattacharjee et al., 2009; Greenaway et al., 2009; Köke, 2002; Schary, 1991; van Teeffelen & Uhlaner, 2013). Similarly, literature suggests that the characteristics of private firm's human capital may be related to the firm experiencing an M&A event (Bruno & Cooper, 1982; Coleman et al., 2013; Cooper & Bruno, 1977; Fortune & Mitchell, 2012; Greenaway et al., 2009; Wennberg et al., 2010), although others suggest otherwise (Lee & Lee, 2015; van Teeffelen & Uhlaner, 2013). Moreover, the innovation capabilities of the target firm or the extent of firm's knowledge were related to the target firm's continuation in the industry and survival, the experiencing of a M&A event, and both firm survival and the experiencing of a M&A event in case of leaving the industry (Cefis & Marsili, 2006, 2011, 2012; Fontana & Nesta, 2009). Finally, studies found that firms may be more likely to experience an M&A event if they are located in the state of California (Ragozzino & Blevins, 2015) and that the distance between the acquiring and target firms may have a role in the acquiring firm's decision to engage in a M&A (Ragozzino & Blevins, 2015).

As such, to address the selection bias which is an endogeneity concern, the first step of the model would ideally include as instrument variables acquisition year, target firm's age, its size, its profitability, its human capital characteristics, its innovation

capabilities, its distance from the acquiring firm, and an indication as to whether it was incorporated in California. However, due to data availability, this study examines acquisition year, target firm's age, whether the target firm is situated in California, and whether the acquiring and target firms are from the same state. To capture the acquisition year, the study created a dummy variable for each year and, alternatively, a dummy variable for the years of the financial crisis. Similarly, the study created a dummy variable to capture whether the target firm is incorporated in the state of California (Ragozzino & Blevins, 2015) and a dummy variable to capture whether the acquiring and target firms are incorporated in the same state (Ragozzino & Blevins, 2015). Finally, target firm's age was measured in years, from founding to the M&A event (Cefis & Marsili, 2012).

Table 8 presents the first-step results suggest that targets were more likely to be acquired after 2010 if they were older, were from a different state, and were located in the state of California. The second-step analyses results are presented in Table 9 and are similar on an overall basis to the Hierarchical regression results presented in Table 7. One possible explanation to the differences is that the Heckman two-step analysis uses standard errors and not robust standard errors, and, as such, the non-normal distribution of data for some variables, as well as the presence of outliers have greater effects.

4.7 Robustness

This study conducted several tests for robustness. First, different measures were tested to capture M&A experience, third party involvement, and industry innovativeness. Overall, the results were similar, although in some cases, some relationships were no longer significant. The explanation to this outcome is that in the main hypotheses tests,

the measures used were those that were best suited for the study. On the other hand, in robustness tests, some of the measures changed from continuous to dichotomous, as such removing much of the variance, which in turn was not beneficial.

Additionally, to test whether any of the controls were driving the regression results, the study conducted a stepwise regression. The regression removed three control variables: relatedness, acquisition experience, and IMR as well as the interaction term of revenue growth and target firm's industry R&D intensity. The removed variables and the results are presented in Appendix 2. As with the Heckman two-step analysis, one possible explanation to the differences in results is that stepwise analysis uses Standard Errors and not robust standard errors, and, as such, the non-normal distribution of data for some variables, as well as the presence of outliers have greater effects.

CHAPTER 5. DISCUSSION

This dissertation paper focuses on mergers and acquisitions (M&A) of private firms. The main purpose of this dissertation paper is to answer the research question:

What makes private firms attractive as targets for acquisition?

In answering this research question, this paper makes two primary contributions. First, this paper discusses the theoretical explanations of the phenomenon of creation and growth of private firms, where the goal from the inception is the sale of the firm via M&A where financial returns are generated. The paper relies on the RBV and signaling theory jointly, and builds a theoretical model that explain the phenomenon, as well as establishes the theoretical foundation to using the outcome of M&A as the performance indicator for such firms. Second, because attractiveness of the target firm is used as the indicator of performance, but it is the acquiring firm that perceives the target as attractive, the paper establishes a connection between the acquiring and target sides in M&As. Thus, the private firm's attractiveness as an acquisition target is the bridge to make the connection between two sides.

The next section of this chapter presents each of the contributions this paper makes. It also presents implications for theory as well as implications for practice. The following section discusses the limitations of this dissertation paper as well as the opportunities and directions for future research. Finally, the last section of the chapter presents the conclusions of the dissertation.

5.1 Contributions

As presented in the introduction chapter, the common view in the entrepreneurship literature is that the generation of returns and creation of wealth are part of the entrepreneurship process (Hoskisson et al., 2011; Ireland et al., 2003; Ireland & Webb, 2007), and therefore this step is viewed as part of business models (Gilbert et al., 2006; Harms, Kraus, & Reschke, 2007; Zott & Amit, 2007, 2008; Zott et al., 2011). As literature shows, many privately owned firms are founded and developed with the intention of being sold (DeTienne, 2010; DeTienne & Cardon, 2012). In some cases, the returns to the firm owners are not generated through the process of selling goods and services, but through selling of the firm itself in a M&A transaction (DeTienne, 2010; DeTienne et al., 2014; Graebner et al., 2010; Wennberg & DeTienne, 2014). In turn, this suggests that there is a need for a theoretical framework which includes the M&A transaction as part of the business model because, for some firms, it is both the goal of the owners of the firm and the process through which the firm generates returns.

Limited research in the field of entrepreneurship, particularly focusing on firm exit from an industry (Balcaen et al., 2012; Cefis & Marsili, 2012; Graebner & Eisenhardt, 2004; Graebner et al., 2010), acknowledges the existence of the phenomenon and a business model that may correspond to it. However, the characteristics of such a model, theoretical explanation of the phenomenon, and indicators of performance were not found in the literature.

In parallel, the field of strategy examines why some firms perform better than others, and various theoretical frameworks are implemented to answer the question (Brueller et al., 2014; Graebner et al., 2010; Haleblian et al., 2009; Hitt et al., 2009; King et al., 2004; Rossi et al., 2013). The examination of variance in performance of different

firms requires an identifiable indicator of performance, and various common indicators can be found in the literature (Bettis et al., 2014; Cording et al., 2010). While applicable for many firms, these indicators of performance may not be applicable or accurate for private firms that generate returns via the sale of the firm itself.

As such, this paper develops a theoretical model that, in addition to explaining the phenomenon, provides the theoretical foundation to use *private firm's attractiveness as an acquisition target* as a performance indicator for such firms. As explained earlier in the paper, more attractive firms may be more likely to be acquired (Heeley et al., 2006), and acquiring firms may pay more for target firms they find more attractive. Private firm's attractiveness as an acquisition target is in the eyes of the acquiring firm, which examines the target firm according to criteria that may be different than the target firm's performance as a stand-alone firm in the goods and services market. It is for this reason that common indicators of performance may be inaccurate for firms that follow the business model described above. Specifically, a target firm may be losing money, but may appear attractive for other reasons, such as a large user base as in the case of WhatsApp (Carr, 2012; Lynley, 2011; Polovets, 2014; Thukkaram, 2014).

After developing the theoretical model that explains private firm's sale via a M&A transaction, as well as establishing the theoretical foundation for capturing performance for private firms that are acquired in a M&A, the paper examines the factors that explain the variance in performance of such firms. As such, the paper turns to answer the research question: *What make private firms attractive as targets for acquisition?* Because the attractiveness is in the eye of the acquiring firm, the paper builds on the RBV (Barney, 1991) to understand *what* acquiring firms perceive as attractive. However,

the context of acquisition of private firms is characterized by high levels of uncertainty and information asymmetry (Ragozzino & Blevins, 2015; Ragozzino & Reuer, 2010), where the acquiring firms may have difficulties evaluating the target firms. Under such conditions, signaling theory (Akerlof, 1970; Spence, 1973, 1974) explains the actions of sellers and buyers (Bergh et al., 2014; Connelly et al., 2011). Therefore the paper builds on the signaling theory to examine *factors that influence* the acquiring firm's perceptions of attractiveness of the target firm.

Thus, the paper examines the target firm from the point of view of the acquiring firm and through the theoretical lens of the signaling theory, and develops the model of private firm's attractiveness as an acquisition target (Figure 1). The model suggests that when evaluating private target firms, acquiring firms will look for reliable signals that they will use to evaluate the target firms and their resources.

First, the paper suggests that acquiring firms will view third party involvement with the target firm as a signal of overall quality (Connelly et al., 2011; Puri & Zarutskie, 2012; Ragozzino & Blevins, 2015) and an indication regarding the VRIN characteristics of the target firm's resources. Second, the paper suggests that the target firm's environment, specifically the innovativeness of the industry in which the target firm operates, will be perceived by acquiring firms as a reliable signal. The rationale for the argument is that such industries require higher levels of innovation to survive and are characterized by higher levels of uncertainty and dynamism, and thus higher risk for the firm. As such, a private firm's decision to operate in such environments may be viewed as a reliable signal of VRIN resources by the acquiring firm, and thus make the private firm more attractive. Interestingly, while the hypothesis regarding the signal of third party

involvement, captured as investor involvement, received support when tested in isolation, the results did not offer support after the addition of the industry innovativeness measure. On the other hand, industry innovativeness received strong support throughout the models. The measures used to capture the signals were found to be correlated, suggesting that investors are more likely to be involved with target firms operating in more innovative industries.

Additionally, investors are either more involved with firms that are faster growing or persuade the firms in which they invest to grow faster (Bertoni, Colombo, & Grilli, 2013; Bottazzi, Da Rin, & Hellmann, 2008; Mishra, 2015; Puri & Zarutskie, 2012; Ragozzino & Blevins, 2015; Ragozzino & Reuer, 2007). Investors may also invest in faster growing firms, then make them grow even faster.

It is possible that the lack of significance resulted, in part, due to a relatively low sample size. Specifically, there were several differences in the level of significance when using Hierarchical regression and Heckman two-step models. While the relationship between third party involvement and private firm's attractiveness as an acquisition target became non-significant after adding industry innovativeness in Hierarchical regression models, in Heckman two-step models the relationship remained significant up to the stage where the measure for emphasis on human capital growth was added.

However, from the theoretical perspective, because third party involvement is an indication of partnership, selection by the investor, and intended strategy, the involvement should be viewed as a reliable signal, even when the target firm is in more innovative industries, although there is a moderating effect, as suggested in Hypothesis 8. As is presented later, the tests for the moderating effect were significant, and the effect is

clearly seen in the two-way interaction plot (Figure 5). The plot also suggests that there is a positive relationship at any industry innovativeness level, suggesting that the signal regarding third party involvement is positively related to private firm's attractiveness as an acquisition target.

Shifting the focus to the target firm itself, the paper tested whether acquiring firms view the type of growth the target firm emphasizes as a reliable signal. Specifically, the emphasis on the growth in human capital is perceived as a signal of higher quality, while the emphasis on growth in revenue is not perceived as such and rather as a signal of lower quality. The effects related to human capital growth received strong support through the models tested, suggesting that acquiring firms view growth in human capital as a signal of the private target firm's overall quality and indication of VRIN resources. On the other hand, the results did not support the hypothesis that acquiring firms view revenue growth unfavorably.

Furthermore, the paper shows that the emphasis on growth in human capital would be perceived as a stronger signal of the target firm's quality and VRIN characteristics of its resources when that target firm also presents low growth in revenue. This suggests that the firm is allocating its resources towards growth in human capital, which may be more risky. The strong support that was received suggests that acquiring firms perceive such behavior as a signal of higher quality, and thus the target firm as more attractive as an acquisition target.

Additionally, the paper advances our knowledge of the focal phenomenon by showing that the above mentioned signals will be perceived differently, depending on the target firm's industry level of innovativeness. Specifically, the paper shows that when the

target firm is in a more innovative industry, the signal of emphasis on growth in human capital will be perceived as a stronger indicator of the target firm's overall quality and VRIN characteristic of its resources. On the other hand, the signal of emphasis on growth in revenue will be perceived as a stronger indicator in a less innovative industry. Both hypotheses received strong support when examined individually and jointly. Thus, the results show that emphasis on growth in human capital is a stronger signal of quality in more innovative industries, and emphasis on growth in revenue is a stronger signal of quality in less innovative industries.

Finally, the paper tested whether that the signal of third party involvement would be perceived as a stronger indicator when the target firm is operating in a more innovative industry. Following the RBV rationale, the argument was based on the assumption that firms in more innovative industries will have a greater share of intangible resources, making them more difficult to evaluate (Benou & Madura, 2005; Faifman et al., 2016; Graebner et al., 2010; Rossi et al., 2013). As such, a third party's presence will be perceived as more valuable. Contrary to predictions, results indicate the opposite – that a third party's involvement is perceived as a stronger signal when the target firm is in a less innovative industry. This finding can be explained by signaling theory. Specifically, because investors are more involved with firms in more innovative industries, an involvement with a company in a less innovative industry is less common. As such, the involvement of investors with a firm in a less innovative industry is perceived as something more unique, and thus a stronger signal. When examining all the interaction terms in the full model, the addition of the interaction term of third party involvement and industry innovativeness changes the results regarding emphasis on

revenue growth and industry innovativeness to non-significant. As discussed earlier, one possible explanation to this outcome is that the firms that exhibit higher growth in revenue in less innovative industries are selected by investors, or that firms in less innovative industries that received support from investors achieve higher revenue growth rates, due to the investors' emphasis on higher growth.

5.2 Implications

There are several implications for theory. First, this paper develops a theoretical model that explains the common phenomenon of returns and wealth generation of private firms via firm sale in a M&A transaction. As such, the paper provides the theoretical framework to study such firms as well as to resolve the non-coherence (Locke & Golden-Biddle, 1997) in the sub stream of entrepreneurship literature that examines firm exit (Wennberg & DeTienne, 2014). Second, the theoretical framework discussed above provides the theoretical basis to view M&A outcome and a performance indicator for private target firms that are acquired in M&As.

Third, this study built on the RBV (Barney, 1991) and signaling theory (Akerlof, 1970; Spence, 1973, 1974), where RBV was used to understand *what* acquiring firms may perceive as attractive, and signaling theory was used to explain *how* the acquiring firms can evaluate the resources of the target firm. Because M&A of private firms occurs in an environment characterized by high levels of uncertainty and information asymmetry, this context allowed the combined use of these two theories. As such, by applying signaling theory to the study of private firms, this paper took the “substantial opportunity to adopt signaling theory to enhance our understanding of the entrepreneurial cycle” (Ragozzino & Blevins, 2015); p.1012). Furthermore, this study successfully

utilizes signaling theory in conjunction with RBV as a “complementary lens” (Ragozzino & Blevins, 2015); p. 1012), thus making a contribution to the theories as well as to the understanding of the phenomenon.

There are also several implications for practice. First, the paper presents a model that can be used by private firms to improve their performance in terms of returns they receive in the M&A transaction, assuming they consider the sale of the firm as a desired outcome. According to the model and the supporting findings, private firms that are interested in increasing their returns in the M&A transaction can increase their perceived attractiveness as an acquisition target. For example, a firm can signal greater emphasis on growth in human capital by reallocating resources towards such growth, especially if the firm is operating in a more innovative industry.

Second, the findings presented in this paper suggest that the size of the acquiring firm, used as a control, has an effect on private firm’s attractiveness as an acquisition target in the way it was measured. As such, while external to the target firm, the size of the acquiring firm may have an effect on private firm’s performance when it is sold via M&A. In turn, this may be used by private firm’s owners to identify potential acquirers.

Third, entrepreneurs starting new ventures whose end goal is the sale of the firm via M&A and who are designing the business model for the venture can use the model presented in this paper as well as firm’s attractiveness as an acquisition target as the performance goal. For these ventures, the goal of appearing more attractive as an acquisition target may become more important than achieving financial returns by the sale of goods and services. In turn, this may alter the business model the entrepreneurs

test and develop, the industries in which the venture will operate, and affiliation with third parties.

Finally, investors and third parties such as venture capitalists and angel investors often generate their returns by investing in private firms that are positioning themselves as the targets in M&A transactions within a few years (Bertoni et al., 2013; Mishra, 2015). As such, firm's attractiveness as an acquisition target, and thus the returns received in a M&A, may correspond with the return on investment for such investors. Therefore, such investors can use the findings presented in this paper both to evaluate potential investment targets and as indicators of how to grow the firm to make it more attractive as an acquisition target.

5.3 Limitations and Future Research

There are several directions for future research. First, this study examines the performance outcome for the private target firm in the form of its attractiveness as an acquisition target. It would be interesting to continue the research and examine whether private firm's attractiveness as an acquisition target is related to post-M&A performance of the acquiring firm. For example, it is possible that acquiring firms pay more for the private target firm than the total value they can extract post-M&A. In turn, this would have similar implications for the acquiring firms' performance as overpaying, or paying too high a premium, when acquiring public firms. Furthermore, this paper controls for relatedness between the acquiring and target firms' industries as well as the M&A experience of the acquiring firm. While the results do not indicate a significant relationship between these factors and private firm's attractiveness as an acquisition target (except in Model 1), these may have an effect on post-M&A performance of the

acquiring firm. Specifically, acquiring firms with better developed M&A capabilities may be able to more accurately evaluate the target firms as well as to better manage the post-M&A integration process (Graebner, 2004; Kaul & Wu, 2015; Larsson & Finkelstein, 1999; Trichterborn et al., 2015; Weber & Tarba, 2011; Zhu et al., 2015). Similar effects may be due to similarity between the acquiring and target firms' resources, as in closer related acquisitions (King et al., 2003; King et al., 2008; Makri et al., 2010; Seth, 1990; Tanriverdi & Venkatraman, 2005; Uhlenbruck et al., 2006).

Second, acquiring firms engage in M&A for various reasons, pursuing various goals (Brueller et al., 2014; Miller, 2006; Puranam & Srikanth, 2007). Accordingly, acquiring firms may perceive some characteristics of the target firm as more attractive in some cases and less attractive in other. Overall, when acquiring firms for different reasons, there may be different levels of integrations (Puranam et al., 2009; Puranam et al., 2006), different expected complementarities and combinations of resources (Cloudt et al., 2006; Uhlenbruck et al., 2006), and different restructuring procedures (Barkema & Schijven, 2008b); thus the different types of acquisition should be viewed differently. Distinguishing between the different reasons for acquisitions can explain further variance in both the target and acquiring firms' performances.

Third, this study examines only a few factors of the target firm, in part due to data availability. Additional factors such as the firm's profitability and financial health (Åstebro & Winter, 2012; Bhattacharjee et al., 2009; Greenaway et al., 2009; Köke, 2002; van Teeffelen & Uhlaner, 2013), founder team and their characteristics (Bruno & Cooper, 1982; Coleman et al., 2013; Cooper & Bruno, 1977; Fortune & Mitchell, 2012; Greenaway et al., 2009; Wennberg et al., 2010), target firm's innovation capabilities

(Cefis & Marsili, 2006, 2011, 2012; Fontana & Nesta, 2009), and third party characteristics (Benou & Madura, 2005; Bertoni et al., 2013; Bruton et al., 2009; Puri & Zarutskie, 2012; Ragozzino & Blevins, 2015) may be related to private firm's attractiveness as an acquisition target. Future research that examines the effects of the above mentioned factors can further explain the variance in performance for private firms that are sold via M&A. For example, the founder team's level of education and type of education (Harada, 2007; Van Praag, 2003; Yusuf, 2012) as well as past entrepreneurial and work experiences (Lee & Lee, 2015; Van Praag, 2003; Yusuf, 2012) may be viewed by acquiring firms as reliable signals regarding target firms' resources and VRIN characteristics of these resources.

Fourth, the study only examines acquisition of U.S. private firms by U.S. public firms, while cross-border acquisitions (CBAs) are a very common phenomenon (Chari & Chang, 2009; Dikova & Brouthers, 2016; Elango et al., 2013; Ellis, Lamont, Reus, & Faifman, 2015; Faifman et al., 2016; Kung, Hu, Zhang, & Hu, 2010; Malhotra et al., 2011; Malhotra et al., 2015; Morschett, Schramm-Klein, & Swoboda, 2010; Nadolska & Barkema, 2007; Reus & Lamont, 2009; Shimizu et al., 2004; Zhu et al., 2015) as well as a unique context (Ellis et al., 2018; Sarala & Vaara, 2010). Testing the model developed in this paper in the cross-border acquisition context as well as expanding the model to include various factors relevant to CBAs such as cultural, institutional, and economic distances would contribute to both theory and practice.

5.4 Conclusion

M&A are common and growing, and a large share of the target firms are private. In some cases, the private firms were founded and developed with the goal of being sold

via M&A, and the financial returns for these firms' owners are generated via M&A. However, the current theories and perspectives of the firm and entrepreneurship as well as business model perspectives do not cover such firms. In turn, the performance indicators used for such firms may be inaccurate or irrelevant. To address this issue and to allow the study of the performance of such firms, this paper extends the theoretical perspectives to include such firms as well as coins the term, private firm's attractiveness as an acquisition target, and uses it as a performance indicator for such firms and business models. The paper then asks the research question, *What makes private firms attractive as acquisition targets?*

To answer the research question, the paper builds on RBV and signaling theory and develops a model of private firm's attractiveness as an acquisition target. According to the model, acquiring firms rely on signals to evaluate the VRIN characteristics of the target firm's resources and the firm's overall quality. The paper tests the hypotheses of the model using a sample of U.S. private target firms that were acquired by U.S. public firms. To address selection hazard, the paper uses both OLS regression with inverse Mills ratio and the Heckman two-step model. Overall, results suggest that acquiring firms perceive the target firm's industry innovativeness, third party involvement, growth in human capital, and growth in revenue as reliable signals. Furthermore, these signals are perceived differently in more innovative industries than in less innovative industries. The paper makes several contributions to literature, has implications for theory and practice, and makes suggestions for future research.

APPENDICES

Appendix A: Constructs, Measurements, and Data Sources

Construct		Variable	Measurement	Data Source
Private Firm's Attractiveness as an Acquisition Target		Dependent Variable	M&A Transaction Value Divided by Target Firm's Revenue	PrivCo
Signal of Third Party's Perception of the Target Firm		IV1: Investor Involvement	Number of Investors	PrivCo
Signal of Target Firm's Industry Innovativeness		IV2: Target Firm's Industry R&D Intensity	R&D expense divided by net sales. Based on NAICS Classification	National Science Foundation
Signal of Target Firm's Emphasis on Growth		IV3: Signal of Emphasis on Growth in Human Capital IV4: Signal of Emphasis on Growth in Revenue	Target Firm's Employee Growth 1 Year Prior to Acquisition Target Firm's Revenue Growth 1 Year Prior to Acquisition	PrivCo
Control Variables (CV)		Selection Hazard	Inverse Mills Ration	Calculated
		CV: Acquiring Firm's Size	Total Assets	SDC Platinum, 10-K
		CV: Relatedness	Scale Based on SIC codes	PrivCo, SDC Platinum, siccode.com
		CV: Acquiring Firm's M&A Experience	Number of Acquisition in Five Years Preceding the Acquisition	SDC Platinum, Crunchbase.com
		CV: Target Firm's Size	Number of Employees	PrivCo

Appendix B: Stepwise Regression

Variables Removed	
Acquiring Firm's M&A Experience	p = 0.99
Relatedness	p = 0.42
Emphasis on Growth in Revenue X Target Firm's Industry R&D Intensity	p = 0.44
Inverse Mills Ratio	p = 0.17
Variable Used	
Investor Involvement X Target Firm's Industry R&D Intensity	-0.004* (0.002)
Acquiring Firm's Size	0.19*** (0.04)
Investor Involvement X Target Firm's Industry R&D Intensity	0.07* (0.03)
Emphasis on Growth in Human Capital X Emphasis on Growth in Revenue	-0.57*** (0.15)
Target Firm's Size	-0.13** (0.05)
Investor Involvement	0.04* (0.02)
Target Firm's Industry R&D Intensity	0.07*** (0.02)
Emphasis on Growth in Human Capital	0.89*** (0.23)
Emphasis on Growth in Revenue	0.74*** (0.16)
R ²	0.52
Adj. R ²	0.50
F	25.14***

REFERENCES

- Abernathy, W. J., & Utterback, J. M. 1988. Innovation over time and in historical context. *Readings in the Management of Innovation*, 2: 25-36.
- Akerlof, G. A. 1970. The market for "lemons": Quality uncertainty and the market mechanism. *The Quarterly Journal of Economics*: 488-500.
- Alessandri, T., Cerrato, D., & Depperu, D. 2014. Organizational slack, experience, and acquisition behavior across varying economic environments. *Management Decision*, 52(5): 967-982.
- Alvarez, S. A., & Busenitz, L. W. 2001. The entrepreneurship of resource-based theory. *Journal of Management*, 27(6): 755-775.
- Amaral, A. M., Baptista, R., & Lima, F. 2007. Entrepreneurial exit and firm performance. *Frontiers of Entrepreneurship Research*, 27(5): 1.
- Åstebro, T., & Winter, J. K. 2012. More than a dummy: The probability of failure, survival and acquisition of firms in financial distress. *European Management Review*, 9(1): 1-17.
- Backes-Gellner, U., & Werner, A. 2007. Entrepreneurial signaling via education: A success factor in innovative start-ups. *Small Business Economics*, 29(1): 173-190.
- Balcaen, S., Manigart, S., Buyze, J., & Ooghe, H. 2012. Firm exit after distress: differentiating between bankruptcy, voluntary liquidation and M&A. *Small Business Economics*, 39(4): 949-975.
- Barkema, H. G., & Schijven, M. 2008a. How do firms learn to make acquisitions? A review of past research and an agenda for the future. *Journal of Management*, 34(3): 594-634.
- Barkema, H. G., & Schijven, M. 2008b. Toward unlocking the full potential of acquisitions: The role of organizational restructuring. *Academy of Management Journal*, 51(4): 696-722.
- Barney, J. 1991. Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17(1): 99-120.

- Bates, T. 2005. Analysis of young, small firms that have closed: delineating successful from unsuccessful closures. *Journal of Business Venturing*, 20(3): 343-358.
- Bauer, F., Matzler, K., & Wolf, S. 2014. M&A and innovation: The role of integration and cultural differences—A central European targets perspective. *International Business Review*.
- BCG. 2017. Capturing More Value from New Technology Growth Models, Vol. 2018: Boston Consulting Group.
- Beckman, C. M., & Haunschild, P. R. 2002. Network learning: The effects of partners' heterogeneity of experience on corporate acquisitions. *Administrative Science Quarterly*, 47(1): 92-124.
- Benou, G., & Madura, J. 2005. High-tech acquisitions, firm specific characteristics and the role of investment bank advisors. *The Journal of High Technology Management Research*, 16(1): 101-120.
- Benson, D., & Ziedonis, R. H. 2009. Corporate venture capital as a window on new technologies: Implications for the performance of corporate investors when acquiring startups. *Organization Science*, 20(2): 329-351.
- Benson, D., & Ziedonis, R. H. 2010. Corporate venture capital and the returns to acquiring portfolio companies. *Journal of Financial Economics*, 98(3): 478-499.
- Bergh, D. D., Connelly, B. L., Ketchen, D. J., & Shannon, L. M. 2014. Signalling theory and equilibrium in strategic management research: An assessment and a research agenda. *Journal of Management Studies*, 51(8): 1334-1360.
- Bertoni, F., Colombo, M. G., & Grilli, L. 2013. Venture capital investor type and the growth mode of new technology-based firms. *Small Business Economics*, 40(3): 527-552.
- Bettis, R., Gambardella, A., Helfat, C., & Mitchell, W. 2014. Quantitative empirical analysis in strategic management. *Strategic Management Journal*, 35(7): 949-953.
- Bhattacharjee, A., Higson, C., Holly, S., & Kattuman, P. 2009. Macroeconomic instability and business exit: Determinants of failures and acquisitions of UK firms. *Economica*, 76(301): 108-131.
- Billett, M. T. 1996. Targeting capital structure: The relationship between risky debt and the firm's likelihood of being acquired. *Journal of Business*: 173-192.

- Blonigen, B. A., & Taylor, C. T. 2000. R&D intensity and acquisitions in high-technology industries: evidence from the US electronic and electrical equipment industries. *The Journal of Industrial Economics*, 48(1): 47-70.
- Bottazzi, L., Da Rin, M., & Hellmann, T. 2008. Who are the active investors?: Evidence from venture capital. *Journal of Financial Economics*, 89(3): 488-512.
- Bresman, H., Birkinshaw, J., & Nobel, R. 2010. Knowledge transfer in international acquisitions. *Journal of International Business Studies*, 41(1): 5-20.
- Brueller, N. N., Carmeli, A., & Drori, I. 2014. How do different types of mergers and acquisitions facilitate strategic agility? *California Management Review*, 56(3): 39-57.
- Bruno, A. V., & Cooper, A. C. 1982. Patterns of development and acquisitions for Silicon Valley startups. *Technovation*, 1(4): 275-290.
- Bruton, G. D., Chahine, S., & Filatotchev, I. 2009. Founders, private equity investors, and underpricing in entrepreneurial IPOs. *Entrepreneurship Theory and Practice*, 33(4): 909-928.
- Burgelman, R. A. 1994. Fading memories: A process theory of strategic business exit in dynamic environments. *Administrative Science Quarterly*: 24-56.
- Campbell, N., & Mitchell, D. T. 2012. A (partial) review of entrepreneurship literature across disciplines. *Journal of Entrepreneurship and Public Policy*, 1(2): 183-199.
- Capron, L., & Shen, J. C. 2007. Acquisitions of private vs. public firms: Private information, target selection, and acquirer returns. *Strategic Management Journal*, 28(9): 891-911.
- Carow, K., Heron, R., & Saxton, T. 2004. Do early birds get the returns? An empirical investigation of early-mover advantages in acquisitions. *Strategic Management Journal*, 25(6): 563-585.
- Carr, A. 2012. Instagram, Facebook, and New Zero-revenue Acquisitions, Vol. 2017. fastcompany.com: fastcompany.com.
- Cartwright, S., & Schoenberg, R. 2006. Thirty Years of Mergers and Acquisitions Research: Recent Advances and Future Opportunities. *British Journal of Management*, 17(S1): S1-S5.
- Cefis, E., & Marsili, O. 2006. Survivor: The role of innovation in firms' survival. *Research Policy*, 35(5): 626-641.

- Cefis, E., & Marsili, O. 2007. Going, going, gone. innovation and exit in manufacturing firms.
- Cefis, E., & Marsili, O. 2011. Born to flip. Exit decisions of entrepreneurial firms in high-tech and low-tech industries. *Journal of Evolutionary Economics*, 21(3): 473-498.
- Cefis, E., & Marsili, O. 2012. Going, going, gone. Exit forms and the innovative capabilities of firms. *Research Policy*, 41(5): 795-807.
- Chandler, G. N., McKelvie, A., & Davidsson, P. 2009. Asset specificity and behavioral uncertainty as moderators of the sales growth—Employment growth relationship in emerging ventures. *Journal of Business Venturing*, 24(4): 373-387.
- Chari, M. D. R., & Chang, K. 2009. Determinants of the share of equity sought in cross-border acquisitions. *Journal of International Business Studies*, 40(8): 1277-1297.
- Chatterjee, S., & Wernerfelt, B. 1991. The link between resources and type of diversification: Theory and evidence. *Strategic Management Journal*, 12(1): 33-48.
- Cloodt, M., Hagedoorn, J., & Van Kranenburg, H. 2006. Mergers and acquisitions: Their effect on the innovative performance of companies in high-tech industries. *Research Policy*, 35(5): 642-654.
- Coff, R. 1999. How buyers cope with uncertainty when acquiring firms in knowledge-intensive industries: Caveat emptor. *Organization Science*, 10(2): 144-161.
- Coff, R. 2003. Bidding wars over R&D-intensive firms: Knowledge, opportunism, and the market for corporate control. *Academy of Management Journal*, 46(1): 74-85.
- Cohen, W. M., & Levinthal, D. A. 1990. Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly*: 128-152.
- Coleman, S., Cotei, C., & Farhat, J. 2013. A resource-based view of new firm survival: new perspectives on the role of industry and exit route. *Journal of Developmental Entrepreneurship*, 18(1): -1.
- Connelly, B. L., Certo, S. T., Ireland, R. D., & Reutzel, C. R. 2011. Signaling theory: A review and assessment. *Journal of Management*, 37(1): 39-67.
- Cooper, A. C., & Bruno, A. V. 1977. Success among high-technology firms. *Business Horizons*, 20(2): 16-22.

- Cording, M., Christmann, P., & Weigelt, C. 2010. Measuring theoretically complex constructs: The case of acquisition performance. *Strategic Organization*, 8(1): 11-41.
- Davidsson, P., Steffens, P., & Fitzsimmons, J. 2009. Growing profitable or growing from profits: Putting the horse in front of the cart? *Journal of Business Venturing*, 24(4): 388-406.
- Dawson, J. Interpreting Interaction Effects, Vol. 2018.
- Delmar, F., Davidsson, P., & Gartner, W. B. 2003. Arriving at the high-growth firm. *Journal of Business Venturing*, 18(2): 189-216.
- Delmar, F., McKelvie, A., & Wennberg, K. 2013. Untangling the relationships among growth, profitability and survival in new firms. *Technovation*, 33(8-9): 276-291.
- Delmar, F., & Wiklund, J. 2008. The effect of small business managers' growth motivation on firm growth: A longitudinal study. *Entrepreneurship Theory and Practice*, 32(3): 437-457.
- Deloitte. 2018. M&A Trends Report 2018, Vol. 2018: deloitte.com.
- Dess, G. G., & Robinson, R. B. 1984. Measuring organizational performance in the absence of objective measures: the case of the privately-held firm and conglomerate business unit. *Strategic Management Journal*, 5(3): 265-273.
- DeTienne, D. R. 2010. Entrepreneurial exit as a critical component of the entrepreneurial process: Theoretical development. *Journal of Business Venturing*, 25(2): 203-215.
- DeTienne, D. R., & Cardon, M. S. 2012. Impact of founder experience on exit intentions. *Small Business Economics*, 38(4): 351-374.
- DeTienne, D. R., & Chandler, G. N. 2010. The impact of motivation and causation and effectuation approaches on exit strategies. *Frontiers of Entrepreneurship Research*, 30(1): 1.
- DeTienne, D. R., McKelvie, A., & Chandler, G. N. 2014. Making sense of entrepreneurial exit strategies: A typology and test. *Journal of Business Venturing*(0).
- Dikova, D., & Brouthers, K. 2016. International establishment mode choice: past, present and future. *Management International Review*, 56(4): 489-530.
- Drori, I., Wrzesniewski, A., & Ellis, S. 2011. Cultural clashes in a "merger of equals": The case of high-tech start-ups. *Human Resource Management*, 50(5): 625-649.

- Edwards, D. 2012. Innovation adventures beyond the core. *Research-Technology Management*, 55(6): 33-41.
- Eisenhardt, K. M., & Martin, J. A. 2000. Dynamic capabilities: what are they? *Strategic Management Journal*: 1105-1121.
- Elango, B., Lahiri, S., & Kundu, S. K. 2013. How does firm experience and institutional distance impact ownership choice in high-technology acquisitions? *R&D Management*, 43(5): 501-516.
- Ellis, K. M., & Lamont, B. T. 2004. "Ideal" Acquisition Integration Approaches in Related Acquisitions of Equals: A Test of Long-Held Beliefs. *Advances in Mergers and Acquisitions*, 3: 81-102.
- Ellis, K. M., Lamont, B. T., Holmes Jr, R. M., Ro, S., Faifman, L., DeGhetto, K., & Parola, H. 2018. Institutional determinants of ownership positions of foreign acquirers in Africa. *Global Strategy Journal*, 8(2): 242-274.
- Ellis, K. M., Lamont, B. T., Reus, T. H., & Faifman, L. 2015. Mergers and acquisitions in Africa: A review and an emerging research agenda. *Africa Journal of Management*, 1(2): 137-171.
- Ellis, K. M., Reus, T. H., Lamont, B. T., & Ranft, A. L. 2011. Transfer effects in large acquisitions: How size-specific experience matters. *Academy of Management Journal*, 54(6): 1261-1276.
- Ellis, K. M., Weber, Y., Raveh, A., & Tarba, S. Y. 2012. Integration in large, related M&As: linkages between contextual factors, integration approaches and process dimensions. *European Journal of International Management*, 6(4): 368-394.
- Esteve-Pérez, S., Sanchis-Llopis, A., & Sanchis-Llopis, J. A. 2010. A competing risks analysis of firms' exit. *Empirical Economics*, 38(2): 281-304.
- EY. 2018. Software M&A Overview, Vol. 2018: Ernst & Young.
- Faifman, L., Ellis, K. M., & Golden, P. A. 2016. *Cross-border M&A Effects of High Tech Status on Share of Ownership in Target Firms*. Paper presented at the Academy of Management Proceedings.
- Fiorentino, R., & Garzella, S. 2015. Synergy management pitfalls in mergers and acquisitions. *Management Decision*, 53(7): 1469-1503.
- Fontana, R., & Nesta, L. 2009. Product innovation and survival in a high-tech industry. *Review of Industrial Organization*, 34(4): 287-306.

- Fortune, A., & Mitchell, W. 2012. Unpacking Firm Exit at the Firm and Industry Levels: The Adaptation and Selection of Firm Capabilities. *Strategic Management Journal*, 33(7): 794-819.
- Francis, B., Hasan, I., & Siregar, D. 2009. The choice of IPO versus M&A: evidence from banking industry. *Applied Financial Economics*, 19(24): 1987-2007.
- Freel, M. S., & Robson, P. J. 2004. Small firm innovation, growth and performance: Evidence from Scotland and Northern England. *International Small Business Journal*, 22(6): 561-575.
- Ghosh, A., Gu, Z., & Jain, P. C. 2005. Sustained earnings and revenue growth, earnings quality, and earnings response coefficients. *Review of Accounting Studies*, 10(1): 33-57.
- Gilbert, B. A., McDougall, P. P., & Audretsch, D. B. 2006. New venture growth: A review and extension. *Journal of Management*, 32(6): 926-950.
- Graebner, M. E. 2004. Momentum and serendipity: How acquired leaders create value in the integration of technology firms. *Strategic Management Journal*, 25(8-9): 751-777.
- Graebner, M. E., & Eisenhardt, K. M. 2004. The seller's side of the story: Acquisition as courtship and governance as syndicate in entrepreneurial firms. *Administrative Science Quarterly*, 49(3): 366-403.
- Graebner, M. E., Eisenhardt, K. M., & Roundy, P. T. 2010. Success and failure in technology acquisitions: Lessons for buyers and sellers. *The Academy of Management Perspectives*, 24(3): 73-92.
- Granstrand, O., & Sjölander, S. 1990. The acquisition of technology and small firms by large firms. *Journal of Economic Behavior & Organization*, 13(3): 367-386.
- Grant, R. M. 1996. Prospering in dynamically-competitive environments: Organizational capability as knowledge integration. *Organization Science*, 7(4): 375-387.
- Greenaway, D., Gullstrand, J., & Kneller, R. 2009. Live or let die? Alternative routes to industry exit. *Open Economies Review*, 20(3): 317-337.
- Greve, H. R. 2008. A behavioral theory of firm growth: Sequential attention to size and performance goals. *Academy of Management Journal*, 51(3): 476-494.
- Grilli, L. 2011. When the going gets tough, do the tough get going? The pre-entry work experience of founders and high-tech start-up survival during an industry crisis. *International Small Business Journal*, 29(6): 626-647.

- Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. 1995. Multivariate data analysis with readings. *New Jersey: Englewood*.
- Haleblian, J., Devers, C. E., McNamara, G., Carpenter, M. A., & Davison, R. B. 2009. Taking stock of what we know about mergers and acquisitions: A review and research agenda. *Journal of Management*, 35(3): 469-502.
- Haleblian, J., & Finkelstein, S. 1999. The influence of organizational acquisition experience on acquisition performance: A behavioral learning perspective. *Administrative Science Quarterly*, 44(1): 29-56.
- Harada, N. 2007. Which firms exit and why? An analysis of small firm exits in Japan. *Small Business Economics*, 29(4): 401-414.
- Harhoff, D., Stahl, K., & Woywode, M. 1998. Legal form, growth and exit of West German firms—empirical results for manufacturing, construction, trade and service industries. *The Journal of Industrial Economics*, 46(4): 453-488.
- Harms, R., Kraus, S., & Reschke, C. H. 2007. Configurations of new ventures in entrepreneurship research: contributions and research gaps. *Management Research News*, 30(9): 661-673.
- Headd, B. 2003. Redefining business success: Distinguishing between closure and failure. *Small Business Economics*, 21(1): 51-61.
- Heeley, M. B., King, D. R., & Covin, J. G. 2006. Effects of firm R&D investment and environment on acquisition likelihood*. *Journal of Management Studies*, 43(7): 1513-1535.
- Hitt, M. A., Ireland, R. D., Camp, S. M., & Sexton, D. L. 2001. Strategic entrepreneurship: Entrepreneurial strategies for wealth creation. *Strategic Management Journal*, 22(6-7): 479-491.
- Hitt, M. A., Ireland, R. D., Sirmon, D. G., & Trahms, C. A. 2011. Strategic entrepreneurship: creating value for individuals, organizations, and society. *The Academy of Management Perspectives*, 25(2): 57-75.
- Hitt, M. A., King, D., Krishnan, H., Makri, M., Schijven, M., Shimizu, K., & Zhu, H. 2009. Mergers and acquisitions: Overcoming pitfalls, building synergy, and creating value. *Business Horizons*, 52(6): 523-529.
- Hoskisson, R. E., Covin, J., Volberda, H. W., & Johnson, R. A. 2011. Revitalizing entrepreneurship: The search for new research opportunities. *Journal of Management Studies*, 48(6): 1141-1168.

- Ireland, R. D., Hitt, M. A., & Sirmon, D. G. 2003. A model of strategic entrepreneurship: The construct and its dimensions. *Journal of Management*, 29(6): 963-989.
- Ireland, R. D., & Webb, J. W. 2007. A cross-disciplinary exploration of entrepreneurship research. *Journal of Management*, 33(6): 891-927.
- Ivanov, V. I., & Xie, F. 2010. Do corporate venture capitalists add value to start-up firms? Evidence from IPOs and acquisitions of VC-backed companies. *Financial Management*, 39(1): 129-152.
- Jemison, D. B., & Sitkin, S. B. 1986. Corporate acquisitions: A process perspective. *Academy of Management Review*, 11(1): 145-163.
- Kaul, A., & Wu, B. 2015. A capabilities-based perspective on target selection in acquisitions. *Strategic Management Journal*.
- Kaul, A., & Wu, B. 2016. A capabilities-based perspective on target selection in acquisitions. *Strategic Management Journal*, 37(7): 1220-1239.
- Keil, T. 2004. Building external corporate venturing capability. *Journal of Management Studies*, 41(5): 799-825.
- Kim, J.-Y. J., Haleblan, J. J., & Finkelstein, S. 2011. When firms are desperate to grow via acquisition: The effect of growth patterns and acquisition experience on acquisition premiums. *Administrative Science Quarterly*, 56(1): 26-60.
- King, D. R., Covin, J. G., & Hegarty, W. H. 2003. Complementary resources and the exploitation of technological innovations. *Journal of Management*, 29(4): 589-606.
- King, D. R., Dalton, D. R., Daily, C. M., & Covin, J. G. 2004. Meta-analyses of post-acquisition performance: Indications of unidentified moderators. *Strategic Management Journal*, 25(2): 187-200.
- King, D. R., Slotegraaf, R. J., & Kesner, I. 2008. Performance implications of firm resource interactions in the acquisition of R&D-intensive firms. *Organization Science*, 19(2): 327-340.
- Kirca, A. H., Hult, G. T. M., Roth, K., Cavusgil, S. T., Perry, M. Z., Akdeniz, M. B., Deligonul, S. Z., Mena, J. A., Pollitte, W. A., Hoppner, J. J., Miller, J. C., & White, R. C. 2011. Firm-Specific Assets, Multinationality, and Financial Performance: A Meta-Analytic Review and Theoretical Integration. *Academy of Management Journal*, 54(1): 47-72.
- Köke, J. 2002. Determinants of acquisition and failure: evidence from corporate Germany. *Structural Change and Economic Dynamics*, 13(4): 457-484.

- Kraaijenbrink, J., Spender, J.-C., & Groen, A. J. 2010. The resource-based view: A review and assessment of its critiques. *Journal of Management*, 36(1): 349-372.
- Kung, P., Hu, D., Zhang, Q., & Hu, L.-k. 2010. Similarity or Dissimilarity is Better: Does Culture Dissimilarity Impact M & A Performances? *Journal of International Management Studies*, 5(2): 263.
- Kuratko, D. F., & Audretsch, D. B. 2009. Strategic entrepreneurship: exploring different perspectives of an emerging concept. *Entrepreneurship Theory and Practice*, 33(1): 1-17.
- Laamanen, T. 2007. On the role of acquisition premium in acquisition research. *Strategic Management Journal*, 28(13): 1359-1369.
- Langford, R., & Brown III, C. 2004. Making M&A pay: lessons from the world's most successful acquirers. *Strategy & Leadership*, 32(1): 5-14.
- Larsson, R., & Finkelstein, S. 1999. Integrating strategic, organizational, and human resource perspectives on mergers and acquisitions: A case survey of synergy realization. *Organization Science*, 10(1): 1-26.
- Lee, S. M., & Lee, B. 2015. Entrepreneur characteristics and the success of venture exit: an analysis of single-founder start-ups in the US. *International Entrepreneurship and Management Journal*, 11(4): 891.
- Leiblein, M. J. 2011. What do resource-and capability-based theories propose?: SAGE Publications Sage CA: Los Angeles, CA.
- Levinthal, D. A., & March, J. G. 1993. The myopia of learning. *Strategic Management Journal*, 14(S2): 95-112.
- Locke, K., & Golden-Biddle, K. 1997. Constructing opportunities for contribution: Structuring intertextual coherence and "problematizing" in organizational studies. *Academy of Management Journal*, 40(5): 1023-1062.
- Lynley, M. 2011. With GroupMe's Acquisition, Zero Revenue Companies are Back in Style, Vol. 2017. venturebeat.com: venturebeat.com.
- Makadok, R. 2001. Toward a synthesis of the resource-based and dynamic-capability views of rent creation. *Strategic Management Journal*, 22(5): 387-401.
- Makri, M., Hitt, M. A., & Lane, P. J. 2010. Complementary technologies, knowledge relatedness, and invention outcomes in high technology mergers and acquisitions. *Strategic Management Journal*, 31(6): 602-628.

- Malhotra, S., Sivakumar, K., & Zhu, P. 2011. Curvilinear relationship between cultural distance and equity participation: An empirical analysis of cross-border acquisitions. *Journal of International Management*, 17(4): 316-332.
- Malhotra, S., Zhu, P., & Reus, T. H. 2015. Anchoring on the acquisition premium decisions of others. *Strategic Management Journal*, 36(12): 1866-1876.
- Mangipudi, C. S., Subramanian, K. V., & Vasu, R. 2017. Valuation of Private, Innovative Targets.
- March, J. G. 1991. Exploration and exploitation in organizational learning. *Organization Science*, 2(1): 71-87.
- Mason, C. M., & Harrison, R. T. 2006. After the exit: Acquisitions, entrepreneurial recycling and regional economic development. *Regional Studies*, 40(1): 55-73.
- Masulis, R. W., & Nahata, R. 2011. Venture capital conflicts of interest: Evidence from acquisitions of venture-backed firms. *Journal of Financial and Quantitative Analysis*, 46(2): 395-430.
- Mayer, D., & Kenney, M. 2004. Economic action does not take place in a vacuum: Understanding Cisco's acquisition and development strategy. *Industry and Innovation*, 11(4): 299-325.
- McNamara, G. M., Halebian, J. J., & Dykes, B. J. 2008. The performance implications of participating in an acquisition wave: Early mover advantages, bandwagon effects, and the moderating influence of industry characteristics and acquirer tactics. *Academy of Management Journal*, 51(1): 113-130.
- Miller, D. J. 2006. Technological diversity, related diversification, and firm performance. *Strategic Management Journal*, 27(7): 601-619.
- Mishra, C. S. 2010. Advancing Scholarly Research in Entrepreneurship: JSBM, 2001-2010. *Journal of Small Business Management*, 48(4): 469-470.
- Mishra, C. S. 2015. *Getting Funded: Proof-of-Concept, Due Diligence, Risk and Reward*: Springer.
- Mishra, C. S., & Zachary, R. K. 2013. The Nature of the Firm, the Growth and Resource-Based Theories of the Firm, and the Emergent Theory of the Entrepreneur: A Dedication to Nobel Laureate Ronald Coase. *Entrepreneurship Research Journal*, 3(4): 433-436.
- Mishra, C. S., & Zachary, R. K. 2014. *The Theory of Entrepreneurship: Creating and Sustaining Entrepreneurial Value*: Palgrave Macmillan.

- Morschett, D., Schramm-Klein, H., & Swoboda, B. 2010. Decades of research on market entry modes: What do we really know about external antecedents of entry mode choice? *Journal of International Management*, 16(1): 60-77.
- Nadolska, A., & Barkema, H. G. 2007. Learning to internationalise: the pace and success of foreign acquisitions. *Journal of International Business Studies*, 38(7): 1170-1186.
- Ng, D. W. 2007. A modern resource based approach to unrelated diversification. *Journal of Management Studies*, 44(8): 1481-1502.
- Ovtchinnikov, A. V. 2013. Merger waves following industry deregulation. *Journal of Corporate Finance*, 21: 51-76.
- Palich, L. E., Cardinal, L. B., & Miller, C. C. 2000. Curvilinearity in the diversification–performance linkage: an examination of over three decades of research. *Strategic Management Journal*, 21(2): 155-174.
- Pe'er, A., & Vertinsky, I. 2008. Firm exits as a determinant of new entry: Is there evidence of local creative destruction? *Journal of Business Venturing*, 23(3): 280-306.
- Peel, M., & Wilson, N. 1989. The liquidation/merger alternative some results for the UK corporate sector. *Managerial and Decision Economics*, 10(3): 209-220.
- Penrose, E. T., & Pitelis, C. 2002. *The growth of the firm: the legacy of Edith Penrose*: Oxford University Press on Demand.
- Peteraf, M. A., & Barney, J. B. 2003. Unraveling the resource-based tangle. *Managerial and Decision Economics*, 24(4): 309-323.
- Peteraf, M. A., & Bergen, M. E. 2003. Scanning dynamic competitive landscapes: a market-based and resource-based framework. *Strategic Management Journal*, 24(10): 1027-1041.
- Polovets, L. 2014. How Do Investors Value Pre-Revenue Companies?, Vol. 2017. Forbes: Forbes.
- Porrini, P. 2004. Alliance experience and value creation in high-tech and low-tech acquisitions. *Journal of High Technology Management Research*, 15(2): 267-292.
- Priem, R. L., Li, S., & Carr, J. C. 2012. Insights and new directions from demand-side approaches to technology innovation, entrepreneurship, and strategic management research. *Journal of Management*, 38(1): 346-374.

- Puranam, P., Singh, H., & Chaudhuri, S. 2009. Integrating acquired capabilities: When structural integration is (un) necessary. *Organization Science*, 20(2): 313-328.
- Puranam, P., Singh, H., & Zollo, M. 2006. Organizing for innovation: Managing the coordination-autonomy dilemma in technology acquisitions. *Academy of Management Journal*, 49(2): 263-280.
- Puranam, P., & Srikanth, K. 2007. What they know vs. what they do: How acquirers leverage technology acquisitions. *Strategic Management Journal*, 28(8): 805-825.
- Puri, M., & Zarutskie, R. 2012. On the life cycle dynamics of venture-capital-and non-venture-capital-financed firms. *The Journal of Finance*, 67(6): 2247-2293.
- Ragozzino, R., & Blevins, D. P. 2015. Venture-Backed Firms: How Does Venture Capital Involvement Affect Their Likelihood of Going Public or Being Acquired? *Entrepreneurship Theory and Practice*.
- Ragozzino, R., & Reuer, J. J. 2007. Initial public offerings and the acquisition of entrepreneurial firms. *Strategic Organization*, 5(2): 155-176.
- Ragozzino, R., & Reuer, J. J. 2010. The opportunities and challenges of entrepreneurial acquisitions. *European Management Review*, 7(2): 80-90.
- Ranft, A. L., & Lord, M. D. 2000. Acquiring new knowledge: The role of retaining human capital in acquisitions of high-tech firms. *The Journal of High Technology Management Research*, 11(2): 295-319.
- Ranft, A. L., & Lord, M. D. 2002. Acquiring new technologies and capabilities: A grounded model of acquisition implementation. *Organization Science*, 13(4): 420-441.
- Reuer, J. J., & Ragozzino, R. 2012. The choice between joint ventures and acquisitions: Insights from signaling theory. *Organization Science*, 23(4): 1175-1190.
- Reuer, J. J., Tong, T. W., & Wu, C.-W. 2012. A signaling theory of acquisition premiums: Evidence from IPO targets. *Academy of Management Journal*, 55(3): 667-683.
- Reus, T. H., & Lamont, B. T. 2009. The double-edged sword of cultural distance in international acquisitions. *Journal of International Business Studies*, 40(8): 1298-1316.
- Riviezzo, A. 2013. Acquisitions in knowledge-intensive industries: Exploring the distinctive characteristics of the effective acquirer. *Management Research Review*, 36(2): 183-212.

- Rossi, M., Tarba, S. Y., & Raviv, A. 2013. Mergers and acquisitions in the hightech industry: a literature review. *International Journal of Organizational Analysis*, 21(1): 66-82.
- Sarala, R. M., & Vaara, E. 2010. Cultural differences, convergence, and crossvergence as explanations of knowledge transfer in international acquisitions. *Journal of International Business Studies*, 41(8): 1365-1390.
- Schary, M. A. 1991. The probability of exit. *The RAND Journal of Economics*: 339-353.
- seekingalpha.com. 2018. Enterprise Value, Vol. 2018.
- Seth, A. 1990. Value creation in acquisitions: A re-examination of performance issues. *Strategic Management Journal*, 11(2): 99-115.
- Shane, S., & Venkataraman, S. 2000. The promise of entrepreneurship as a field of research. *Academy of Management Review*, 25(1): 217-226.
- Shimizu, K., Hitt, M. A., Vaidyanath, D., & Pisano, V. 2004. Theoretical foundations of cross-border mergers and acquisitions: A review of current research and recommendations for the future. *Journal of International Management*, 10(3): 307-353.
- Short, J. C., Ketchen, D. J., Shook, C. L., & Ireland, R. D. 2009. The concept of "opportunity" in entrepreneurship research: Past accomplishments and future challenges. *Journal of Management*.
- Smits, J. 2003. Estimating the Heckman two-step procedure to control for selection bias with SPSS. *Nijmegen, Radboud University*.
- Spence, M. 1973. Job market signaling. *The Quarterly Journal of Economics*, 87(3): 355-374.
- Spence, M. 1974. *Market signaling: Informational transfer in hiring and related screening processes*: Harvard Univ Pr.
- Statista. 2018. Value of Mergers and Acquisitions (M&A) Worldwide from 2013 to 2018, Vol. 2018: statista.com.
- Tanriverdi, H., & Venkataraman, N. 2005. Knowledge relatedness and the performance of multibusiness firms. *Strategic Management Journal*, 26(2): 97-119.
- Teece, D. J., Pisano, G., & Shuen, A. 1997. Dynamic capabilities and strategic management. *Strategic Management Journal*: 509-533.

- Thukkaram, N. 2014. The Epic Exit: Why Mobile Startups are Acquired, Vol. 2017: Fortune.com.
- Trichterborn, A., zu Knyphausen-Aufseß, D., & Schweizer, L. 2015. How to Improve Acquisition Performance: The Role of a Dedicated M&A Function, M&A Learning Process, and M&A Capability. *Strategic Management Journal*.
- Uhlenbruck, K., Hitt, M. A., & Semadeni, M. 2006. Market value effects of acquisitions involving Internet firms: A resource-based analysis. *Strategic Management Journal*, 27(10): 899-913.
- Van Praag, C. M. 2003. Business survival and success of young small business owners. *Small Business Economics*, 21(1): 1-17.
- van Teeffelen, L., & Uhlener, L. M. 2013. Firm Resource Characteristics and Human Capital as Predictors of Exit Choice: An Exploratory Study of SMEs. *Entrepreneurship Research Journal*, 3(1): 84-108.
- Wan, W. P., Hoskisson, R. E., Short, J. C., & Yiu, D. W. 2011. Resource-Based Theory and Corporate Diversification Accomplishments and Opportunities. *Journal of Management*, 37(5): 1335-1368.
- Weber, Y., & Tarba, S. 2011. Exploring integration approach in related mergers: Post-merger integration in the high-tech industry. *International Journal of Organizational Analysis*, 19(3): 202-221.
- Weinzimmer, L. G., Nystrom, P. C., & Freeman, S. J. 1998. Measuring organizational growth: Issues, consequences and guidelines. *Journal of Management*, 24(2): 235-262.
- Wennberg, K., & DeTienne, D. R. 2014. What do we really mean when we talk about 'exit'? A critical review of research on entrepreneurial exit. *International Small Business Journal*, 32(1): 4-16.
- Wennberg, K., Wiklund, J., DeTienne, D. R., & Cardon, M. S. 2010. Reconceptualizing entrepreneurial exit: Divergent exit routes and their drivers. *Journal of Business Venturing*, 25(4): 361-375.
- Williamson, O. E. 1981. The economics of organization: The transaction cost approach. *American Journal of Sociology*, 87(3): 548-577.
- Wulf, J. 2004. Do CEOs in Mergers Trade Power for Premium? Evidence from "Mergers of Equals". *Journal of Law Economics & Organization*, 20(1).
- Yusuf, J.-E. 2012. A tale of two exits: nascent entrepreneur learning activities and disengagement from start-up. *Small Business Economics*, 39(3): 783-799.

- Zachary, R., & Mishra, C. S. 2013. Research on Angel Investments: The Intersection of Equity Investments and Entrepreneurship. *Entrepreneurship Research Journal*, 3(2): 160-170.
- Zaheer, S., Schomaker, M., & Genc, M. 2003. Identity versus culture in mergers of equals. *European Management Journal*, 21(2): 185-191.
- Zhu, H., Xia, J., & Makino, S. 2015. How do high-technology firms create value in international M&A? Integration, autonomy and cross-border contingencies. *Journal of World Business*.
- Zott, C., & Amit, R. 2007. Business model design and the performance of entrepreneurial firms. *Organization Science*, 18(2): 181-199.
- Zott, C., & Amit, R. 2008. The fit between product market strategy and business model: implications for firm performance. *Strategic Management Journal*, 29(1): 1-26.
- Zott, C., Amit, R., & Massa, L. 2011. The business model: recent developments and future research. *Journal of Management*, 37(4): 1019-1042.