Breaking Down Organizational Silos: Marketing Resource Allocations and Firm Performance

A Dissertation Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

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May 2019

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DEDICATION

I'm dedicating my dissertation to my children, Nelson and Lillian, and my husband, Kirk, all of whom I love dearly. I know you have sacrificed a lot, yet steadily showed your support - and for that I will always be grateful. I thank the Lord every day for you!

"Love is patient, love is kind. It does not envy, it does not boast, it is not proud. It does not dishonor others, it is not self-seeking, it is not easily angered, it keeps no record of wrongs. Love does not delight in evil but rejoices with the truth. It always protects, always trusts, always hopes, always perseveres. Love never fails." – 1 Corinthians 13:4-8

ACKNOWLEDGEMENTS

I am expressing my deepest gratitude to my advisor, Dr. Kelly Hewett, whose mentorship and friendship have been, and still are, invaluable. I am also thanking the Marketing and SCM faculty at UTK for their encouragement and support over the past four years. A special note of appreciation to my committee members, Chad Autry, Celeste Carruthers, and Alex Zablah, as well as my co-authors at UTK, Charles Nobles and Neeraj Bharadwaj. Lastly, I am indebted to the Economics faculty and staff for initially admitting me to UTK and believing in my capabilities.

Laura D'Oria, you are an amazing friend. Thank you for reading my manuscripts and always having an open ear. I'm so blessed to have you in my life, and I hope you and Mike will come often to visit us in SC.

Lawrence LaPlue, you were a great office mate and colleague. I always considered you a great role model in every aspect, professionally and personally, and I hope our families can meet up one day for another BBQ.

Li Cheng, thank you for being my go-to Econometrics pal, for your friendship, and for offering constructive feedback while sitting through many of my practice presentations.

Jade Chu, you are a wonderful desk mate and great friend. I will miss our conversations about the many different aspects of life.

A huge "thank you" to the Marketing and SCM staff. Cara, your smiling face and relentless willingness to help have been a saving grace on countless occasions.

To all the Marketing, SCM, Economics and other doctoral students that shared this journey with me: you have so often been a source of inspiration and support – thank you! A special thanks to Lisa Beeler-Connelly and Nawar Chaker for their encouragement and mentorship as I transitioned to the Marketing department and for fun times on the pit.

I'm grateful for the scholars who have supported my research endeavors over the past years, especially Jan Heide, Lopo Rego, Alok Saboo, V. Kumar, Felipe Thomaz and Anton Fenik.

This accomplishment would not have been possible without the steady support from my family and friends. Tanja, Hermann, Lukas, Markus und Stefan, you are the best family one could ask for and always have my back. To my parents, thank you for instilling in me the values that allow me to succeed. To my extended family in Germany and here in the U.S., and to my friends around the globe who have stood by my side, I thank you and treasure our times together.

ABSTRACT

Marketing value assessment, the identification and measurement of marketing's influence on firm performance, is a challenging, yet imperative undertaking as marketing managers are under increasing pressure to defend the value of their activities (Hanssens and Pauwels 2016; Morgan 2012). These activities necessitate financial resource allocations that trickle down from larger strategic marketing investment decisions (Hanssens and Pauwels 2016). However, these allocation efforts are often managed separately in functional "silos" within firms (Hanssens and Pauwels 2016; Keiningham, Aksoy, Perkins-Munn and Vavra 2005), potentially leading to ineffectiveness and inefficiencies of marketing resource allocations. Surprisingly, very little is known about the quantifiable issues associated with managing specific marketing assets and resource allocations within organizational silos and the implications for marketing managers (Keiningham et al. 2005).

In this dissertation, I examine the effects of resource allocations, and specifically, the importance of cross-functional and strategic integration, on marketing performance indicators. In my first essay, I investigate marketing resource allocations through two fundamental processes, value creation and value appropriation, across two strategic dimensions, internally versus via interfirm relationships. In my second essay, I investigate potential spillover benefits from marketing resource allocations to customer satisfaction and brand equity. Using a theoretical resource orchestration and a marketing capabilities framework, I promote the importance of breaking down organizational silos at different hierarchical levels to enhance marketing resource allocation effectiveness and efficiencies.

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INTRODUCTION

Marketing value assessment, the identification and measurement of how marketing influences firm performance, is a challenging, yet imperative undertaking as marketing managers are under increasing pressure to defend the value of their activities (Hanssens and Pauwels 2016; Morgan 2012; Srinivasan and Hanssens 2009). Marketing activities are tactical marketing actions such as advertising, new product development or service improvements under the day-to-day control of managers below the C-suite in the organizational hierarchy (Hanssens and Pauwels 2016; Rust, Ambler, Carpenter, Kumar and Srivastava 2004). These activities necessitate intricate financial resource allocations that trickle down from larger strategic marketing investment decisions which are typically deliberated and determined by senior managers at higher levels in the organizational hierarchy (Hanssens and Pauwels 2016; Mantrala, Sinha and Zoltners 1992).

Further complicating these resource allocation decisions is the presence of organizational (or functional) silos, a concern echoed in a Deloitte/ CMO Council™ survey in which managers indicated that the "ever-present issue of functional silos that keep data and touchpoints segmented and separated" is a key barrier to firm growth. Marketing managers in charge of driving firm growth find their efforts hindered as functional silos cause conflicts within organizations over market and product priorities (Day 2006). Managing intangible marketing assets associated with markets and products is of central concern for managers who vie for limited resources to implement competing marketing strategies in their quest for sustainable competitive advantage (Rust, Lemon

and Zeithaml 2004). In this dissertation, I examine how different types of marketing resources are interlinked in creating competitive advantage (Rust et al. 2004) by quantifying issues associated with managing specific marketing assets and resource allocations within organizational silos and the implications for marketing managers (Keiningham et al. 2005).

My first essay examines how resource allocations to two fundamental processes for creating a sustainable competitive advantage and ultimately firm growth, namely value creation activities and value appropriation activities (Fang, Palmatier, and Grewal 2011; Mizik and Jacobson 2003), affect firm performance. Firms can pursue value creation with the formation of new assets and capabilities through firm-internal research and development, innovation, and new product introduction, and value appropriation through firm-internal activities such as branding and advertising, which protect positional advantages (Krasnikov and Jayachandran 2008; Mizik and Jacobson 2003). In addition to firm-internal activities, firms often rely on interfirm relationships in an effort to compete more effectively by accessing and utilizing external resources and capabilities (Palmatier, Dant and Grewal 2007; Swaminathan and Moorman 2009). Interfirm relationships can support both value creation or appropriation goals by improving innovation and new product development capabilities, accelerating entry into new markets, and facilitating the penetration of existing ones (Kale, Dyer and Singh 2002; Rindfleisch and Moorman 2001). Regardless of the mode managers choose to pursue growth strategies, firm-internal or via interfirm relationships, both, value creation and appropriation require leveraging scarce resources and inherent tradeoffs (Han, Mittal and Zhang 2017).

The impact of growth strategies and their underlying resources on sustainable competitive advantage, and ultimately performance, is governed by the difficulty that competitors face in imitating them and the difficulty they face in obtaining them from the market system (Krasnikov and Jayachandran 2008). Such inimitability is likely to be greater when growth strategies involve combined resources from multiple organizations and potentially greater still when those organizations have diverse backgrounds. As such, I use the context of international alliances to answer the over-arching question as to how trading off investments in value creation versus appropriation activities, and pursuing each internally versus via international alliances, impacts firm performance based on the following arguments: First, international partners possess important host-market knowledge (Inkpen and Beamish 1997) that aids firms' market-based learning for market development, an important source of sustainable competitive advantage (Vorhies and Morgan 2005). Secondly, international partners offer opportunities to access knowledge and capabilities for value creation and value appropriation that are not currently available in the home market (Sirmon and Lane 2004). Lastly, and perhaps most importantly, interfirm relationships with foreign partners are not as easily replicated by competitors relative to domestic interfirm relationships (Kale and Sighn 2009), effectively restricting access to capabilities and knowledge from foreign partners by competitors.

My second essay examines the effect of potential marketing investment spillovers on resource allocation efficiencies and answers the following research questions: (1) Are there any investment spillover benefits from brand equity investments to customer satisfaction measures or from customer satisfaction investments to brand equity

outcomes? (2) How might quantifying these spillovers generate knowledge for managers to improve the efficiency of their marketing investments in both customer satisfaction and brand equity? Brand management capabilities and customer relationship management capabilities, both cross-functional marketing capabilities that compete for limited resources, involve the integration of different specialized capabilities that may not all reside with the formal marketing function in an organization (Morgan 2012; Srivastava et al. 1999). Brand management capabilities guide firms in creating brand equity with processes and routines used to develop, maintain, and leverage a firm's brand assets (Morgan, Slotegraaf and Vorhies 2009; Morgan 2012). Customer relationship capabilities guide firms in creating customer satisfaction, an important measure of the quality of a firm's relationship with its customers (Gruca and Rego 2005), with processes and routines used to build, maintain, and leverage relationships with customers (Morgan, Slotegraaf and Vorhies 2009).

While strategic resource allocation decisions to these two cross-functional marketing capabilities are often made in isolation across different functions within firms (Keiningham, Aksoy, Perkins-Munn, and Vavra 2005), marketing performance measures such as brand equity and customer satisfaction share common features and, on the most basic level, are both considered intangible marketing assets (Villanueva and Hanssens 2007). As such, it is to be expected that investments in one will affect outcomes in the other as well. By constructing a novel measure of brand equity investment and customer satisfaction investment, I explore potential spillover effects across these two strategic

marketing initiatives, and detail how they can help marketing managers improve resource allocation effectiveness.

CHAPTER I -
RESOURCE ALLOCATIONS TO VALUE CREATION AND VALUE APPROPRIATION: THE ROLE OF STRATEGIC INTERNATIONAL ALLIANCES

Abstract

To enhance firm growth, managers can allocate scarce resource to two fundamental growth strategies, value creation and value appropriation. These strategies can also be implemented via two fundamental strategic modes: internally via investments in activities such as promotion or research and development, and externally via interfirm relationships. Using a resource orchestration framework, that allows me to highlight how managers' resource allocation decisions affect firms' resource-based competitive advantages, and situated in an international alliance context to underscore the important role of international partners as resource contributors, I empirically asses the effect of managers' resource allocations on firm growth. Using data from 1468 international alliances over the period from 1990 – 2010, I find that a relative focus on value creation versus value appropriation via international alliances enhances firm growth, although in a contingent manner. I also find that pursing complementary growth strategies across the two modes enhances growth. Overall, the results demonstrate that the impact of resource allocations to a firm's growth strategy should be examined in conjunction with its international alliance activities, and that these allocations should be coordinated across these different implementation modes.

Introduction

As firms pursue sustainable competitive advantage, they strategically allocate resources to activities that create new value for their customers and to activities that allow them to appropriate value from the marketplace (Lepak, Smith and Taylor 2007). In the marketing literature, value creation activities have been associated with the formation of

new assets and capabilities through research and development (R&D), innovation, and new product introduction, while value appropriation activities have been associated with extracting profits from existing assets through activities such as branding and advertising, which protect positional advantages (Krasnikov and Jayachandran 2008; Mizik and Jacobson 2003). However, resource limitations can prevent firms from pursuing both these strategies simultaneously and require deliberate resource trade-offs (Han, Mittal and Zhan 2017; Mizik and Jacobson 2003; Saboo, Chakravarty and Grewal 2016). In addressing such tradeoffs, academic research has focused on performance consequences of strategic emphasis on value creation versus appropriation by examining its impact on return-on-assets, stock-market returns and firm-idiosyncratic risk (Han et al. 2017; Josephson, Johnson and Mariadoss 2016; Mizik and Jacobson 2003).

In addition to firm-internal activities, firms often rely on interfirm relationships in an effort to compete more effectively by accessing and utilizing external resources and capabilities (Palmatier, Dant and Grewal 2007; Saboo et al. 2016; Swaminathan and Moorman 2009). Interfirm relationships can support both value creation and appropriation goals by improving innovation and new product development capabilities, accelerating entry into new markets, and facilitating the penetration of existing ones (Kale, Dyer and Singh 2002; Rindfleisch and Moorman 2001). Specifically, interfirm relationships with foreign relative to domestic partners offer firms a means of remaining competitive by improving firms' adaptabilities to global market conditions, reducing the risks associated with foreign marketing entry, and increasing market entry speed (Hitt, Dacin, Levitas, Edhec and Borza 2017; Lavie and Miller 2008). Beyond resource

allocation tradeoffs to internal activities for value creation and appropriation that have been widely examined (Han et al. 2017; Josephson et al. 2016; Mizik and Jacobson 2003), I argue that firms face similar tradeoffs with their external relationships, an issue that has largely been overlooked in the marketing literature. Thus, I situate this study in a strategic international alliance context and aim to answer the over-arching question as to how trading off investments in value creation versus appropriation activities, and pursuing each internally versus with foreign partners (via international alliances), impacts firm performance.

Although some firms form interfirm relationships primarily with domestic partners, others pursue international partnerships as a means of creating and sustaining a worldwide competitive advantage (Emden, Yaprak and Cavusgil 2005; Lavie and Miller 2008; Yeniyurt, Townsend, Cavusgil and Ghauri 2009). Relative to domestic partnerships, international alliances can be especially valuable for value creation strategies because they can help overcome knowledge redundancies more likely in domestic alliances and can offer exposure to foreign demand that can stimulate new innovation (Lavie and Miller 2008; Zhang, Shu, Jian, and Malter 2010). Exposure to foreign buyers as well as a larger pool of companies potentially interested in making use of a firm's intellectual property can also expand opportunities to appropriate value from existing assets and capabilities. For instance, Apple's partnerships with firms in markets like China both spawn new innovations and enable access to large and growing markets, thereby creating opportunities to create value through innovations and to appropriate value from existing assets (Campbell 2017). However, with these partnerships, firms also

face challenges in balancing the two strategic processes and deciding on the sufficient resource allocations to each (Mizik and Jacobson 2003).

Further complicating these resource allocation decisions is the presence of organizational silos, a concern echoed in a Deloitte/ CMO Council™ survey in which managers indicated that the "ever-present issue of functional silos that keep data and touchpoints segmented and separated" is a key barrier to firm growth[1]. I found further support for this assertion in interviews with managers (discussed further under methods), who indicated that multiple functional areas often participate in forming and maintaining international alliances. I argue that a lack of visibility across these different functional areas in terms of strategic goals and associated activities can undermine performance. As such, orchestrating resource allocations not only across strategies (value creation versus appropriation) but also across different modes (internal versus external[2] via strategic international alliances) can be essential to achieving and maintaining competitive advantage.

I ground my theoretical framework in resource orchestration theory, which contends that the value of resources for achieving and maintaining competitive advantage lies not in the resources themselves but rather stems from managerial actions related to structuring, bundling and leveraging the firm's resources (Sirmon, Hitt and Ireland 2007;

[1] https://cmo.deloitte.com/xc/en/pages/articles/cmo-council-report.html (p.8)
[2] I use the terms *external* and *interfirm* interchangeably throughout this study.

Sirmon, Hitt, Ireland and Gilbert 2011)[3]. In the broadest sense, resources are "something a firm can draw on to accomplish its goals" (Kozlenkova, Samaha and Palmatier 2014; p.5) and can be in the form of tangible and intangible assets that are used to develop and implement firm strategies (Ray, Barney and Muhanna 2004). As such marketing managers allocate existing resources (e.g., financial, relational, organizational) to value creation activities (e.g., new product innovation) aimed at structuring the firm's resource portfolio and value appropriation activities (e.g., advertising) aimed at leveraging the firm's resource portfolio. I focus on these specific orchestration processes in developing the conceptual framework.

Because resource orchestration can be especially critical in international environments based on greater variance in cultural norms and market conditions (Sirmon et al. 2011), I further address the question of how features of firms' international alliance portfolios can shape performance outcomes from their alliance strategies. The effectiveness of foreign partner relationships may depend on issues such as information asymmetries, which can increase the risk of opportunistic behavior (Yan and Gray 1994), and differences in value systems and behavioral tendencies that can lead to relational ambiguities and even mistrust (Parkhe 1991). Accordingly, the make-up of a firm's

[3] In this study, the term "resources" refers to inputs as well as outputs consistent with Barney's (1991) notion that firm resources are "all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc., controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness." As such, "resource allocation" refers to the portion of firms' expenditures or investments of existing resources assigned to implement value creation and value appropriation strategies.

international alliance portfolio may influence its ability to absorb and diffuse knowledge and capabilities gained via its partnerships (Sirmon et al. 2011).

This study makes two key contributions to the marketing literature (summarized in Table 1.1; all figures and tables are located in Appendix 1.B). First, to my knowledge, this is the first study to examine the interrelatedness of value creation and appropriation internally and via interfirm relationships with foreign partners. While research has explored either trade-offs involving value creation or appropriation (Han et al. 2017; Mizik and Jacobson 2013), or pursuing either of them internally or via external partnerships (Borah and Tellis 2014; Heide 2003), we know remarkably little about performance effects of trade-offs across the two modes (internal versus external) concurrently. Second, I propose and develop a new construct, *strategic international alliance emphasis,* that allows me to capture a firm's relative focus on value appropriation vs. value creation via interfirm relationships with foreign partners. With alliances central to firm performance and growth (Bahadir, Bharadwaj and Parzen 2009; Shi, Sun and Prescott 2012), many firms enter international as well as domestic ones to create and sustain a global competitive advantage (Yeniyurt et al. 2009; Zhao and Priporas 2017). Thus, demonstrating the role of tradeoffs when allocating resources to different strategic goals in such relationships offers great practical value.

Leveraging an extensive database of international alliances over the period 1990-2010, I find that a firm's relative focus on value creation externally (via international alliances) can enhance performance, but by focusing on value creation both internally and via international alliances simultaneously the impact on performance is attenuated. This

suggests that firms can enhance performance by coordinating resource allocation activities not only across strategic goals by also across different modes of strategy implementation. Furthermore, I find that the make-up of a firm's alliance portfolio moderates the effectiveness of its international growth strategies. Together, these findings support the notion that optimal internal and external marketing and innovation asset configurations maximally impact firm performance (Fang, Palmatier and Grewal 2011).

Conceptual Framework

Theoretical Background

Resource orchestration theory (ROT), an extension of the resource-based view of the firm (RBV), was developed with the goal of understanding how managers affect a resource-based competitive advantage (Sirmon et al. 2007; 2011). Integrating the notions of bundling and leveraging resources (resource management) and developing and configuring assets and capabilities (asset orchestration), resource orchestration enables firms to develop unique sets of capabilities aimed at developing resource-based competitive advantages (Helfat et al. 2007; Sirmon et al. 2007; 2011). Resource orchestration occurs via three key processes: *structuring*, or acquiring, accumulating and divesting resources; *bundling*, or integrating resources to form capabilities; and *leveraging*, or exploiting existing resources (Sirmon et al. 2011). The process of acquiring and developing new resources (structuring) is consistent with the notion of investments in value creation activities and a strategic focus on creating a competitive advantage by constantly innovating and moving ahead of competitors (Mizik and Jacobson 2003). Processes aimed at resource exploitation (leveraging) are consistent with

investments to value appropriation activities and a strategic focus on sustaining a competitive advantage by ferociously defending it in the market against competitors (Mizik and Jacobson 2003). I employ ROT to show how strategic orientations necessitate an adequate amount of resources and to underscore managers' roles in allocating resources (and incurring tradeoffs) to structure and leverage firms' resource portfolios. Specifically, I emphasize tradeoffs to value appropriation relative to value creation activities internally, referred to as strategic marketing emphasis (SME) (Mizik and Jacobson 2003), as well as via international alliances, which I term strategic international alliance emphasis (SIAE) (see Figure 1.1).

Structuring the resource portfolio via value creation. Value creation activities enable firms to innovate, produce and deliver products to the market, effectively creating a competitive advantage (Mizik and Jacobson 2013). In the marketing literature, resource allocations to R&D have received the most attention as drivers of value creation strategies (Han et al. 2017; Mizik and Jacobson 2003; Swaminathan et al. 2008). Regardless the mode used to pursue these strategies, the resource portfolio must be adequately structured by accumulating or acquiring new resources to effectively implement the strategies (Sirmon et al. 2011). Accumulation of resources can be achieved via internal development or by forming interfirm relationships (Sirmon et al. 2007). Thus, managers structure the firm's resource portfolio via two modes: 1) by allocating resources internally to R&D with the goal of developing unique assets (Bharadwaj, Varadarajan and Fahy 1993) or 2) by investing in interfirm relationships with the goal of

acquiring or gaining access to new resources and capabilities (Fang, Lee and Yang 2015; Kalaignanam, Shankar and Varadarajan 2007).

While internal R&D activities such as new product or service development projects can add to a firm's resource portfolio, international alliances can also add to it by enabling access to assets and capabilities not available internally (Borah and Tellis 2014; Lin, Yang and Arya 2009). By interacting with international partners across countries, firms gain access to greater sources of heterogeneity in the form of more unique patterns of innovation and technology and diverse assets (Jiang, Tao and Santoro 2010; Kim 2016). Thus, by allocating resources not only to internal development activities but also to build and maintain successful international alliances, managers can establish a competitive advantage when competing domestically and in foreign markets (Sirmon et al. 2007; 2011).

Leveraging the resource portfolio for value appropriation. Value appropriation activities enable firms to extract profits from the marketplace by managing customers and markets, effectively sustaining a previously created competitive advantage (Mizik and Jacobson 2003). Resource allocations to marketing activities are argued to be particularly effective in creating barriers that make it difficult for rivals to replicate a firm's competitive strategy (Krasnikov and Jayachandran 2008; Lepak et al. 2007). While other activities, such as operations and innovation activities can also serve to erect barriers to competitors, the tacit and firm-specific nature of the processes underlying effective marketing activities make it especially difficult for rivals to copy (Krasnikov and Jayachandran 2008). By erecting barriers to protect a positional advantage, firms are

more effective in leveraging their existing resource portfolio for value appropriation as rivals are unable to imitate the firm's competitive advantage (Mizik and Jacobson 2003; Morgan 2012). Managers can leverage the firm's resource portfolio via two modes: 1) by allocating resources to erecting barriers to competitors via internal marketing activities (Morgan 2012) and 2) by investing in international alliances with the goal of developing new geographic markets or penetrating existing ones (Lavie et al. 2011). From a resource orchestration perspective, such investments support a firm's leveraging processes by conveying to customers how the firm's offerings fill their needs and by differentiating them from those of competitors (Lepak et al. 2007; Sirmon et al. 2011).

Firm internal marketing activities such as advertising and channel management allow firms to leverage their resources by differentiating their offerings from competitors and reaching a broader base of consumers, respectively (Mizik and Jacobson 2013; Zou, Fang and Zhao 2003). International alliances can serve as an additional mode of reaching a broader consumer base via foreign market access and protecting a firm's intellectual property (brands), effectively guarding the firm's positional advantage (Jayachandran, Kaufman, Kumar and Hewett 2013; Jiang et al. 2010). Thus, by allocating resources to firm internal marketing activities and international partnerships, managers extend a firm's competitive advantage and potentially leverage it in foreign markets (Lavie and Miller 2008; Sirmon et al. 2007).

Hypotheses

Consistent with the RBV and ROT, I theorize that not only a firm's strategic resources but especially the activities associated with managing these resources

collectively determine its growth (Bahadir et al. 2009; Shi et al. 2012) (see Figure 1.2). In contrast to most studies examining the impact of strategic tradeoffs on financial performance measures or firm risk, I assess the impact of a firm's strategic emphasis on growth outcomes. While growth is decidedly important to investors who evaluate accounting performance measures, there is a lack of marketing research examining the impact of strategic emphases on firm growth (Katsikeas, Morgan, Leonidou and Hult 2016; Morgan, Slotegraaf and Vorhies 2009). Broadly speaking, firms can grow "organically" (or internally) by way of creating a competitive advantage through the introduction of new marketing assets (i.e. products or brands) or by leveraging existing ones, effectively sustaining a competitive advantage (Jayachandran et al. 2013; Lehmann and Winer 2009). Consequently, I conceptualize a firm's SIAE as reflecting its underlying "semi-organic" growth strategy with respect to value appropriation relative to value creation via international alliance activities and subsequently hypothesize its impact on firm growth. Since a number of studies have examined the impact of SME on firm performance measures (Han et al. 2017; Josephson et al. 2016; Mizik and Jacobson 2003), and since the main focus of this study is to assess performance effects of strategic tradeoffs implemented across different modes, I do not formally hypothesize the effect of SME on firm growth. Of those studies that have examined the relationship between SME and firm performance, results have shown that in general a shift of relative emphasis toward value appropriation not only enhances firm profitability but also financial market returns (Josephson et al. 2016; Mizik and Jacobson 2003).

Strategic international alliance emphasis and firm growth. Alliances can take different forms, such as joint ventures, franchising, licensing contracts, R&D collaborations, marketing or distribution agreements, and participation in research consortia (Anand and Khanna 2000; Kale et al. 2002). International alliances afford firms additional means of leveraging existing resources for the purpose of value appropriation effectively extending the firm's competitive advantage. In general, foreign partnerships allow firms to leverage existing technologies and products by extending the firm's reach to new product markets (Jiang et al. 2010; Lavie and Miller 2008). Furthermore, brand licenses to foreign partners allow firms to leverage brands for growth but also to protect them in international markets (Jayachandran et al. 2013). As argued above, resources allocated to international alliances for purposes of value appropriation should be relatively more effective at erecting barriers to competitors than those aimed at value creation, based on the tacit nature of the underlying processes associated with extracting profits from the market place (Krasnikov and Jayachandran 2008). By restricting competitors from imitating innovations and dissipating the firm's sales revenues, value appropriation alliances with international partners enhance firm growth. In addition, alliances with foreign partners are not as easily replicated by competitors relative to domestic ones (Kale and Singh 2009), effectively adding to the firm's tacit advantage in sustain its competitive advantage. Thus, based on expectations that the enhanced sustainability of competitive advantages from such alliances depends on competitors' abilities to imitate them (Morgan 2012), and the ability of international alliances focused

on value appropriation activities to be particularly effective in protecting a firm's positional advantage, I hypothesize:

H_1: A relative higher emphasis of value appropriation (higher SIAE) versus value creation via international partnerships increases firm growth.

While I argue that international alliances focused on value appropriation enhance firm growth by erecting barriers to restrict competitive forces, there exist counterarguments to those put forth in support of H_1 based on the notion that the inherent "foreignness" of such alliances brings additional benefits. Studies that have highlighted the relative performance advantage of SME on firm performance have focused solely on firm-internal activities (Josephson et al. 2016; Mizik and Jacobson 2003). However, building on the arguments above, regardless whether aimed at value creation or appropriation, activities with international alliances partners are more difficult to replicate (Suarez and Garcia-Canal 2003) and more valuable based on the effort required to manage these relationships (Menon and Varadarajan 1992). Value creation-oriented activities with foreign partners can enable access to technological knowledge not available domestically (Knight and Cavusgil 2004) or to new and innovative technologies and products (Lavie et al. 2011). In addition, technological knowledge acquired from multiple countries can improve firms' innovation capacity to a greater extent than knowledge acquired domestically, enhancing competitive advantage and firms' abilities to create value for customers (Kim 2013). The geographic scope inherent in these relationships enhances causal ambiguity about the foreign resources-performance link as well as the uniqueness of external relationships, both which allow it to serve as a barrier

for rivals in their attempt to compete away a firm's competitive advantage (Kim 2016). Based on these counterarguments, I offer a competing hypothesis to H_1 and view the issue of whether relative value appropriation or value creation emphasis via international alliances leads to higher firm growth as an empirical question.

H_2: A relative higher emphasis of value appropriation (higher SIAE) versus value creation via international partnerships decreases firm growth.

Strategy interactions and firm growth. To theoretically motivate the expected relationship between SME and SIAE on firm growth, I am positioning value creation and appropriation strategies as intangible resources (Srivastava, Shervani and Fahey 1998). Resources can be considered complements when the return to one increases in the presence of another (Milgrom and Roberts 1995). Alternatively, resources exhibit substitutability if the presence of one attenuates returns to another (King, Slotegraaf and Kesner 2008; Sigglekow 2002). Thus, in addition to the independent effects of SIAE and SME on firm growth, I expect interactions across these two modes to further impact firm growth.

Theoretically, the RBV suggests that multiple, dissimilar resources have complementary effects when their interactions increase firm performance (Kozlenkova, Samaha and Palmatier 2014). By combining multiple internal as well as alliance partner resources, firms increase their own resource heterogeneity by compensating for lacking internal resources with external ones, thereby making them more valuable (Barney 1991). When firms combine internal and external resources in a way that avoids redundancies by emphasizing one growth strategy internally and another growth strategy externally, they

effectively complement their strategic emphases and establish more heterogenous strategies. This heterogeneity can limit competitors' abilities to successfully imitate the advantage stemming from these resources and strategies (Morgan et al. 2009) with causal ambiguity about the link between resource combinations and performance preventing rivals from copying a firm's formula for success (Grewal and Slotegraaf 2007).

Consistent with these arguments, findings in the strategy literature demonstrate higher performance benefits for firms when a foreign partner's local knowledge is a complementary resource (Sirmon and Lane 2004). Thus, I hypothesize:

H_3: A relative higher (lower) SIAE coupled with a relative lower (higher) SME increases firm growth.

International alliances offer means of creating and leveraging firm value by focusing on innovation vs. marketing activities respectively and offer benefits above and beyond those accessible from domestic partner firms (Lavie and Miller 2008; Sirmon and Lane 2004). However, these outcomes are not guaranteed as international alliances entail unique challenges and suffer from persistently low success rates (Bello, Katsikeas and Robson 2010; Lavie and Miller 2008; Parkhe 1991). One of the central tenets of the RBV and related ROT is that firms orchestrate unique and inimitable resources in order to gain and sustain competitive advantage, and boundary conditions are therefore driven by the need to facilitate the accumulation and leveraging of such resources (Schilling and Steensma 2002). In particular, characteristics that influence a firm's ability to minimize or overcome uncertainties inherent in the transfer, absorption, and/or deployment of resources either between international alliance partners or in one of the partners' markets

can affect the firm's ability to benefit from these activities (Bello et al. 2010; Heide 1994).

Research related to the RBV and ROT has suggested that dyadic differences between partners in interfirm relationships represent important boundary conditions (Yang, Lin and Lin 2010). Thus, I introduce three critical alliance characteristics as moderators of the SIAE – firm growth relationship: 1) cultural distance between partners' markets, which reflects the potential level of organizational integration or fit between alliance partners (Yang et al. 2010) and can facilitate (or hinder) resource transfer and absorption; 2) the proportion of international alliances, which addresses the firm's overall experience managing the risks associated with the exchange of proprietary knowledge with international partners (Lee, Johnson and Grewal 2008); and 3) the proportion of joint ventures, which address the opportunities for monitoring and control among partners, a mechanism for safeguarding valuable resources exchanged as part of the alliance (Fang, Palmatier, Scheer and Li 2008). These factors along with arguments for their moderating influence are discussed next.

Moderating impact of cultural distance. Interfirm differences present both opportunities to gain access to resources and a need to control for risks introduced by such differences (Schilling and Steensma 2002). Differences in culture can influence a wide variety of factors that affect how well partners interact (Johnson and Tellis 2008) and understanding how cultural distance affects international marketing and innovation decisions is important when designing an effective competitive strategy (Tse, Lee, Vertinsky and Wehrung 1988). Challenges from cultural distance stem in part from the

lack of shared norms and values with can impair interfirm trust (Lavie and Miller 2008; Park and Ungson 1997). However, trust is essential to maximize the cooperation among and benefits from international alliance partners (Ireland, Hitt and Vaidyanath 2002). As such, high levels of cultural distance inhibit alliance partners' employees' abilities to interact and cooperate effectively, ultimately impeding the flow of information (Robson, Schlegelmilch and Bojkowszky 2012; Sirmon and Lane 2004). With greater cultural distance between the partners, value creation activities in particular may be less effective relative to value appropriation activities. Value creation activities require the transfer and integration of foreign knowledge with firm internal knowledge which can be hindered due to difficulties in understanding and managing knowledge gained from foreign partners (Bhagat, Kedia, Harveston and Triandis 2002; Kostova and Zaheer 1999). Related to this, Cheng and Yang (2017) find that greater cultural distance between firms involved in a merger or acquisition weakens the relationship between a firm's ability to undertake innovation and the overall performance of cross-border mergers and acquisitions. That is, firms aiming to accelerate performance via investments in innovation are hindered when their cross-border merger and acquisition partners are from culturally distant markets. Thus, I similarly expect relationships with more culturally distant partners to reduce the effectiveness of firms' value creation activities with international partners. More formally, I hypothesize:

> *H_4: Higher cultural distance attenuates the effectiveness of a relative higher emphasis of value creation (lower SIAE) vs. value appropriation via international alliances on firm growth.*

Moderating impact of the proportion of international alliances. With international partners, goal divergence and other differences that are potentially amplified in a cross-border context can reduce the benefits from international partnerships (Bello et al. 2010; Robson, Schlegelmilch and Bojkowszky 2012; Jiang et al. 2010). International partnerships entered for the purpose of value creation are inherently riskier than those entered for the purpose of value appropriation, as proprietary knowledge is exchanged and information asymmetries exist. However, over time and with more experience, firms are better equipped to retrieve and evaluate information about the past as well as current alliance relationships (Lee, Johnson and Grewal 2008). With a larger proportion of international alliances entered, firms develop international alliance expertise (Anand and Khanna 2000; Kalaignanam et al. 2007) and improve their capabilities in managing these international alliances effectively (Sivakumar, Roy, Zhu and Hanvanich 2011). I propose that a greater ratio of international alliances relative to domestic alliances can enable firms to enhance the effectiveness of resources allocated to strategic international alliances, and especially so when these alliances focus on value creation activities. That is, when the firm is experienced in managing relationships with foreign partners, it is better equipped to navigate challenges that might occur due to inherent goal differences as well as variation in management approaches, communication styles, etc. When the firm emphasizes value creation, its key focus is developing valuable resources via its foreign partnerships, which will increase the likelihood that such investments contribute to firm growth. More formally,

H_5: A higher international alliances ratio enhances the effectiveness of a relative higher emphasis of value creation (lower SIAE) vs. value appropriation via international alliances on firm growth.

Moderating impact of the proportion of joint ventures. Firms can choose international partnerships with different governance structures such as nonequity or equity alliances (Jiang et al. 2010). Joint ventures are equity-based strategic alliances in which the relationship between the partners is governed not only contractually, but also by oversight and ownership stakes in the joint venture (Sivakumar et al. 2011). These attributes contribute to strong learning effects from international joint ventures especially for those enter for value creation relative to value appropriation purposes (Anand and Khanna 2000). Furthermore, joint ventures offer increased opportunities for control and monitoring (Fang, Palmatier, Scheer and Li 2008; Kogut and Singh 1988), both of which are of heightened importance in value creation relative to value appropriation alliances as relatively more proprietary knowledge is exchanged in the former. Lastly, equity-based alliances increase the incentives of alliance partners to contribute novel resources such as proprietary technology. As such I expect the proportion of joint ventures to strengthen the relationship between value-creation international alliances in particular and firm growth. More formally, I hypothesize:

H_6: A higher joint venture percentage enhances the effectiveness of a relative higher emphasis of value creation (lower SIAE) vs. value appropriation via international alliances on firm growth.

Data

Data Sources

Following previous studies, I collected data on international marketing alliances from Thomson Reuters' Securities Data Company (SDC) Platinum™ Joint Ventures/Strategic Alliances database (Sivakumar et al. 2011; Swaminathan and Moorman 2009; Thomaz and Swaminathan 2015). This database provides a detailed description of alliances and partner characteristics and obtains information from public sources, including news/wire service reports, trade publications, and Securities and Exchange Commission filings (Swaminathan and Moorman 2009). I collected firm-level financials and industry financials from Standard & Poor's Compustat and computed cultural distance measures using index values taken from Hofstede's (1980) cultural dimensions.

Firm and Alliance Sample

To obtain a representative sample with meaningful measures for SIAE, I limited the sample to U.S. firms that had entered at least 15 international alliances during the time period of interest, which resulted in approximately 3500 alliances entered by 64 U.S. focal firms (Sivakumar et al. 2011). I focus on U.S. public firms to assure access to financial data and to control for home-market conditions. To enhance accuracy of information from alliance announcements before I coded strategic emphasis and other alliance-specific variables, I had two research assistants (RAs) triangulate each alliance announcement with a secondary data source. Specifically, for each alliance, RAs identified any corresponding announcements in Dow Jones' Factiva Global News

Database, validated the correctness of information from SDC, and captured one news report from Factiva which was used to supplement the information in the SDC announcement for coding. I eliminated alliances that did not fit the conceptualization of interfirm value appropriation or creation (such as strict manufacturing alliances without any value creation/appropriation activity) and those that could not be verified in Factiva. The final sample includes 1468 international marketing alliances from 45 U.S. firms representing eight industries (two-digit SIC) between 1990 – 2010, resulting in an unbalanced panel of 472 firm-year observations. This sample size is comparable to previous studies with U.S. focal firms and international strategic alliances (Sivakumar et al. 2011).

Measures

Dependent variable. An overview of the variables used in this study is provided in Table 1.2. To measure performance implications of resource allocation tradeoffs not only to firm-internal activities but also to those pursued via international alliance partners for the purpose of value creation as well as value appropriation, it is necessary to measure an outcomes that accrues over time, both directly and indirectly (Fang, Lee, Palmatier, and Guo 2016). One such outcome measure is firm growth, which has received surprisingly little attention in the marketing literature considering that it is a top priority for managers (Katsikeas et al. 2016; Morgan et al. 2009). I measure firm growth in terms of sales growth for it is often closely associated with marketing activities (Ambler 2003; Feng et al. 2017; Morgan et al. 2009) and define sales growth rate (SG_{it}) as

$$SG_{it} = \frac{S_{it+1} - S_{it}}{S_{it}} \quad \text{Eq. 1}$$

where S_{it} is sales revenues for firm i in year t.

Strategic international alliance emphasis. I borrow from established scale-development approaches (Churchill, Ford and Walter 1974) in establishing a rigorous and trustworthy process to develop a coding scheme that allows me to capture a firm's relative emphasis on value creation vs. value appropriation with international partner firms. I first compiled a list of potential items for the two construct components, value appropriation and value creation, from the literature (Wacker 2004). Next, I conducted semi-structured interviews with marketing managers with experience in international interfirm relationship management and appended the list of items. Each of these interviews lasted about 30 minutes and focused on exploring the reasons why firms enter in international alliances, resources allocated to these alliances, and the different functions responsible for managing these alliances. With these items in mind, I categorized key terms from international alliance announcements as either indicating a value appropriation emphasis, value creation emphasis or a combination of both as reflected in three overall strategies (see Appendix 1.A for details).

For internal validity, I asked five academic experts to categorize the same announcements and discussed any discrepancies by redefining my definitions of strategic goals. This process was repeated over several iterations until I felt confident that the coding system consistently captured the relative emphasis a firm placed on value appropriation relative to value creation activities with foreign partners. With this coding protocol established, myself and two MBA students coded the announcement text derived

from SDC and Factiva. Interrater reliability was 79% and disagreements were resolved by a fourth coder.

To operationalize the measure, I adapted precedents in the alliance literature for coding announcements and used the following categorical indicators (e.g. Lavie and Rosenkopf 2006): -1 for an emphasis on value creation; 0 for value creation and value appropriation simultaneously; and 1 for an emphasis on value appropriation, which resulted in an alliance-specific emphasis measure, $Alliance\ Emphasis\ (AE)$, ranging from -1 to 1. Since the analysis is at the firm-level, I calculated an average $SIAE$ score for each year by summing AE over all alliances for a given year and dividing it by the number of international alliances entered, IA_{it}, using Eq. (2).

$$SIAE_{it} = \frac{\sum AE_{it}}{IA_{it}} \qquad \text{Eq. 2}$$

By operationalizing this variable as a continuous measure, I assume that resource allocations toward value appropriation relationships inhibit simultaneous allocations to value creation relationships and vice versa (Lavie et al. 2011). A higher $SIAE_{it}$ score represents a relatively higher emphasis on value appropriation via international alliances.

Strategic marketing emphasis. Consistent with existing literature, I conceptualize the tradeoff of resource allocations between value appropriation and value creation on a single continuum, acknowledging the interdependence between these two activities that compete for the same scarce organizational resources (Gupta, Smith and Shalley 2006; Lavie and Rosenkopf 2006; Mizik and Jacobsen 2003). Following previous research (Mizik and Jacobsen 2003; 2007) I use resource allocation patterns to discern a firm's strategic emphasis (Han et al. 2017; Mizik and Jacobson 2003) and proxy firm $i's$ relative

value appropriation emphasis (i.e., strategic marketing emphasis (SME)) at time t as follows:

$$SME_{it} = \frac{(SGA_{it} - R\&D_{it}) - R\&D_{it}}{Assets_{it}} \quad \text{Eq. 3}$$

A higher score represents a firm with a relatively stronger commitment to using resources to appropriate value and a relative lower score a firm with a relatively weaker commitment to value appropriation. Selling, general and administrative expenses (SGA), which also include expenditures that are not strictly marketing related, are nevertheless a good proxy for the amount of resources the firm allocates toward value appropriation and include expenditures on marketing research, sales effort, trade expenses and other related activities (Dutta, Narasimhan and Rajiv 1999; Chakravarty and Grewal 2012; Mizik and Jacobson 2007).

International alliance ratio. To construct a measure of a firm's international alliance experience relative to all alliance experience, I used additional data from SDC Platinum™ to enumerate the number of alliances a firm entered in a given year with domestic partner firms. Specifically, I calculate a firm's international alliance ratio as a ratio of the cumulative number of international alliances firm i had established as of year t ($IA_{it}{}^{cum}$) relative to the total (international + domestic) number of alliances the firm had established as of year t ($IA_{it}{}^{cum} + DA_{it}{}^{cum}$):

$$IAR_{it} = \frac{IA_{it}{}^{cum}}{IA_{it}{}^{cum} + DA_{it}{}^{cum}} \quad \text{Eq. 4}$$

Joint venture percentage. I calculate the percentage of joint ventures of firm *i*, JVP_{it}, as the number of international alliances that are reported as joint ventures in a given year by firm i, JV_{it}, relative to all international alliances in the same year:

$$JVP_{it} = \frac{JV_{it}}{IA_{it}} \quad \text{Eq. 5}$$

Average cultural distance. Cultural distance was calculated following the method proposed by Kogut and Singh (1988) using Hofstede's (1980) cultural dimension scores. I focused on four scores that are most often used in the literature and, more importantly, available for all of the markets represented in my database. Specifically, I first calculated a cultural distance score for each country in my data set, which is adjusted by the variation in each of the dimensions (V_i).

$$Cultural\ distance_j = \frac{1}{4}\sum_{i=1}^{4}\left(\frac{I_{ij}-I_{iu}}{V_i}\right) \quad \text{Eq. 6}$$

where, I_i represents the cultural score of the $i'th$ dimension, j is a country indicator and u indicates the U.S. Next, for firms with more than one alliance per year, I calculated the arithmetic mean to obtain an average cultural distance ($AVECD_{it}$) score for each year.

Control variables. To control for the effects of differing circumstances affecting firms that engage in international strategic alliances, I include a set of firm- and industry-level control variables. Firm size is known to affect firm performance (Sivakumar et al. 2011) and previous research on alliances includes firm size as a control (Levitas and McFadyen 2009). I use Compustat data to proxy for firm size with total assets. To alleviate concerns of multi-collinearity between firm size and base measures of sales levels in my study, I regress total assets on sales and enter the residual from the auxiliary

regressions as the $SIZE$ variable (Sivakumar et al. 2011)[4]. This new $SIZE$ variable captures the effect of firm size on performance net of the effects of sales base levels. To control for firm profitability, I measured ROA as the ratio of the firm's earnings before extraordinary items in relation to its total assets (Rego, Billett and Morgan 2009).

Industry concentration has been found to influence both firm conduct and performance (Morgan and Rego 2009). I calculated the Hirschman-Herfindahl index (HHI), which is the sum of the squares of all firms' market shares in an industry for each of the industries in the dataset using Compustat data (Morgan and Rego 2009). The HHI ranges between 1 (more concentrated and, therefore, less competitive) and 0 (less concentrated and, therefore, more competitive). I measure industry growth by the total sales growth of all firms in the industry (Panagopoulos, Mullins and Avramidis 2018). For consistency with my dependent variable operationalization, I used a forward-looking industry growth ($INDGR$) measure:

$$INDG_{it} = \frac{INDG_{it+1} - INDG_{it}}{INDG_{it}} \qquad \text{Eq. 7}$$

Firms can also achieve growth and pursue value appropriation and creation strategies by acquiring strategic resources or business (Bahadir et al. 2009). To account for these types of inorganic growth strategies (Bahadir et al. 2009), I consulted SDC Platinum to obtain data for mergers and acquisitions and constructed an annual count variable for each firm's acquisition activity, ACQ.

[4] I also estimated models with a log-linearized measure of total assets and without sales as a base measure and the main findings remained largely unaffected.

Table 1.3 shows the descriptive statistics of all variables as well as their correlations.

Method

Empirical Model

To test the hypotheses, I take advantage of the panel data setting and control for unobservable time-invariant firm heterogeneity by estimating a fixed-effects model at the firm level. A modified Wald test for group-wise heteroskedasticity (Baum 2001) revealed that it was present in the model ($\chi^2 = 9026.74;\ p < 0.000$) and I consequently used cluster-adjusted robust standard errors at the firm level to account for heteroskedasticity and serial correlation (Jindal and McAlister 2015; Wooldridge 2002). I also include time fixed-effects to control for economic fluctuations during the time period of interest[5].

The complete model specified is:

$$SG_{it} = \beta_0 + \beta_1 SIAE_{it-1} + \beta_2 SME_{it-1} + \beta_3 (SIAE_{it-1} \times SME_{it-1}) + \beta_4 IAR_{it} + \beta_5 (SIAE_{it-1} \times IAR_{it}) + \beta_6 AVECD_{it} + \beta_7 (SIAE_{it-1} \times AVECD_{it}) + \beta_8 JVP_{it} + \beta_9 (SIAE_{it-1} \times JVP_{it}) + \beta_{10} ROA_{it} + \beta_{11} SIZE_{it} + \beta_{12} HHI_{it} + \beta_{13} INDG_{it} + \beta_{14} SALE_{it} + \beta_{15} ACQ_{it} + \beta_{16} \lambda + \beta_{17} CFSIAE_{it-1} + \beta_{18} CFSME_{it-1} + \delta_t Year_t + c_i + \epsilon_{it} \quad \text{Eq. 8}$$

[5] Due to the small sample size for hypothesis testing, I included three, time fixed-effects to account for time-trends and especially economic fluctuations associated with the dot-com bubble and bust; "prior" to capture the period before 1997, "during" to control for 1998-2001, and "post" for the period 2002-2010. I also ran analyses with a full set of yearly dummies with most of the findings being confirmed.

I used lagged values for my main strategy variables, SIAE and SME, since I am specifically interested in testing the effect of a firm's strategic choice (at time *t* - 1) on future sales growth. By lagging the variables that proxy a firm's strategic emphasis, I allow managerial decisions about resource allocations to materialize themselves over time. The model allows me to test the effect of $SIAE_{it-1}$ and SME_{it-1} on future sales growth as well as strategic complementarity ($SIAE_{it-1} \times SME_{it-1}$). I examine the boundary conditions of international alliance portfolio characteristics via two-way interactions with SIAE: ($SIAE_{it-1} \times IAR_{it}$; $SIAE_{it-1} \times AVECD_{it}$; $SIAE_{it-1} \times JVP_{it}$). Furthermore, $YEAR_t$ is a set of three, year-fixed effects, and c_i a firm-specific fixed-effect. As further elaborated in the next section, λ_{it} is the inverse Mills ratio based on estimates from the first-stage regression model, and $CFSIAE_{it-1}$ and $CFSME_{it-1}$, the control function residuals. To address reverse causality concerns such that expected sales growth can lead to strategic resource allocation decisions, I introduce a time lag by using lagged independent variables and a forward-looking dependent variable (Luo and Bhattacharya 2009).

Addressing Endogeneity

Considering that firms do not enter international alliances randomly but that this strategic decision might be driven by unobservable, firm-specific systematic differences that cause firms to self-select into international alliance activity, I need to account for self-selection bias in my estimation and cannot use ordinary least squares (Fang et al. 2016; Wiles et al. 2012). Furthermore, managers might allocate resources to value creation and appropriation activities (internally or via international alliances) in

anticipation of firm growth, which potentially correlates SME_{it-1} as well as $SIAE_{it-1}$ with the error term. Notwithstanding my inclusion of firm-level control variables and firm fixed effects, other omitted variables may affect the correlation of both regressors with the error term, potentially causing biased coefficients.

Control function approach. To address the second issue, I follow precedence in the marketing literature and use a control function approach (Petrin and Train 2010; Saboo, Sharma, Chakravarty and Kumar 2017) to model the potential endogeneity of a firm's resource allocation strategies. I first regress the potentially endogenous variables, SME_{it-1} and emphasis $SIAE_{it-1}$ on an exclusion variable, SME_IND_{it-1} and $SIAE_IND_{it-1}$ respectively, and a set of exogeneous variables. To be considered valid exclusion variables, these variables must be: (1) correlated with the endogenous variable and (2) uncorrelated with the error term (Han et al. 2017; Wooldridge 2010). I use the level of industry SME (SME_IND_{it-1}) to serve as an exclusion variable for SME (Han et al. 2017; Jindal and McAlister 2015) and industry SIAE ($SIAE_IND_{it-1}$) to serve as an exclusion variable for SIAE. One can argue that these variables reflect an industry norm that further influences managers in their resource allocation decisions while it is highly unlikely that they are correlated with a firm-specific error term (Han et al. 2017); thus, satisfying both conditions. Machine learning techniques that can handle large amounts of unstructured data were used on industry alliances to measure international alliance emphasis at the industry level with the data for deal texts for all the alliances in the sample industries from SDC Platinum. The Gradient Boost supervised classification

method performed best, and the manually coded alliances were used as the training dataset and industry alliances as the test data[6].

I estimate the following auxiliary models and use the predicted residuals as control functions in my main outcome equation (Eq. 8)

$$SME_{it-1} = \pi_0 + \pi_1 SME_IND_{i-1t} + \pi_2 ROA_{it} + \pi_3 SG_{it} + \pi_4 SIZE_{it} + \pi_5 HHI_{it} + \pi_6 INDG_{it} + \pi_7 \lambda + \pi_t Year_t + c_i + v_{it-1} \quad \text{Eq. 9}$$

$$SIAE_{it-1} = \gamma_0 + \gamma_1 SIAE_IND_{i-1t} + \gamma_2 ROA_{it} + \gamma_3 SG_{it} + \gamma_4 SIZE_{it} + \gamma_5 HHI_{it} + \gamma_6 INDG_{it} + \gamma_7 \lambda + \gamma_t Year_t + c_i + \eta_{it-1} \quad \text{Eq. 10}$$

Self-selection correction. Ideally, to attenuate concerns stemming from self-selection bias, I would create a set of all potential partners considered by the U.S. focal firm and then test whether firm characteristics influence partner selection and the tendency of entering international alliances (Swaminathan and Moorman 2009). Unfortunately, construction of such a data set, especially considering my focus on international partners, is not feasible. Instead, I use an approach proposed by Heckman (1979) to account for any systematic differences between firms that entered an international alliance and those that did not. To include counterfactuals in the estimation, I randomly selected up to two firms from each four-digit SIC in my sample within +/- 25% of sales of the focal firms (Fang et al. 2015). Next, using data from SDC Platinum, I

[6] A range of classifications approaches were explored, including Naïve Bayes, Support Vector Machines, Random Forest, and AdaBoost classifiers. Gradient Boost provided the highest accuracy.

counted the number of domestic and international alliances entered by these counterfactual firms. In the first stage, I regressed the probability of entering an international alliance on factors that likely affected a firm's decision regarding alliance formation. Consistent with previous research (Wiles, Morgan and Rego 2012), I applied a panel probit selection model to the full sample of 45 firms plus counterfactual firms and used the predicted values to calculate the inverse Mills ratio (λ), which was subsequently included as an additional regressor in the final regression equation (Eq. 8).

The value of the dependent variable in the probit model was 1 if a firm entered in at least one international marketing alliance during a specific year ($IAE_{it} = 1$) and 0 otherwise (see Equation (11)). As an exclusion variable (Wooldridge 2010), I used the 3-month treasury bill interest rate as firms tend to form more alliances during periods of economic expansion relative to contraction (Kalaignanam et al. 2007; Park et al. 2002).

$$\Pr(IAE_{it} = 1) = \delta_0 + \delta_1 SME_IND_{it-1} + \delta_2 SIAE_IND_{it-1} + \delta_3 ROA_{it} + \delta_4 SG_{it} + \delta_5 SIZE_{it} + \delta_6 HHI_{it} + \delta_7 INDG_{it} + \delta_8 CIAE_{it} + \delta_9 CDAE_{it} + \delta_{10} TREASURY_{it} + \delta_t Year_t + v_{it} \quad \text{Eq. 11}$$

Results

The results from the Heckman selection model (see Table 1.4) indicate that the 3-month treasury bill interest rate is a significant predictor ($\delta_{10} = 0.0864, p < 0.01$) of a firm's probability of selecting into an international alliance. Furthermore, the results from the two control functions (see Table 1.4) confirm that industry-level SME is positively associated with firm-level SME ($\pi_1 = 0.291, p < 0.01$) and industry-level SIAE with firm-level SIAE ($\gamma_1 = 0.574, p < 0.01$).

Hypotheses Tests

Table 1.5 contains the results of my empirical analysis. Model 1 shows the main effects of SME and SIAE and Model 2 the complete model. Using AIC and BIC statistics, I find that the subsequent model produces a better model fit.

Consistent with my prediction, I find support for H_2 (Model 1): a relatively lower emphasis of value appropriation via strategic international alliances enhance sales growth ($\beta_1 = -.248, p < 0.01$). Stated differently, firms with a relative higher value creation emphasis via international partnerships see higher future sales growth. Furthermore, based on results from Model 2 and in support of H_3, the interaction between the two strategy implementation modes, externally via international partners and internally, is significant ($\beta_3 = -.402, p < 0.05$). I visually depict the interaction in Figure 1.3, using a simple slopes analysis one standard deviation above and below the mean of both strategic variables.

Figure 1.3 shows that the negative association between SIAE and future sales growth (i.e., a relative higher focus on value appropriation externally leading to lower sales growth) is weaker when firms have a relative lower focus on value appropriation internally. That is, based on Figure 1.3, I expect firms with a relatively low SIAE (i.e., focus on value creation) to achieve higher sales growth if they also have a relative higher SME (i.e., focus on value appropriation internally). As I will discuss in the next section, I use a series of post hoc analyses to explore how the impact of SIAE on sales growth changes with different values of SME. As such I find support that resource allocations to strategies across different modes are not independent.

In terms of expected moderation effects on the strategic impact of international alliance emphasis on sales growth, I do not find evidence that higher cultural distance attenuates the effectiveness of international strategies and, therefore, no support for H_4. I do find support for H_5. That is, a higher proportion of international alliances positively moderates the impact of SIAE on sales growth ($\beta_5 = 0.131, p < 0.05$). Illustrating this result, Figure 1.4 shows firms with a very low emphasis on external value appropriation (i.e., very high relative value creation focus via strategic international alliances), see the effectiveness of their external strategies reduced as the proportion of international alliances increases. However, as firms change their resource allocations toward a relative value appropriation focus via their international alliances, they can enhance future sales growth resulting from these appropriation activities if they have relatively more partnerships with foreign than domestic firms.

In support of H_6, I find that the percentage of joint ventures in the firm's international alliance portfolio affects the impact of its external strategies on firm growth ($\beta_9 = -.098, p < 0.05$) (see Figure 1.5). The impact of a firm's SIAE on its sale growth depends on the percentage of joint ventures. I find that in general a larger percentage of joint ventures enhances the effectiveness of a firm's resource allocations to interfirm relationships with a relative value creation emphasis.

Post Hoc Analyses: Strategic Configurations and Complementarities

My results indicate that strategy configurations across two modes matter, but they do so only in certain combinations. As shown in Figure 1.6, for firms with an internal emphasis primarily on value appropriation (relatively more spending on marketing

activities vs. innovation activities), the impact of their strategic emphasis via international alliances on growth depends on these internal resource allocations. That is, if firms invest internally relatively more in appropriating value, it appears critical that decisions regarding how to strategically position international alliances be complemented with these internal activities. On the other hand, if firms invest internally in value creation activities, these activities do not appear to influence the effectiveness of the firm's international strategies.

Robustness Checks

Higher time lags. To assess the robustness of my result to a longer time lag, I repeated the analysis with both strategic choice variables ($SIAE$ and SME) lagged by two time periods. I attribute the lack of results to a substantial reduction in the sample size resulting from the construction of lagged variables.

No time lags. Despite the strong conceptual support that resource allocations to growth strategies need ample time to work their way through firm activities, I repeat the analysis with none of the strategic choice variables lagged. As expected, I did not find any significant results; however, the signs for the hypotheses remain largely consistent.

Confirming the underlying mechanism of SIAE on firm growth. I found support that firms' that emphasize value creation activities via their strategic international alliances see a positive impact on firm growth. Furthermore, I argued that the underlying mechanism that erects barriers to competitors stems from the foreignness inherent in these international partnerships which makes it more difficult for competitors to imitate and subsequently compete away the firm's positional advantage. To confirm this notion

of foreignness serving as an isolating mechanism, I coded all domestic value-creation and -appropriation alliances of the focal firms and constructed a *Domestic Alliance Emphasis (DAE)* measure analog to *SIAE.* Next, I regressed this measure on the DV and, in line with my theoretical prediction, did not find any support for lower *DAE* (relative emphasis on value creation) on firm growth ($\beta = 0.001, p < 0.93$).

Discussion

Scarcity makes understanding the effectiveness of resource allocations to different growth strategies, such as value creation and value appropriation, a necessity. Accessing or leveraging resources externally via international strategic alliances adds further complexity to such resource management concerns. Thus, I set out in this study to explore the performance implications of pursuing these different growth strategies both internally and via firms' international strategic alliances. While I did not formally hypothesize the effect of a relative emphasis on value appropriation internally on firm growth, I did find that if such emphasis is pursued via international partnerships it leads to lower firm growth. Stated differently, managers can enhance growth by allocating resources in a manner that reflects a focus on value creation activities via international alliances. However, based on my finding of a significant interaction between SME and SIAE, decisions regarding allocations to internal as well as interfirm activities should not be made independently, and can complement each other to enhance sales growth. That is, firms can achieve higher sales growth by complementing an external focus on value creation with and internal focus on value appropriation. Thus, I quantify the positive impact of focusing on creating value via international partnerships and appropriating

those sources of value by investing in marketing activities internally on sales growth. I further demonstrate the importance of the both the percentage of a firm's overall strategic alliance partners from foreign markets and the percentage of joint ventures in the international alliance portfolio. Next, I highlight important theoretical implications of these findings and offer guidance to managers in making such resource allocations in their efforts to enhance firm growth.

Theoretical Implications

I use a ROT framework to highlight the importance of managerial decision making on firm growth through achieving and sustaining competitive advantage (Sirmon et al. 2011). I add to this stream of research by finding supporting evidence that while structuring a resource portfolio via international alliances can lead to sales growth, this relationship depends on the firm's ability to simultaneously leverage existing resources via firm-internal activities. Thus, while resource orchestration posits that managerial decisions made in structuring and leveraging a resource portfolio are both important drivers of firm performance, I highlight the importance of coordinating these activities across strategic modes that are potentially managed in organizational silos.

I also extend marketing theory by adding to the scant marketing literature that evaluates the impact of resource tradeoffs to marketing strategies that focus on value creation versus value appropriation (Mizik and Jacobson 2003; Han et al. 2017). Specifically, I illustrate the impact of such tradeoffs on an important yet understudied indicator of firm performance, namely, sales growth (Katsikeas et al. 2016). While some studies have used resource allocations to marketing activities and innovation activities to

represent value appropriation and value creation strategies, respectively (Mizik and Jacobson 2003; Luo and Bhattacharya 2009), I introduce the notion of SIAE as an additional means of representing resource allocations to marketing and innovation activities via international interfirm relationships. Increased competition worldwide and ongoing globalization of markets have made international marketing decisions ever more important for firm growth and survival (Katsikeas et al. 2014). This new construct allows for a comprehensive conceptualization of a number of ways in which international alliances can add to firm growth such as access to new markets, new products, brands as well as knowledge and skills (Swaminathan and Moorman 2009). This seems consistent with the observations from one of my manager interviewees, who explained during the interview process that [the firm] uses international alliances to "primarily [to] identify trends and identify opportunities. And, generally, that would start with marketing teams."

While previous studies have found a significant effect of SME on firm value as measured in terms of financial market response variables (Edeling and Fisher 2016; Han et al. 2017; Mizik and Jacobson 2003), I did not formally hypothesize this relationship. However, I note that this study is situated in an international alliance context and therefore my sample is restricted to firms that also pursue value creation and/or appropriation via relationships with foreign firms, not only internally. Based on my finding of a significant interaction in resource allocations to these activities across two modes, one implication of this study is that performance outcomes based purely on internal allocations may depend on the extent to which such activities are also pursued via international alliances. Conceptually, as argued by Mizik and Jacobson (2003), the

information content of a firm's internal strategic emphasis may be insufficient if a large proportion of firm value appropriation or creation activities occur via such external partnerships.

Managerial Implications

As marketing managers are encouraged to produce growth, a measure of paramount interest to Wall Street (Bahadir et al. 2009), I offer guidance on how to allocate scarce resources to different growth strategies, namely, value creation and value appropriation. A demand-side view highlights the importance of and challenges inherent in novel value creation for customers in developing and maintaining competitive advantage and sustained growth (Adner and Zemsky 2006). It is no longer enough that firms identify buyer needs and develop a product that meets those needs; they must do so in a way that is superior to competitors' attempts (Wernerfelt 2014). Managers often have significant latitude in deciding between investments toward value creation versus value appropriation (King and Slotegraaf 2011). My research provides guidelines for managers on how to complement a value creation strategy that is pursued with international partners, with an internal focus on value appropriation.

Guidance on strategic configurations. Post hoc analyses comparing linear predictions of sales growth at a number of different levels of SIAE and SME show the importance of coordinating resource allocations to growth strategies internally and via international partners. As shown in Table 1.6 and discussed previously, sales growth is higher when managers allocate relatively more resources to value creation via international alliances while at the same time allocating relative more resources to value

appropriation, internally. I also show that this complementary effect is diminishing in lower levels of external value creation emphasis. This comparison enables me to quantify one potential manifestation of the impact of organizational silos by showing the increase in sales growth as strategies are coordinated to complement each other.

Some alliance literature suggests a separate alliance function to assure the success and survival of strategic alliance activities (Helfat et al. 2007; Kale et al. 2002). However, as I have shown empirically, if managers in charge of pursuing these strategies internally and those in charge of pursuing them with international partners do not coordinate these allocations accordingly, firm performance suffers. Especially when organizational functions compete for a firm's scarce resources, information and knowledge sharing across these functions are often inhibited (Luo, Slotegraaf and Pan 2006), which, as the results suggest, can have a significant impact on firm performance. And as one of the manager interviewees stated, "generally, marketing creates the idea, and we certainly work with legal, compliance, co-manufacturing, obviously sales, supply chain, I mean everybody touches it at one point."

Alliance portfolio characteristics. Based on the results, I also encourage managers to pay particular attention to international alliance portfolio characteristics. Using a simple slope analysis, the results show that firms that focus heavily on value creation with foreign partners (i.e., 1SD below the mean) can achieve sales growth of 25.6% with 18% of international alliances which drops to 24.5% when the number of international alliances increases to 63%. However, for firms with a relative focus on value appropriation via international alliances, this trend is actually reversed; by seeking

relatively more international partners, firms can increase sales growth by almost 3%. Lastly, I find that a higher percentage of joint ventures can enhance the effectiveness of value creation activities via international partners; however, this effect is diminishing as firms allocate relatively fewer resources to value creation activities in favor of focusing more on value appropriation with foreign partners. Furthermore, as the proportion of international alliances reaches more than 80 percent, the interaction becomes insignificant, indicating that any higher proportions of international alliances don't influence the effectiveness of international interfirm growth strategies on sales growth.

Limitations and Future Research Directions

This study has several limitations, which offer opportunities for future research. First, I used resource allocation patterns and coded alliance announcements to proxy for a firm's strategic emphasis to estimate its effect on sales growth. However, as advanced by the resource orchestration literature, resources are mainly inputs that must be bundled into capabilities which in turn generate measurable outcomes (Sirmon et al. 2011). As such, I recommend to further examine how these resource allocation patterns to value appropriation versus value creation internally as well as via interfirm relationships affect a firm's ability of improving its associated capabilities.

Secondly, I used a relatively small sample in this study and conducted regression analysis that revealed average effects. By potentially increasing not only the number of firms under study but also the number of industries, perhaps a classification of firms by industry and strategy implementation type (i.e. value appropriation (creation) internally

vs. externally) could further inform managerial decision making with respect to marketing investments.

Appendix 1.A

In developing the coding scheme, I used the following three strategies reflecting codes of $-1, 0, 1$, respectively.

Strategy A: The U.S. focal firm establishes the relationship with a foreign partner with the overall goal of value creation by developing a new product and/or process. More specifically, the U.S. focal firm establishes the relationship with the goal of accessing research and development capabilities, new technology, or superior knowledge to develop a new product and/or process.

Strategy B: The U.S. focal firm establishes the relationship with a foreign partner with the overall goals of value creation and value appropriation. More specifically, the U.S. focal firm establishes the relationship with the goal of accessing research and development capabilities, new technology, or superior knowledge and with the goal of extracting profits by leveraging its own products, brands, technology or knowledge, effectively extending the life-cycle of its existing capabilities.

Strategy C: The U.S. focal firm establishes the relationship with a foreign partner with the overall goal of value appropriation. More specifically, the U.S. focal firm establishes the relationship with the goal of extracting profits by leveraging its own products, brands, technology or knowledge, effectively extending the life-cycle of its existing capabilities.

Appendix 1.B

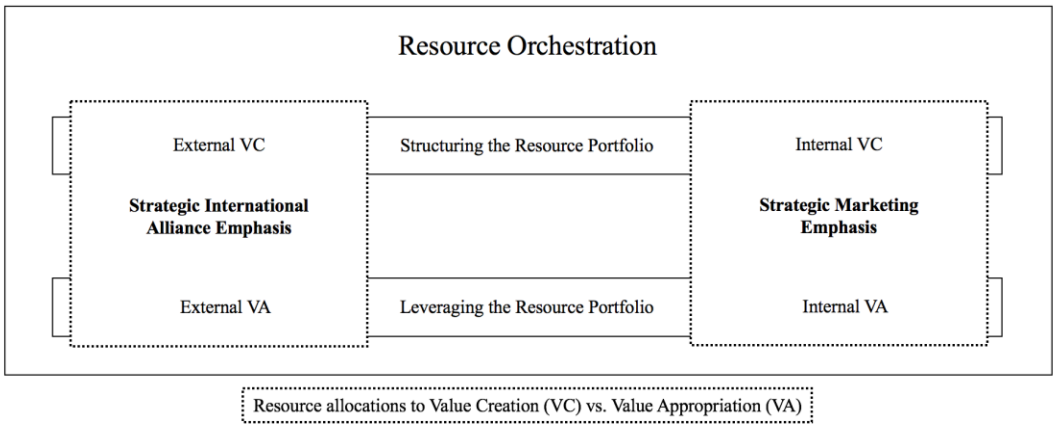


Figure 1.1 Resource Orchestration

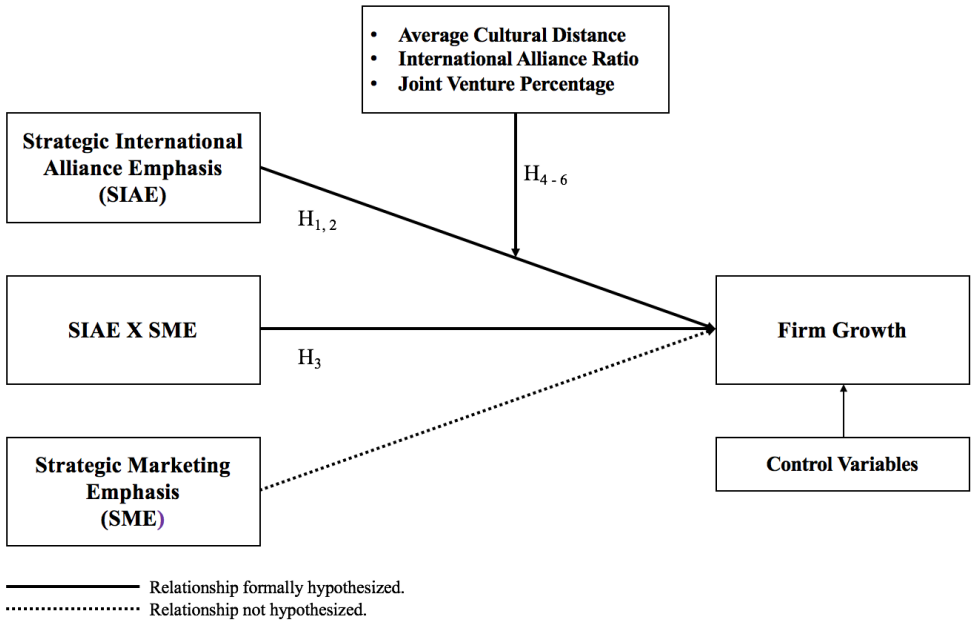


Figure 1.2 Conceptual Model

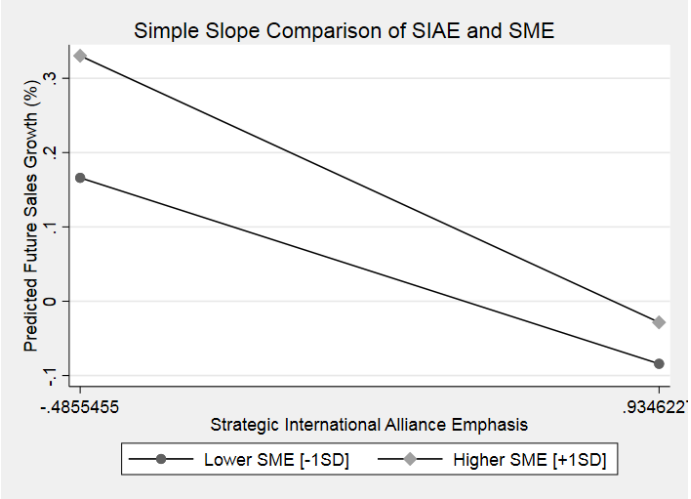


Figure 1.3 Strategic Configuration

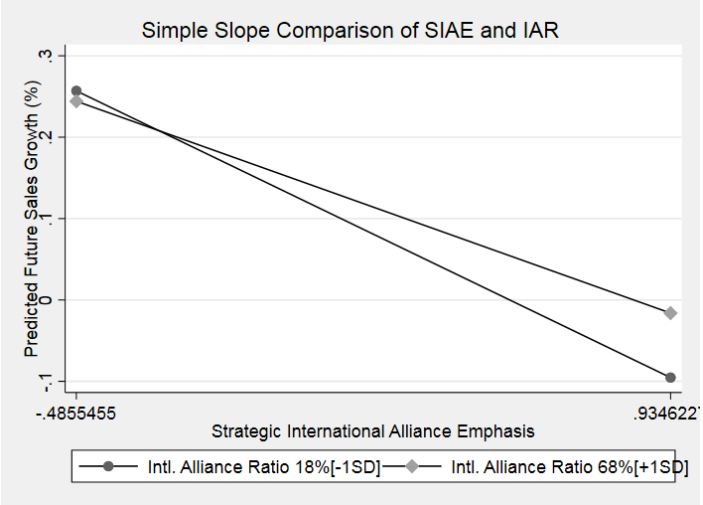


Figure 1.4 International Alliance Ratio

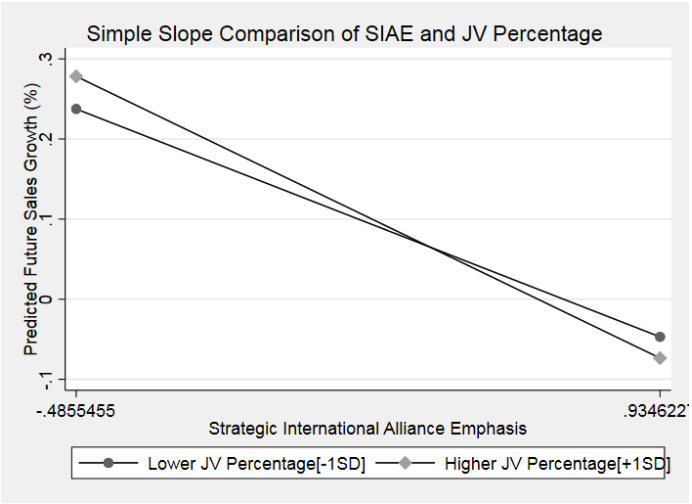


Figure 1.5 Joint Venture Percentage

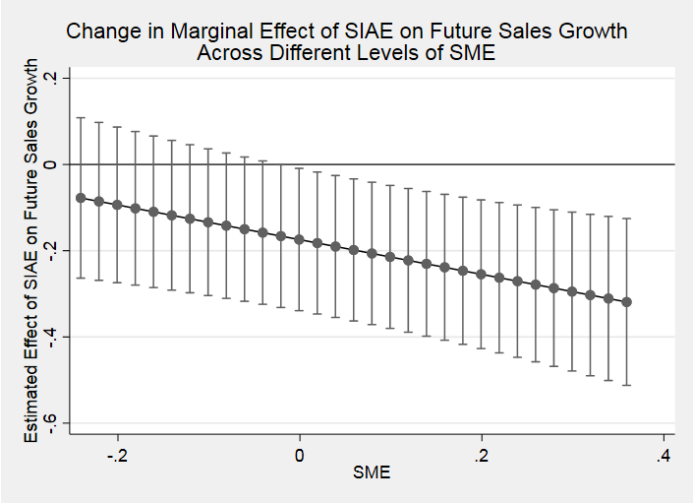


Figure 1.6 Diminishing Interaction Effect

Table 1.1 Relevant Literature Review

	Internal VA/VC (SME)	Interfirm VA/VC (SIAE)	Interaction	Boundary Conditions	Outcome Measure
This study	X	X	Strategic Emphasis	International Alliance Portfolio Characteristics	Sales Growth
Han, Mittal and Zhang (2017)	X			Demand Instability, Relative Performance	Firm Idiosyncratic Risk
Saboo, Chakravarty and Grewal (2016)	X[a]			SME, Strategic Alliances, Key Customer Relationships	IPO Outcomes
Josephson, Johnson and Mariadoss (2011)	X				Customer-Focused Marketing Capabilities
Mizik and Jacobson (2003)	X			Technological Environment	Abnormal Market Return
Wagner, Eggert and Lindemann (2010)		X		Information Exchange	Project Satisfaction
Feng, Morgan and Rego (2017)			Capabilities	Munificence, Competitive Dynamism	Sales Growth, Profit Growth
Morgan, Slotegraaf and Vorhies (2009)			Capabilities		Sales Growth, Margin Growth, Profit Growth
King, Slotegraaf and Kesner (2008)			Resources		Abnormal Market Return
Krasnikov and Jayachandran (2008)			Capabilities	Meta-Analysis	Efficiency Performance, Market Performance

[a] SME as moderator
SME= Strategic Marketing Emphasis; SIAE= Strategic International Alliance Emphasis; VA= Value Appropriation; VC= Value Creation

Table 1.2 Variables

Variable	Notation	Operationalization	Data Source	Exemplary Studies
Dependent Variables				
Sales Growth	SG_{it}	$SG_{it} = \frac{S_{it+1} - S_{it}}{S_{it}}$	COMPUSTAT	Morgan et al. 2009
Independent Variables				
Strategic International Alliance Emphasis	$SIAE_{it}$	$SIAE_{it} = \frac{\sum AE_{it}}{IA_{it}}$	SDC Platinum	New measure
Strategic Marketing Emphasis	SME_{it}	$SME_{it} = \frac{(SGA_{it} - R\&D_{it}) - R\&D_{it}}{Assets_{it}}$	COMPUSTAT	Mizik and Jacobson 2009
Average Cultural Distance	$AVECD_{it}$	$\frac{1}{4}\sum_{i=1}^{4}\left(\frac{I_{ij} - I_{iu}}{V_i}\right)$	Hofstede's website	Pangarkar 2003
International Alliance Ratio	IAR_{it}	$IAR_{it} = \frac{IA_{it^{cum}}}{IA_{it^{cum}} + DA_{it^{cum}}}$	SDC Platinum	New measure
Joint Venture Percentage	JVP_{it}	$JVP_{it} = \frac{JV_{it}}{IA_{it}}$	SDC Platinum	New measure
Control Variables				
Firm Size	$SIZE_{it}$	$Assets_{it}$	COMPUSTAT	Sivakumar et al. 2011
Industry Concentration	HHI_{it}	$HHI = \Sigma s_i^2$	COMPUSTAT	Morgan and Rego 2009
Return on Assets	ROA_{it}	$\frac{Net\ Income_{it}}{Assets_{it}}$	COMPUSTAT	Cui and O'Conner 2012
Industry Growth	$INDG_{it}$	$INDG_{it} = \frac{INDG_{it+1} - INDG_{it}}{INDG_{it}}$	COMPUSTAT	Panagopoulos, Mullins and Avramidis 2018
Mergers and Acquisitions	ACQ_{it}	Annual count of mergers and acquisitions	SDC Platinum	Bahadir et al. 2009
Variables to Alleviate Endogeneity Concerns				
Industry-Level Strategic Marketing Emphasis	SME_IND_{it-1}	$= \frac{(SGA_IND_{it} - R\&D_IND_{it}) - R\&D_IND_{it}}{Assets_IND_{it}}$	COMPUSTAT	Han et al. 2017
Industry-Level Strategic International Alliance Emphasis	$SIAE_IND_{it-1}$	Gradient Boost supervised classification method	SDC Platinum	New measure
Probability of Entering an International Alliance	Pr (IAE_{it})	=1 if firm entered at least 1 international alliance at any given year; =0 otherwise	SDC Platinum	Yeniyurt et al. 2009
Domestic Alliance Experience	DAE_{it}	Cumulative amount of domestic alliances entered	SDC Platinum	Sivakumar et al. 2011
International Alliance Experience	IAE_{it}	Cumulative amount of international alliances entered	SDC Platinum	Sivakumar et al. 2011
3-month Treasury Bill Interest Rate	$TREASURY_{it}$	3-month treasury bill interest rate	Federal Reserve Economic Data	Kalaignanam et al. 2007

Table 1.3 Descriptive Statistics and Correlations

		Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	SG_{it}	.109	.24077	1															
2	$SIAE_{it-1}$	.225	.71008	0.167	1														
3	$SIAE_IND_{it-1}$	.532	.1977	-0.112	0.119	1													
4	SME_{it-1}	.099	.094923	-0.008	0.109	-0.065	1												
5	SME_IND_{it-1}	.190	.07463	0.135	-0.008	-0.385	0.220	1											
6	IAR_{it}	.434	.24673	-0.081	0.125	0.068	-0.082	-0.346	1										
7	$AVECD_{it}$	1.89	1.0105	-0.050	0.189	0.080	0.024	-0.153	0.196	1									
8	JVP_{it}	.171	.31134	-0.066	0.074	-0.001	0.065	-0.148	0.279	0.199	1								
9	$SALE_{it}$	23173.4	30857.62	-0.149	-0.092	0.295	-0.026	-0.241	0.025	0.020	0.087	1							
10	$SIZE_{it}$	25551.3	31582.53	-0.146	-0.156	0.253	-0.091	-0.155	-0.077	-0.053	0.036	0.918	1						
11	ROA_{it}	.062	.10616	-0.039	-0.077	-0.019	0.026	0.061	-0.196	-0.030	-0.029	0.096	0.136	1					
12	$INDG_{it}$	.054	.09278	0.146	0.108	0.202	-0.072	-0.008	-0.092	-0.004	-0.032	0.113	0.184	-0.001	1				
13	HHI_{it}	.269	.2302	-0.138	0.079	0.100	0.034	-0.119	0.154	0.081	0.135	0.037	0.008	-0.112	-0.057	1			
14	$TREASURY_{it}$	4.136	1.7092	-0.016	-0.003	-0.257	0.122	0.184	0.090	0.026	0.117	-0.198	-0.310	0.013	-0.236	0.010	1		
15	$CIAE_{it}$	23.74	27.230	-0.139	-0.082	0.184	-0.052	0.049	-0.122	-0.044	-0.159	0.444	0.545	0.101	0.260	-0.016	-0.307	1	
16	$CDAE_{it}$	51.46	76.180	-0.085	-0.029	0.130	0.038	0.219	-0.430	-0.098	-0.197	0.314	0.456	0.143	0.256	-0.075	-0.244	0.859	1
17	ACQ_{it}	2.89	4.244	-0.021	-0.056	0.152	-0.090	0.085	-0.196	-0.094	-0.126	0.183	0.273	0.221	0.141	-0.001	-0.005	0.431	0.452

Coefficients with absolute values greater than 0.096 are statistically significant at $p<0.01$

Table 1.4 Auxiliary Regression Results

Regressors	*Heckman Selection Model*[a]	*SIAE Control Function*[a]	*SME Control Function*[a]
SME_IND_{it-1}	-0.459 (1.008)		0.291 *** (0.106)
$SIAE_IND_{it-1}$	-0.452** (0.210)	0.574*** (0.187)	
HHI_{it}	0.031 (0.345)	-0.098 (0.365)	-0.0601 (0.043)
$INDGR_{it}$	-0.791** (0.332)	0.515 (0.372)	-0.0290 (0.025)
ROA_{it}	0.094 (0.190)	0.425 (0.403)	0.0175 (0.015)
$CIAE_{it}$	0.017** (0.008)		
$CDAE_{it}$	-0.001 (0.003)		
$SIZE_{it}$	0.0376 (0.054)	-0.052 (0.037)	-0.0118*** (0.003)
$SALE_{it}$	0.0852 (0.076)	0.013 (0.045)	0.003 (0.003)
$TREASURY_{it}$	0.086*** (0.026)		
λ_{it}		0.003 (0.199)	0.035 (0.023)
$CONS_{it}$	-0.692*** (0.266)	-0.126 (0.252)	0.035 (0.034)
FIRM FE		YES	YES
TIME FE	YES	YES	YES
N	2411	450	2192
* p<0.10 ** p<0.05 *** p<0.01. Two-tailed significance tests are used.			
[a] Unstandardized coefficients with robust standard errors in parentheses.			

Table 1.5 Hypotheses Testing Results

Regressors	*Model 1: Main Effects*	*Model 2: Full Model*
$SIAE_{it-1}$	-0.248*** (.087)	-0.200** (.085)
SME_{it-1}	0.282 (.834)	0.670 (.945)
$SIAE_{it-1}$x SME_{it-1}		-0.402** (.160)
IAR_{it}		0.039 (.179)
$SIAE_{it-1}$x IAR_{it}		0.131** (.050)
$AVECD_{it}$		0.004 (.007)
$SIAE_{it-1}$x $AVECD_{it}$		-0.009 (.011)
JVP_{it}		0.037 (.044)
$SIAE_{it-1}$x JVP_{it}		-0.098** (.047)
ROA_{it}	0.241 (.265)	0.222 (.228)
$SIZE_{it}$	-0.004 (.013)	0.005 (.031)
HHI_{it}	-0.186 (.304)	-0.429 (.292)
$INDGR_{it}$	0.373*** (.114)	0.444*** (.114)
$SALE_{it}$	0.005 (.026)	-0.128* (.071)
λ_{it}	0.207* (.110)	0.046 (.102)
$CFSIAE_{it-1}$	0.258*** (.089)	0.207** (.086)
$CFSME_{it-1}$	-0.442 (.809)	-0.663 (.889)
AQC_{it}	-0.002 (.001)	-0.003* (.001)
CONS	-0.127 (.111)	0.070 (.147)
Firm FE	Yes	Yes
Time FE	Yes	Yes
Observations	438	316
R-squared within	12.3%	26.9%

* p<0.10 ** p<0.05 *** p<0.01. Two-tailed significance tests are used.
Unstandardized coefficients with robust standard errors in parentheses.

Table 1.6 Strategic Combinations and Sales Growth Predictions

Emphasis on Value Creation with Strategic International Alliance (Very Low SIAE; -1.5SD)	
SME	**Sales Growth**
-0.5 SD	27.65
mean	32.43
+0.5 SD	37.21
+1 SD	42.00
+1.5 SD	46.78
Emphasis on Value Creation with Strategic International Alliance (Lower SIAE; -1SD)	
SME	**Sales Growth**
-0.5 SD	20.71
mean	24.82
+0.5 SD	28.93
+1 SD	33.03
+1.5 SD	37.14
Emphasis on Value Creation with Strategic International Alliance (Low SIAE; -0.5SD)	
SME	**Sales Growth**
-0.5 SD	13.78
mean	17.21
+0.5 SD	20.64
+1 SD	24.06
+1.5 SD	27.49
Emphasis on Value Creation and Appropriation with Strategic International Alliance (Average SIAE)	
SME	**Sales Growth**
-0.5 SD	insignificant
mean	9.60
+0.5 SD	12.35
+1 SD	insignificant
+1.5 SD	Insignificant
Values lower than -.05SD from mean of SME are not included since the interaction is not significant in that range.	

CHAPTER II -
INVESTIGATING SPILLOVER EFFECTS ACROSS BRAND EQUITY AND CUSTOMER SATISFACTION: GUIDANCE FOR BALANCING MARKETING RESOURCE ALLOCATIONS

Abstract

Brand equity and customer satisfaction are both intangible marketing assets that require a substantial amount of long-term investments whose returns are not fully known or predictable. I investigate potential spillover effects of investments into one marketing assets to the outcome of the other. Using a novel measure of investments in market-based assets that captures outlays not included in traditionally used measures such as R&D and advertising, I find empirical support that customer satisfaction investments can indeed enhance brand equity perceptions. By quantifying these spillovers, I highlight the importance of coordinating marketing resource allocations across functional units within firms.

Introduction

Brand equity and customer satisfaction are central constructs in marketing theory and practice (Rego, Morgan and Fornell 2012; Datta, Ailawadi and van Heerde 2017). Firms desire to manage both of these intangible market-based assets simultaneously and to explore potential synergies to improve customers' attitudes and behaviors for sustainable competitive advantage (Ambler, Bhattacharya, Edell, Keller, Lemon and Mittal 2002; Kaplan and Norton 2000). However, these efforts are often managed separately within different firm functions (Aaker 2008; Hanssens and Pauwels 2016; Keiningham, Aksoy, Perkins-Munn and Vavra 2005), with one function making decisions regarding investments in improving customer satisfaction, e.g., new technology or training and quality improvements (Giebelhausen, Robinson, Sirianni and Brady 2014; Mithas, Krishnan and Fornell 2005), and a separate function deciding on resources

allocated to activities aimed at managing brand equity perceptions, e.g., corporate communications, advertising and promotions (Keller 2009). Indeed, managers responsible for managing and growing these intangible marketing assets often vie for limited resources to implement competing strategic marketing initiatives (Rust, Lemon and Zeithaml 2004).

Given the challenges in balancing investments across these market-based assets, and based on evidence that both these assets affect a number of firm performance measures (for a review, see Srinivasan and Hanssens 2009), it seems pertinent to understand how investments in one can potentially influence performance of the other (Kumar, Lemon and Parasuraman 2006). For example, as a firm's brand image declines or improves, customers likely perceive their satisfaction with consumption experiences as following similar trends, consistent with the notion that, "if *brand* managers win the hearts and minds of the customer, *customer* managers have an easier time retaining…customers" (Stahl, Heitmann, Lehmann and Neslin 2012; p.44; emphasis added). Alternatively, actual consumption experiences may impact brand assets such that improvements in customer satisfaction can drive positive brand perceptions. Surprisingly, very little is known about the potential interplay in the outcomes of these critical firm investments.

Brand managers leverage a number of tactical options to create familiarity as well as favorable, strong and unique brand association in consumers' minds (Keller 1993). While the particular tactics used to create brand associations can vary, the key for brand managers is that these tactics evoke brand associations that are consistent with the

specific attributes and benefits that consumers seek (Keller 1993; Park, Jaworski, and MacInnis 1986). Meeting customer needs and wants is a key antecedent of customer satisfaction (Fornell, Johnson, Anderson, Cha and Bryant 1996), and a number of inputs to customer satisfaction, such as advertising expenses and selling, administrative and general expenses (Mittal, Anderson, Sayrak and Tadikamalla 2005) have also been found to be correlated with brand equity measures (Fischer and Himme 2017; Gielens, Geyskens, Deleersnyder and Nohe 2018). These conceptual and empirical connections suggest that strengthening brand perceptions can lead to stronger customer relationships and vice versa, thereby creating spillovers (Ambler et al. 2002).

Against this backdrop of the importance of brand equity and customer satisfaction, their interrelatedness, and limited empirical work on the potential spillover effects of investments in one to the performance of the other, this article answers two primary research questions.

RQ1. Are there investment spillover benefits from brand equity investments to perceived customer satisfaction or from customer satisfaction investments to brand equity outcomes?

RQ2: How might quantifying these spillovers enable firms to improve the effectiveness of their marketing investments in both customer satisfaction and brand equity?

By examining potential spillover benefits from intangible marketing investments and their implications for marketing investment efficiencies, this study contributes to the extant literature in three specific ways. First, I develop and validate a novel measure of

intangible investments in brand equity and customer satisfaction. Certain types of intangible marketing investments, such as research and development (R&D) and advertising, are explicitly reported on firms' balance sheets (Banker, Huang and Natarajan 2011; Enache and Srivastava 2017). Others are commingled with operating expenses and reported under selling, general, and administrative (SG&A) expenses, for example, employee training costs (Banker et al. 2011). Of those outlays commingled with SG&A, some are allocated to support current operations and are therefore associated with current revenues, while others are associated with future earnings, thus representing investments (Banker et al. 2011; Enache and Srivastava 2017). Following Enache and Srivastava's (2017) approach, I first calculate the core portion of SG&A by subtracting R&D and advertising expenditures from it. Next, I separate this core SG&A portion into two sub-portions: 1) a share that produces current benefits by supporting current operations; and 2) an investment share that is intended to generate future benefits. The goal of identifying these two different portions is to isolate the investment portion of SG&A for further analysis to determine spillover effects. Using a variance partitioning model, I allocate a portion of the investment share to brand equity investments and another to customer satisfaction investments.

Second, using these novel intangible investment proxies, I measure potential spillover benefits of one type of investment (e.g., brand equity investment) on the improvement in the outcomes of the other (e.g., customer satisfaction) and vice versa. As such, my findings can help managers to optimize investments in branding and customer

relationship management (Kumar et al. 2006) as well as improve the effectiveness of these intangible marketing asset investments.

Third, by demonstrating implications for resource allocation effectiveness, I offer theoretical support of different marketing capabilities and the importance of integrating these cross-functionally. Cross-functional marketing capabilities are characterized by drawing together numerous specialized marketing capabilities such as product management and marketing communications management. They produce market-based assets such as brand equity and customer satisfaction by facilitating knowledge and resource integration across different functions to achieve strategic goals (Morgan, Slotegraaf and Vorhies 2009; Morgan 2012). As such, these cross-functional marketing capabilities can reduce marketing resource misallocations and enhance investment effectiveness, both which are of heightened importance given the increasing complexity of the marketing discipline as evident by more sharply focused subdisciplines (Olson, Slater and Hult 2005).

Conceptual Framework

Brand equity and customer satisfaction, both intangible marketing assets, are created via brand management and customer relationship capabilities, respectively. Brand management capabilities guide firms in creating brand equity with processes and routines used to develop, maintain, and leverage a firm's brand assets (Morgan et al. 2009; Morgan 2012). Similarly, customer relationship capabilities guide firms in building customer satisfaction, an important measure of the quality of a firm's relationship with its customers (Gruca and Rego 2005), with processes and routines used to establish,

maintain, and leverage relationships with customers (Morgan et al. 2009). Both of these cross-functional marketing capabilities involve the integration of specialized marketing capabilities that combine and transform resources via tactical marketing program-related processes (Vorhies and Morgan 2003; Vorhies and Morgan 2005). While the marketing capabilities literature clearly highlights the importance of coordinating and integrating knowledge and resources within an organization, strategic resource allocation decisions are often made in isolation across different functions within firms (Aaker 2008; Keiningham et al. 2005).

However, the interdependency among these cross-functional capabilities suggests that managers should not consider these individual marketing capabilities and their associated intangible assets as separate investment options (Vorhies and Morgan 2005). Rather, interfunctional coordination may be required to assure that investments in brand equity and customer satisfaction, both of which are built over time, pay off (Feng, Morgan and Rego 2015). Thus, quantifying the resource allocations to different cross-functional capabilities and assessing their effectiveness in building market-based assets by measuring potential spillover benefits is the main focus of this study.

Brand Equity

Brand equity is the marketing-based value added to a product or service by its association with a brand name and/or symbol in comparison to a base product (Keller 1993; Srinivasan, Park and Chang 2005). While there is an agreement across researchers regarding the definition of brand equity, there are more divergent views regarding the methods to measure it, the perspectives from which to study it, as well as the antecedents

and ultimately dimensions of it (Ailawadi, Lehmann and Neslin 2003). Broadly speaking, brand equity has been conceptualized either as an attitudinal construct based on customers' mind-sets, or perception of the brand, or a behavioral measure based on product-market or financial-market outcomes such as revenue-premiums or stock market returns (Ailawadi et al. 2003; Datta et al. 2017; Rego, Billett and Morgan 2009; Sriram, Balachander and Kalwani 2007). In this study, I focus on an attitudinal measure, or the value consumers derive from a brand name (Sriram et al. 2007), for three reasons. First, since I am especially interested in examining spillover effects across customer satisfaction and brand equity outcomes, and since customer satisfaction is measured as a customer mind-set metric, I also use a customer mind-set metric to measure brand equity to ensure consistency in our conceptual framework and empirical specifications. Second, customer mind-set metrics have good diagnostic ability in that they can signal downturns or improvements in the brand's value and allow me to predict a brand's future potential based on consumers' perceptions (Ailawadi et al. 2003) driven by intangible investments. Lastly, the value of customer perceptions is demonstrated by consistent findings in the literature regarding their influence on consumers' behaviors such as purchasing frequency and word-of-mouth, all which are of paramount interest to firms (Anderson, Fornell and Lehmann 1994; Bolton, Lemon and Verhoef 2004).

The marketing literature provides empirical evidence linking brand equity to superior firm performance (Ailawadi et al. 2003; Goldfarb, Lu and Moorthy 2009) and market valuation (Madden, Fehle and Fournier 2006; Rego et al. 2009). Not only do firms typically invest substantial resources over many years to build and maintain brand

equity (Datta et al. 2017; Madden et al. 2006; Rego et al. 2009), many have implemented specific managerial positions to monitor it, detect trends over time, and approve marketing tactics to enhance it (Aaker 1996; Srinivasan et al. 2005). However, with returns to investments in intangible marketing assets such as brands often being substantially delayed, expenditures to build, manage and grow brand equity should be considered long-term investments (Malshe and Agarwal 2015; Srinivasan and Hanssens 2009). Research offers little direction regarding such specific brand-building investments aside from advertising expenditures (Fischer and Himme 2017; Srinivasan, Vanhuele and Pauwels 2010; de Vries, Gensler and Leeflang 2017) and R&D and related new product innovation activities (Ailawadi et al. 2003; Sriram et al. 2007).

Customer Satisfaction

A number of customer feedback metrics such as measures of overall satisfaction, behavioral loyalty intentions, and actual loyalty behaviors are used by marketing managers to set performance goals and monitor firm performance (Morgan, Anderson and Mittal 2005; Morgan and Rego 2006). Among these, average customer satisfaction has been shown to have the greatest predictive power (Morgan and Rego 2006) and has been conceptualized as both a function of quality and value as well as the outcome of matching customers' expectations regarding these attributes (Fornell et al. 1996). The marketing literature has established that customer satisfaction has significant implications for the economic performance of firms (Bolton et al. 2004) by increasing loyalty, decreasing complaining behavior, reducing price-sensitivity, and insulating the firm's competitive advantage from competitors' actions (Anderson et al. 1994).

While a number of inputs are theoretically linked to customer satisfaction, data availability limitations have resulted in few empirical studies examining the relationship between customer-satisfaction investments and outcomes (Mittal et al. 2005). Some studies that have explored the effect of specific investments on customer satisfaction have used advertising, cost-of-goods sold, R&D expenses and number of employees as an investment proxy (Malshe and Agarwal 2015; Mittal et al. 2005). Others consider indirect predictors such as customer relationship management applications (Mithas et al. 2005), and marketing research and quality improvement tools (Simester, Hauser, Wernerfelt and Rust 2000). This study aims to advance research on investments in customer satisfaction by empirically developing a measure of such investments, which are typically comingled with SG&A expenditures and furthermore evaluating potential spillover effects of these investments to related outcomes.

Research Design

Data

To examine spillover effects of intangible investments and their effectiveness implications, I use Harris Interactive's EquiTrend database as my starting sampling frame (Fischer and Himme 2017). This is an appropriate sampling fame since it collects data from more than 20,000 U.S. consumers on their perceptions of more than 1,000 large brands across 35 categories. I also use YouGov's database, which is based on a large, representative panel of U.S. consumers. It measures satisfaction mind-set metrics for over 1,200 brands across 43 categories. By intersecting these two databases I obtain 336 overlapping brands. To clearly attribute specific investments to only one brand, and thus

ensure the most conservative test of proposed spillover effects on brand equity and customer satisfaction, I restrict the sample to firms that use primarily a monolithic branding strategy (i.e., a leading visibility of the corporate brand) (Berens, van Riel and van Bruggen 2005). After obtaining complete financial data I arrived at a final sample of 45 firms for a total of n=1162 firm-quarter observations. I capture all measures on a quarterly basis in order to align them with corporate financial reporting cycles. To develop a proxy for investments in brand equity and customer satisfaction I use firm financials from Compustat and quality and value measures from YouGov as described in Table 2.1 (all tables and figures are in Appendix 2.B). By focusing on monolithic brands, I can make certain that investments I intend to measure are indeed directed towards the brand/product upon which I base the estimations. In addition, by using data from multiple sources for different constructs, I overcome the troublesome issue of common methods bias (Grewal, Chandrashekaran and Citrin 2010).

Dependent Variables

Brand Equity. To operationalize brand equity, I adopt a consumer-based perspective that captures consumers' brand beliefs and attitudes which affect purchase behavior (Keller 1993; Rego et al. 2009). The measure from EquiTrend is a latent variable scaled to a 0–100 index and is estimated using the following four individual-level consumer variables based on the major aspects of Keller's (1993) conceptualization of consumer-based brand equity (CBBE) (Rego et al. 2009): familiarity, which is an indicator of consumers' brand awareness; perceived quality and purchase intentions, both indicators of the strength of consumers' favorable brand associations; and distinctiveness,

which captures consumers' unique associations with the brand in their minds (Keller 1993; Rego et al. 2009).

Customer Satisfaction. To operationalize customer satisfaction, I use a consumer-based measure that captures consumers' satisfaction with their consumption experiences with a particular brand. I use a single variable measure from YouGov's database that is based on customers' overall satisfaction with a particular service or product and scaled between 0-100.

Brand Equity and Customer Satisfaction Investments

Managers not only need to consider in which marketing asset to invest (Vorhies and Morgan 2005) but also the trade-off between current and future benefits or short- and long-term business needs (Grewal et al. 2010; Morgan, Whitler, Feng and Chari 2018). I aim to develop a measure that captures the portion of outlays devoted toward achieving future benefits since both brand equity and customer satisfaction are considered relational-based intangible assets that depend on long-term relational bonds between a firm and its customers (Ailawadi et al. 2003; Srivastava, Shervani and Fahey 1998). As such, marketing outlays that are expensed within the current accounting period but are indeed committed to developing long-term benefits such as brand equity and customer satisfaction (e.g., brand development and employee training costs) relative to short-term benefits (e.g., sales commission) are of interest in my model (Banker et al. 2011).

SG&A has been used to proxy a firm's total marketing spending and includes items such as R&D, advertising, sales force costs, market research and promotional spending (Dutta, Narasimhan and Rajiv 1999; Mizik and Jacobson 2007). Although not

all expenditures included in SG&A are marketing related (Mizik and Jacobson 2007), marketing-related outlays represent the largest cost entry for many knowledge-intensive firms (e.g., Merck and International Business Machines); however, SG&A as reported on financial statements offers little detail on its constituent items other than R&D and advertising (Enache and Srivastava 2017). While positive effects of advertising and R&D on brand equity and customer satisfaction have been established empirically and argued based on theory (Ailawadi et al. 2003; Mittal et al. 2005; Srivastava et al. 1998), they represent a small proportion of intangible investments relative to SG&A. Using 121,445 firm-year observations over a 35-year time period, Banker et al. (2011) find that the ratio of what they call "Other SG&A" (or core SG&A) to total assets is 27%; R&D to total assets is 3%; and advertising to total assets is 2%. These numbers highlight the appropriateness of using SG&A as the basis for the investment measure development. Furthermore, the use of SG&A allows me to capture allocations to different activities across different functional units within firms, consistent with my theoretical argument regarding the importance of managing resource allocations to cross-functional marketing capabilities such as those leading to brand equity and customer satisfaction (Morgan 2012).

Despite empirical support for SG&A's leading role in the category of intangible investments (Banker et al. 2011; Enache and Srivastava 2017), generally accepted accounting principles require SG&A expenditures to be expensed fully during the period in which cash is spent (Banker et al. 2011), effectively making them part of operating costs. Similarly, R&D expenditures have to be expensed in the current period, since U.S.

accounting standards associate uncertain future returns with R&D spending (Kothari, Laguerre and Leone 2002).[7] As such, R&D expenditures as well as SG&A expenditures are effectively treated as costs and implicitly assumed to generate current benefits only, despite empirical evidence of their effect on future earnings (Chan, Faff, Gharghori and Ho 2007; Enache and Srivastava 2017). In contrast, capital expenditures are treated as investments and can be spread over future years in which they are expected to produce future benefits and are still one of the largest categories of operating investments (Enache and Srivastava 2017). With accounting standards limiting the reporting of specific intangible investment figures, I set forth to measure the amount of comingled intangible marketing investments at the firm level. In other words, I aimed to measure and quantify potential spillover effects of marketing investments aside from R&D and advertising.

Maintenance and Investment Core SG&A. To separate investments in intangibles, or the portion devoted to generating *future* benefits, from maintenance outlays, or the portion of core SG&A devoted to *current* benefits, I subscribe to the argument that outlays allocated toward current operations vary with current revenues (Enache and Srivastava 2017). To approximate the predicted value of the maintenance component of SG&A, I begin by subtracting R&D and advertising expenditures from SG&A to obtain what I refer to, as $CoreSG\&A$ (see Figure 2.1).

[7] Paragraph 12 in the Statement of Financial Accounting Standards No. 2 states that ‘‘All research and development costs encompassed by this Statement shall be charged to expense when incurred’’ (Chan, Faff, Gharghori and Ho 2007).

Next, I estimate the maintenance component of $CoreSG\&A$ for each firm with the following equation:

$$\widehat{MaintenanceCoreSG\&A}_{i,t} = \hat{\beta}_{1,Ind,t} Revenues_{i,t}. \quad \text{Eq.1}$$

The industry-specific revenue coefficients, $\hat{\beta}_{1,Ind,t}$, are obtained from Enache and Srivastava's (2017) study (see Appendix A). Lastly, I calculate the portion of $CoreSG\&A$ that represents investments in long-term benefits on a firm-quarter basis by subtracting the estimated maintenance portion from $CoreSG\&A$:

$$\widehat{InvestmentCoreSG\&A}_{i,t} = CoreSG\&A_{i,t} - \widehat{MaintenanceCoreSG\&A}_{i,t}. \quad \text{Eq. 2}$$

I acknowledge the possibility of obtaining negative $InvestmentCoreSG\&A$ values using the aforementioned procedure. This can be an artifact of measurement error or possibly be interpreted as underinvestment compared with the predictions of the industry model (Enache and Srivastava 2017). In other words, since $MaintenanceCoreSG\&A$ was obtained based on an industry average, negative $InvestmentCoreSG\&A$ values represent investments below the industry average.

Asset-Specific Investments. To derive an estimate for asset-specific investments, I use a mixed-effects model to capture the proportion of variance of $Investment\ CoreSG\&A$ that is uniquely accounted for by factors associated with brand equity and the proportion uniquely accounted for by factors associated with customer satisfaction. A mixed-effects model considers longitudinal observations nested within firms (brands) and can partition the total variance in the dependent measure to different sources, i.e. within firms and between firms. More specifically, estimating a mixed-effects model allows me to estimate the proportion of $InvestmentCoreSG\&A$ that is

uniquely accounted for by quality and value measures, which are predictors of customer satisfaction (Fornell et al. 1996), as well as R&D and advertising, which are predictors of brand equity (Mittal et al. 2005). R&D and advertising have also been positioned as predictors of customer satisfaction outcomes; however, the link between R&D and customer satisfaction has not been empirically explored extensively (Malshe and Agarwal 2015) while it has been studied extensively and received empirical support as an antecedent of brand equity (Fischer and Himme 2017; Sriram et al. 2007). Furthermore, studies that consider advertising as a customer satisfaction antecedent consider it to influence consumers' quality perceptions (Malshe and Agarwal 2015). Since quality is one of the main predictors of customer satisfaction and less prominent in brand equity measures, I include advertising only as a brand equity antecedent as it has shown to positively affect a number of brand equity dimensions (Stahl et al. 2012; Yoo, Donthu and Lee 2000). Considering that I only use two predictors for each outcome, my results can be interpreted as relatively conservative. I base my calculations on the following single-level, base model:

$$InvestmentCoreSG\&A_{i,t} = \beta_{0,i,t} + \beta_{1,i,t}Quality_{i,t} + \beta_{2,i,t}Value_{i,t} + \beta_{3,i,t}R\&D_{i,t} + \beta_{4,i,t}Advertising_{i,t} + \epsilon_{i,t} \quad \text{Eq. 3}$$

where i denotes the firm (and its brand/product) and t denotes the quarterly time period. $Quality$ and $Value$ denote consumers' perceptions of the quality of the brand/product

and "how much they get for their money,"[8] respectively, and are both established antecedents of customer satisfaction (Fornell et al. 1996). $R\&D$ and $Advertising$ denote the firm's R&D and advertising expenditures, respectively. Both have been shown to generate positive brand equity (Ailawadi et al. 2003; Mittal et al. 2005). These customer satisfaction and brand equity antecedents are expected to explain some variation in $InvestmentCoreSG\&A$. By measuring this variation, I am able to quantify the dollar amount of each marketing-asset investment. $\epsilon_{i,t}$ is an error term and its variance represents within-firm variance not explained by the model (LaHuis, Hartman, Hakoyama and Clark 2014).

I first estimate random, firm-specific intercepts and account for the amount of variance in $InvestmentCoreSG\&A$ that is attributable to between-firm variability, using a nested modeling approach. Specifically, I estimate

$$InvestmentCoreSG\&A_{i,t} = \beta_{0,i,t} + \beta_{1,i,t}Time + u_{i,0} + \epsilon_{i,t} \quad \text{Eq. 4}$$

where i denotes the level-2 unit (firms) and t the level-1 unit, or quarterly observations, that are nested within firms. u_{i0} is a firm-specific random effect with mean 0 and variance τ^2, and $\epsilon_{i,t}$ is the residual at level 1 with mean 0 and variance σ^2. I include time fixed effects in all models, with $Time$ representing a set of dummy variables for each time period. By calculating the intraclass correlation,

$$\rho_0 = \frac{\tau_i^2}{\tau_i^2 + \sigma^2} \quad \text{Eq. 5}$$

[8] YouGov "The User Guide" V4.6

I can estimate the amount of variance attributable to between-firm variability, or in other words, to variability within firms over time (Gelman and Hill 2007). I find a residual intraclass correlation of 30.39%, which supports my decision to model the data as nested. Furthermore, using a likelihood ratio test, I reject the null hypothesis that a model without time fixed effects provides a better fit ($LR\ \chi^2_{28} = 43.72; p < .05$).

Next, I estimate the amount of variance in $InvestmentCoreSG\&A$ that is attributable to antecedents of customer satisfaction ($Quality$, $Value$) and brand equity ($R\&D$, $Advertising$) by fitting a number of random-intercepts models and calculating the proportion of variance explained by each of the four antecedents. Specifically, I am calculating the proportion of variance accounted for by k, R^2_k, where k is the variable of interest ($Quality$, $Value$, $R\&D$, or $Advertising$) and

$$R^2_k = R^2_F - R^2_{F-k} \qquad \text{Eq. 6}$$

where F is the set of all four variables of interest inclusive of k (Selya, Rose, Dierker, Hedeker and Mermelstein 2012). Furthermore,

$$R^2_F = \frac{\widehat{\sigma^2_N} - \widehat{\sigma^2_F}}{\widehat{\sigma^2_N}} \qquad \text{Eq. 7}$$

where $\widehat{\sigma^2_N}$ is the residual variance of the null model (i.e., Eq. 4) and $\widehat{\sigma^2_F}$ the residual variance from the following, full model:

$$InvestmentCoreSG\&A_{i,t} = \beta_{0,i,t} + \beta_{1,i,t}Time + \beta_{2,i,t}Quality_{i,t} + \beta_{3,i,t}Value_{i,t} + \beta_{4,i,t}R\&D_{i,t} + \beta_{5,i,t}Advertising_{i,t} + u_{0,i} + \epsilon_{i,t}. \qquad \text{Eq. 8}$$

Lastly,

$$R^2_{F-k} = \frac{\widehat{\sigma^2_N} - \widehat{\sigma^2_{F-k}}}{\widehat{\sigma^2_N}} \quad \text{Eq. 9}$$

where $\widehat{\sigma^2_{F-k}}$ is the residual variance of the reduced model (i.e., Eq. 5 exclusive k). To accurately assess the reduction in variance due to each individual customer satisfaction and brand equity antecedent, I keep the variance accounted for by random effects constant across models by restricting the random portion of the firm-specific intercepts to be the same in the null and reduced model based on estimates from the full model (Selya et al. 2012). Since $Value$ and $Advertising$ had very little explanatory power, I did not include those percentages in the final total variance explained percentage for each marketing asset. This decision was further supported by the insignificant contribution of both of these predictors to improving the model fit based on LR test statistics. I find that customer satisfaction antecedents explain 2.7% of total variance and brand equity antecedents 3.8%.

To calculate a dollar amount for investments, I again take advantage of the nested structure of my data which allows me to retrieve time- and firm-variant investments. To retrieve time- and firm-specific fixed effects, I estimate

$$InvestmentCoreSG\&A_{i,t} = \beta_{0,i,t} + \beta_{1,i,t}Time + \beta_{2,i,t}Firm + u_{0,i} + u_{2,i} + \epsilon_{i,t} \quad \text{Eq. 10}$$

and add $\widehat{\beta_{1,t}}$ to $\widehat{u_{2,i}}$ where $\widehat{\beta_1}$ is a time specific coefficient and $\widehat{u_{2,i}}$ the random effect associated with each firm. To predict the average amount of $InvestmentCoreSG\&A$ while controlling for brand equity activities for each firm, I estimate

$$InvestmentCoreSG\&A_{i,t} = \beta_{0,i,t} + \beta_{1,i,t}Time + \beta_{2,i,t}R\&D_{i,t} + \beta_{3,i,t}Advertising_{i,t} + u_{0,i} + \epsilon_{i,t} \quad \text{Eq. 11}$$

and calculated $\widehat{\beta_0} + \widehat{u_{0,\iota}}$ for each firm, which is a firm specific intercept, or a firm's average investment in each marketing asset. Finally, by adding each firm's average investment to the predicted firm-specific time fixed effect and multiplying it by the proportion of variance explained by brand equity antecedents, (3.8%), I received firm-quarter estimates for brand equity investment amounts. I repeat the same procedure to calculate firm-quarter estimates for customer satisfaction investments. Summary statistics for all variables of interest for my final model are in Table 2.2.

Model Formulation

To empirically explore potential investment spillovers and the implications for marketing resource allocations, I estimate the following system of seemingly unrelated regressions which allows me to efficiently estimate both outcome equations while taking error-correlations into account (Malshe and Agarwal 2015; Wooldridge 2010):

$$BE_{i,t} = \beta_{0,i,t} + \beta_{1,i,t} lnBE\ Investment + \beta_{2,i,t} lnCS\ Investment + \beta_{3,i,t} BE_{i,t-1} + \beta_{4,i,t} T + \epsilon_{i,t} \quad \text{Eq. 12}$$

$$CS_{i,t} = \delta_{0,i,t} + \delta_{1,i,t} lnCS\ Investment + \delta_{2,i,t} lnBE\ Investment + \delta_{3,i,t} CS_{i,t-1} + \beta_{4,i,t} T + \epsilon_{i,t} \quad \text{Eq. 13}$$

where i denotes firm, t the quarter, BE and CS are brand equity and customer satisfaction outcomes, respectively, and $BE_{i,t-1}$ and $CS_{i,t-1}$ are lagged values of each outcome to control for inertia in these measures (Sriram et al. 2007). In line with previous research, I entered the investment measures in log-linearized form to capture the

diminishing effects of brand equity and customer satisfaction investments (Fischer and Himme 2017; Sriram et al. 2007). Lastly, I included a full set of time fixed effects, T.

Results

Table 2.3 shows the results of the seemingly unrelated regression. I find that brand equity investments are negatively related to brand equity ($\beta_1 = -.0396; p < 0.05$) but find no support for their influence on customer satisfaction ($\delta_2 = -.0479\ ; p = .233$). Furthermore, customer satisfaction investments are positively related to customer satisfaction ($\delta_1 = .0872; p = 0.054$) as well as to brand equity ($\beta_2 = .0971; p < 0.001$). A hypothesis test whether the coefficients across the two equations are identical was rejected for customer satisfaction investments, ($\chi_1^2 = 20.03; p < .001$) but not for brand equity investments ($\chi_1^2 = 5.02; p < .081$). Furthermore, both lagged-dependent variables were highly significant, supporting the notion of high inertia in not only brand equity but also customer satisfaction (Sriram et al. 2007). To assess the robustness of my results I also used different lags for my brand equity and customer satisfaction investments with my results remaining mostly unchanged. In summary, the results offer some support for the notion that investments in one particular marketing asset (e.g., customer satisfaction) can indeed spill over to other marketing assets (e.g., brand equity).

Discussion

Brand equity and customer satisfaction are both intangible marketing assets that require a substantial amount of long-term investments whose returns are not fully known or predictable (Ailawadi et al. 2003; Malshe and Agarwal 2015). I find empirical support

for the notion that investments in one type of market-based asset, customer satisfaction, can indeed improve the outcome of another, brand equity, as well. To the best of my knowledge this is the first study to empirically assess such spillovers across marketing investments typically managed in functional silos. As firm's recognize the need to manage their brands as well as customers as critical assets (Kumar et al. 2006), my study serves as an initial inquiry into important, yet to date under-researched, issues regarding resource allocations to related market based-assets that drive firm value.

Firms that emphasize long-term marketing value drivers may invest intensively in activities above and beyond R&D and advertising, such as marketing research, employee training and information technology improvements (Banker et al. 2011). I propose a novel proxy for investments in market-based assets in addition to traditional measures such as R&D and advertising expenditures. By separating the investment portion of SG&A expenditures from the portion associated with managing current benefits such as revenues, and by allocating shares of this investment to brand equity building and customer relationship management activities, I am able to quantify marketing investments that have traditionally be comingled with SG&A expenditures.

Surprisingly, I find support that brand equity investments have a negative effect on brand equity outcomes. While this seems rather unexpected, one potential explanation could be that firms in my sample essentially over-invest in brand equity. In other words, since I find a positive effect of customer satisfaction investments on brand equity, the "correctly" allocated investment to brand equity results in a negative impact on brand equity. This is consistent with the notion of diminishing returns that implicitly assume an

optimal maximum level of investments (Fischer and Himme 2017). This finding could also be the result of investments that actually reduce brand equity perceptions. For example, research has suggested that frequent uses of price discounts and promotions can create a "discount" association with the brand and effectively lower brand equity in the short and long run (Keller 1998; Jedidi, Mela and Gupta 1999). While discounts and promotions are most likely not part of the long-term investments I am empirically evaluating in this study, there could nevertheless be comingled expenses that are isolated in my model which lead to this unintended outcome.

Theoretical Implications

I offer theoretical support of the importance of integrating cross-functional marketing capabilities. Cross functional marketing capabilities produce market-based assets such as brand equity and customer satisfaction by facilitating knowledge and resource integration across different functions in pursuit of strategic goals (Morgan et al. 2009; Morgan 2012). By illustrating how investments in one type of cross-functional marketing capability enhance the outcome of another, I offer support for the notion that integrating these capabilities across functions can reduce marketing resource misallocations and enhance overall investment effectiveness.

Managerial Implications

My study has several managerial implications. First, resource allocations to brand management activities and customer relationship management should be coordinated across different functions. While in practice, these efforts are often managed separately

(Aaker 2008, Hanssens and Pauwels 2016), I find support that brand equity perceptions are indeed enhanced through customer satisfaction investments. If this spillover is not recognized by brand managers as they consider resource allocations, it can lead to overinvestment of resources into brand equity. As managers across functions vie for limited resources (Rust et al. 2004), taking into account such spillovers can enhance the effectiveness of resource allocations. For example, as brand managers advocate for larger proportions of a marketing budget to be allocated to brand building capabilities, realizing that customer management capabilities also affect branding outcomes, and vice versa, can lead to more reasonable requests in terms of resources needed.

In addition, firms' key performance indicators (KPIs) are often linked to managers' goals and compensation. Indeed, a recent global survey of senior executives concluded that managers considered leaders in the effective use of measurement to drive strategy in their organizations look to KPIs to help them lead, including motivating their employees (Shrage and Kiron 2018). Thus, one implication of my findings regarding spillover effects is that managers may be unfairly compensated (either rewarded or penalized) for performance based on investment decisions made in other areas of the firm. By calling attention to the issue of spillover effects and introducing a procedure for accounting for them, this study furthermore addresses the challenges many executives indicate they experience in measuring and improving performance (Likierman 2009).

Relatedly, to further enhance resource allocation effectiveness, managers must fully understand the multitude of cost items that can potentially influence the outcome they are responsible of managing. However, these allocations are often conflated with

larger cost items, such as SG&A expenditures, rather than captured in ways similar to the reporting of R&D expenditures and advertising. A case in point is Bank of America's *Better Money Habits*® program which was developed to promote financial education. This type of community relations investment cannot only strengthen customer relationships but also reflect positively on the brand. Since this effort was not promoted, traditional advertising expenditures won't capture this type of investment in the bank's market-based assets. My approach of separating additional intangible marketing investments from SG&A expenditures is a first step toward offering marketing managers a more comprehensive evaluation of a larger number of marketing investments.

Limitations

I am using seven years of EquiTrend data for my consumer-based brand equity measure which is conceptualized based on familiarity, perceived quality, purchase intentions, and distinctiveness. While this data base has been widely utilized (e.g. Fischer and Himme 2017; Rego et al. 2009), it is only one of several measures available (see Lehmann, Keller and Farley 2008). Other brand equity measures use slightly different dimensions and it has been shown that these different measures are not highly correlated (Johansson, Dimofte and Mazvancheryl 2012). Furthermore, financially-based brand equity measures such as revenue premiums have been used to assess the firm's level of brand equity (e.g., Datta et al. 2017). My findings should be corroborated using alternative brand equity measures and be compared to outcomes based on financially-based measures.

Furthermore, I am only using two antecedents for brand equity and two for customer satisfaction to allocate shares of $InvestmentCoreSGA$ towards brand management and customer management activities, respectively. To assess the robustness of my results, future studies should consider additional proxies for investments into these market-based assets. For example, variations in customer complaints could be considered as a valid proxy for customer satisfaction improvements and thus as a predictor in the variance partitioning model. Additionally, patent and trademark data could be considered a potential measure for firm's investments in enhance their brand's perception.

Appendix 2.A

To identify the proportion of $CoreSG\&A$ that varies with current revenues and approximate the predicted value of this maintenance component of $SG\&A$, Enache and Srivastava (2017) begin by estimating the following regression by industry and year:

$$CoreSG\&A_{it} = \alpha_{Ind,t} + \beta_{1,Ind,t} Revenues_{it} + \beta_{2,Ind,t} Dummy_Revenue_Decrease_{i,t} + \beta_{3,Ind,t} Dummy_Loss_{i,t} + \epsilon_{i,t}$$

where $CoreSG\&A = SG\&A - Advertising - R\&D$, i denotes the firm, Ind the industry (Fama French 48-industry classification), and t the time period. To control for firm-size, $CoreSG\&A$ and $Revenues$ (Compustat variable SALES) are scaled by the average of beginning and ending total assets for the year (Compustat variable AT). To control for the stickiness of $CoreSG\&A$ and for significant corporate events that may lead to financial losses, a dummy variable that takes the value of 1 if revenues declined or losses occurred during the year and 0 otherwise is included ($Dummy_Revenue_Decrease$ and $Dummy_Loss$, respectively). The median coefficient across industries if 0.115, indicating that firms on average spend 11 cents of each dollar in revenues on the maintenance portion of $CoreSG\&A$. The coefficients of interest for my study are as follows:

Entertainment industry, 0.115; Apparel 0.176; Communication, 0.216; Business Services, 0.162; Transportation, 0.085; Wholesale, 0.033; Retail, 0.121; and Restaurants, hotels, motels, 0.115. All of these are statistically significant at 1%. I also imputed coefficients for the following industries that were not directly approximated: Banks, 0.196; Insurance, 0.200; and Trading, 0.191.

Appendix 2.B

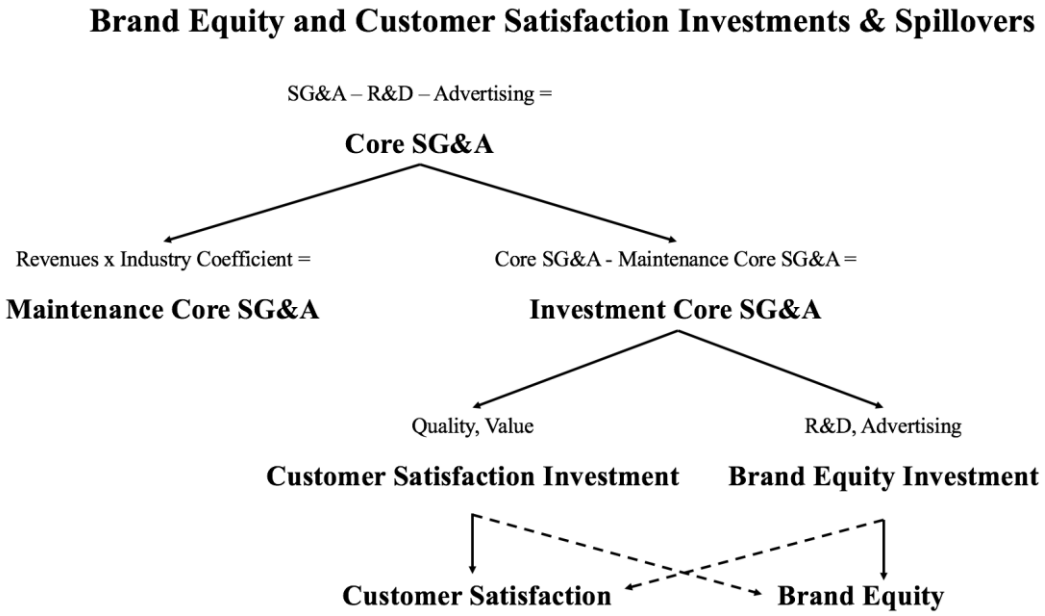


Figure 2.1 Empirical Strategy

Table 2.1 Variables

Variable	*Definition /Operationalization*	*Source*
Brand Equity	0-100 index using the following dimensions: Purchase Consideration, Distinctiveness, Perceived Quality, Familiarity	Harris Interactive EquiTrend
Customer Satisfaction	0-100 index using the following dimension: Customer Satisfaction	YouGov
Brand Equity Investment	Proportion of core SG&A that is allocated toward Brand Equity	Compustat
Customer Satisfaction Investment	Proportion of core SG&A that is allocated toward Customer Satisfaction	Compustat, YouGov
Revenues	Sales	Compustat
CoreSG&A	SG&A - R&D - Advertising	Compustat

Table 2.2 Summary Statistics

Variable	*Obs*	*Mean*	*Std.Dev*	*Min*	*Max*
Customer Satisfaction	1162	58.274	7.696	42.546	80.482
Brand Equity	834	58.096	8.193	36.775	81.508
Brand Equity Investment	1162	10.272	25.89	-45.512	109.842
Customer Satisfaction Investment	1162	7.389	17.517	-30.413	66.017

Table 2.3 Regression Results

Dependent Variable			
	Brand Equity Investment	Customer Satisfaction Investment	Lagged DV
Brand Equity	-.039**	.097***	.909***
	(.019)	(.022)	(.003)
Customer Satisfaction	-.048	.088*	.942***
	(.040)	(.046)	(.006)
Time FE included			
N = 799			
***significant at p<0.01, **significant at p<.05, *significant at p<.10, SE in parenthesis			

CONCLUSION

This dissertation advances marketing knowledge by examining the effects of resource allocations, and specifically, the importance of cross-functional and strategic integration, on marketing performance indicators. In my first essay, using a longitudinal dataset of 45 firms from eight industries, representing 1468 international alliances, I illustrate the positive impact of focusing on value creation via international partnerships and appropriating those sources of value internally on sales growth. As such, I not only offer managerial guidance on how to allocate scarce resources to different growth strategies, but I also quantify one potential manifestation of the impact of organizational silos by showing the increase in sales growth as strategies are coordinated across organizational functions to complement each other.

In my second essay, using a longitudinal dataset of 1162 firm-quarter observations from 45 monolithic brands, I find empirical support for the notion that investments in one type of market-based asset, customer satisfaction, can indeed improve the outcome of another, brand equity. To the best of my knowledge this is the first study to empirically assess such spillovers across marketing investments typically managed in functional silos. As such, my study serves as an initial inquiry into important, yet to date under-researched, issues regarding resource allocations to different market based-assets that drive firm value and highlights the importance of coordinating these investments across organizational functions.

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VITA

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