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Finding the Right Balance: Antecedents and Consequences of Making, Buying, or Concurrently Sourcing Human Capital

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FINDING THE RIGHT BALANCE: ANTECEDENTS AND CONSEQUENCES OF MAKING, BUYING, OR CONCURRENTLY SOURCING HUMAN CAPITAL

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ABSTRACT

Strategically determining organizational boundaries is one means to achieving better performance. This dissertation examines vertical integration, strategic acquisitions and concurrent sourcing to better understand the strategies used to acquire human capital and the impacts of these choices on performance outcomes. Using transaction cost economics and the organizational capabilities literatures I develop hypotheses to determine and explain the relevant antecedents to these strategic decisions. I then determine how the decision to make or buy (or both) human capital impacts competitive advantage and how competitive advantage impacts financial outcomes (i.e., revenue, and sales). Hypotheses are tested using data on 30 organizations from Major League Baseball (as well as their subsidiaries) spanning from 2002-2011. Regression models are used to identify significant predictors of the sourcing decision and how the sourcing decision impacts performance through competitive advantage.

CHAPTER 1: THE DISSERTATION TOPIC

Introduction

Identifying the boundaries of organizations is a storied topic in strategic management (e.g., Chandler, 1977; Coase, 1937; Thompson, 1967; Williamson, 1975). The boundary of an organization is very important as organizations choose what businesses to be in and the extent of their involvement. While this has been an ongoing question, scholars struggle to explain how organizations make these determinations (Parmigiani, 2007). To provide some insights into these decisions, I seek to answer the following questions: What factors affect organizations' decisions to source their human capital (i.e., Study 1)? How do these decisions impact competitive advantage and does competitive advantage mediate the relationship between sourcing decisions and financial outcomes (i.e., Study 2)?

In regards to the first of these two questions, organizations must make strategic decisions about where to draw boundaries and how much of the value chain to control. Broadly, there are two sides to this coin, (1) to determine these decisions in synergetic ways in order to add value and (2) to determine these decisions to reduce costs. Regarding the former, scholars argue that organizations should concentrate on core competencies and contract with the market (i.e., buy) for inputs which they do not have a competitive advantage in producing (e.g., Barney, 1991) or that cannot lead to advanced and sustainable capabilities, an important construct to determining organizational boundaries (Madhok, 1996). If an organization can add value by producing internally it should do so, but if not, it should buy the input in the market. Others point out that contracts are expensive, and that other organizations act opportunistically and in unexpected, uncertain ways (e.g., Williamson, 1981). Thus, when organizations (1) need very specific assets (i.e., non-redeployable investments), (2) in uncertain environments, and (3) at high frequencies, they should make the input to alleviate holdups and transaction costs present in the market.

Of course these different approaches have some interplay (see Geyskens et al, 2006). While it can be strategic to primarily make or to buy, a single approach may lead to the too-much-of-a-good-thing (TMGT) effect; complete vertical integration depends too heavily on organizational capabilities, while completely acquiring has control problems and high information and coordination costs which put organizations at risk for opportunistic behaviors. Because vertical integration limits options, and strategic acquisitions at high levels diminish the ability to recognize opportunism, too much of either may eventually lead to diminishing returns (or even negative impacts). Therefore, organizations may choose to both make and buy, a practice termed concurrent sourcing (e.g., Parmigiani, 2007; Parmigiani & Mitchell, 2009), also referred to as tapered integration (e.g., Harrigan, 1986; Rothaermel, Hitt, & Jobe, 2006) and plural governance (e.g., Hennert, 1993; Puranam, Gulati, & Bhattacharya, 2013). The idea that there is an optimal sourcing decision and that the decision can vary across organizations is also captured in literature examining the alignment of organizational actions with characteristics of, and conditions affecting, an organization. As is presumed by the TMGT effect, misalignment is thought to negatively affect organizational performance.

Major League Baseball (MLB) is a unique context for the sourcing decision. All 30 MLB teams have programs in which they develop their players' skill sets (i.e., minor leagues). If a player performs well within the developmental system, he may be promoted through various developmental stages and eventually make it on an organization's professional roster. A professional roster of an MLB team consists of 25 players, some of whom may come from an organization's internal developmental system. Players who are not a product of the team's development system are acquired in the marketplace, either through free agency or via trades. The interesting question is what determines how many players on a professional roster come from a team's developmental program and how many are developed by other teams and later traded to, or purchased by, the acquiring organization. In strategic management we

continue to study how, why, and when organizations use internal or external labor (Bidwell & Keller, 2013), issues this context helps us understand. The sourcing decision is a common issue for MLB teams as it is for other business organizations. Just as business organizations have accountants, sales representatives and so forth, MLB teams have positions requiring various specialized skills, such as pitchers, infielders, catchers, et cetera. All MLB teams must consider the extent to which they will develop players internally (some who will become talented members of the organization, and some who will not), or seek talent from other teams. Regarding the former, moving players with potential to the professional roster is similar to promoting talented employees up the corporate ladder in a business organization. Likewise, when MLB teams have needs for talented players, but do not have the internal talent to fill those needs, they may acquire players from other teams. Talent acquisitions can come from close industry competitors (i.e., intradivision rivals in a MLB setting) or from any organization that equips players with the desired skill sets, including international leagues. Furthermore, organizations that acquire talent in the marketplace also potentially diminish the performance of competitors through human capital loss (Shaw, Park, & Kim, 2013).

In the case of MLB, and in accordance with the resource based view (RBV) of the firm, teams have varying resources. Some teams may have more capital (i.e., wealth in the form of money or assets); some may have better developmental programs; and some may have both or neither asset. Accordingly, these resources are capabilities which impact organizational competitive advantage. Regarding the three fundamental mechanisms of transaction cost economics (TCE) (i.e., asset specificity, uncertainty, and frequency), asset specificity is low (i.e., the skills employees possess readily transfer to other organizations), uncertainty varies among players (i.e., it's unknown whether employees will continue to perform but even less known is an organization's ability to develop employees), and frequency varies (i.e., some teams have higher turnover than others). Using MLB, I explore and test antecedents of the

acquisition of human capital as well as the subsequent impact of this strategic decision on various performance outcomes.

MLB allows me to explore performance outcomes in various ways. Throughout the past two decades a greater emphasis has been given to multiple performance measures such as the triple bottom line, the balanced scorecard, competitive advantage, stakeholder performance, varying financials outcomes, and so forth (e.g., Berman, Wicks, Kotha, & Jones, 1999; Brower & Mahajan, 2012; Clarkson, 1995). Within MLB, I analyze three performance outcomes. Specifically, I determine how sourcing impacts competitive advantage (i.e., one type of performance outcome) and then also how competitive advantage impacts revenue and sales (i.e., two other performance outcomes). This not only helps nail down whether sourcing impacts competitive advantage but also sheds light on the ensuing impact on separate financial outcomes. In doing so, I measure competitive advantage through team wins to assess whether the sourcing of human capital impacts this performance outcome. Subsequently, I determine whether competitive advantage impacts financial performance outcomes of MLB team revenue (i.e., the incoming dollar amount), and sales through ballpark attendance. These are appropriate performance measures for MLB and also align my two stage performance analysis with the theoretical framework. By providing multiple and varying outcomes rather than one measure for financial performance, I can deduce generalizable conclusions relevant to MLB that also apply to other business organizations.

Contribution of the Dissertation

Vertical integration is a well-developed topic that continues to receive attention in the literature (e.g., Zhang, 2013). More recent topics such as concurrent sourcing are embedded within vertical integration and also maintain relevance in top strategy journals (e.g., Heide, Kumar, & Wathne, 2013; Krzeminska, Hoetker, & Mellewigt, 2013; Parmigiani, 2007; Parmigiani & Mitchell, 2009; Puranam et

al, 2013). I will utilize literature on vertical integration and concurrent sourcing to unpack vertical integration, strategic acquisitions, and concurrent sourcing and explain how these prominent topics in strategic management relate and apply to human capital. I will identify the impacts of various levels of concurrent sourcing rather than treating this as a dichotomous phenomenon. This differentiation will help to better explain how varying levels of concurrent sourcing impact various outcomes. I also test concurrent sourcing through human capital which may shed light on differences between human capital and other more traditionally tested inputs in the value chain (e.g., products, raw materials). The context which I examine, MLB, allows me to further explore organizations' sourcing decisions in unique (e.g., human capital and competitive advantage) yet generalizable ways.

Next, TCE has been fundamental to vertical integration, but relatively silent about concurrent sourcing. As a prominent mid-range theory, TCE should be useful in explaining concurrent sourcing. I will demonstrate the utility of TCE to understanding concurrent sourcing, extending the application of this theoretical framework. Further, the TCE literature has not given enough attention to frequency (i.e., the third leg of the transaction cost "stool"), an aspect necessary to better ground research using TCE. Therefore further explanations of the frequency leg will incrementally contribute to TCE theory. Finally, by designing hypotheses between the organizational capabilities and TCE literatures (e.g., Parmigiani, 2007), I address the utility of each as a theoretical perspective to explain varying degrees of concurrent sourcing human capital.

In addition to identifying antecedents of the make versus buy decision in Study 1, I examine its impact on performance by analyzing two aspects of the strategy—performance relationship: organizational alignment and the TMGT effect (i.e., Study 2). I address organizational alignment between predicted concurrent sourcing and actual concurrent sourcing to provide evidence as to whether following the predicted strategy (i.e., alignment) makes organizations more successful. Then I test the

TMGT effect which is fairly well studied in certain areas of strategy (e.g., diversification), however vertical integration and strategic acquisitions have received less attention in the TMGT effect literature. I address this deficiency by showing that the make versus buy decision, specifically involving human capital, is impacted by the TMGT effect. These performance related contributions reveal the importance of considering multiple performance mechanisms less often explored in lieu of a single financial outcome. Namely, the results show how strategic concurrent sourcing impacts competitive advantage and how competitive advantage impacts financial outcomes. Further, although it can be difficult to precisely measure an organization's value creating strategy (i.e., competitive advantage, Barney, 1991), MLB records a statistic for wins and losses which precisely measures a team's competitive advantage. Thus, MLB provides an opportunity to demonstrate how the composition of an organization's human capital impacts competitive advantage and how competitive advantage mediates the relationship between sourcing and financial outcomes as shown below in Figure 1.

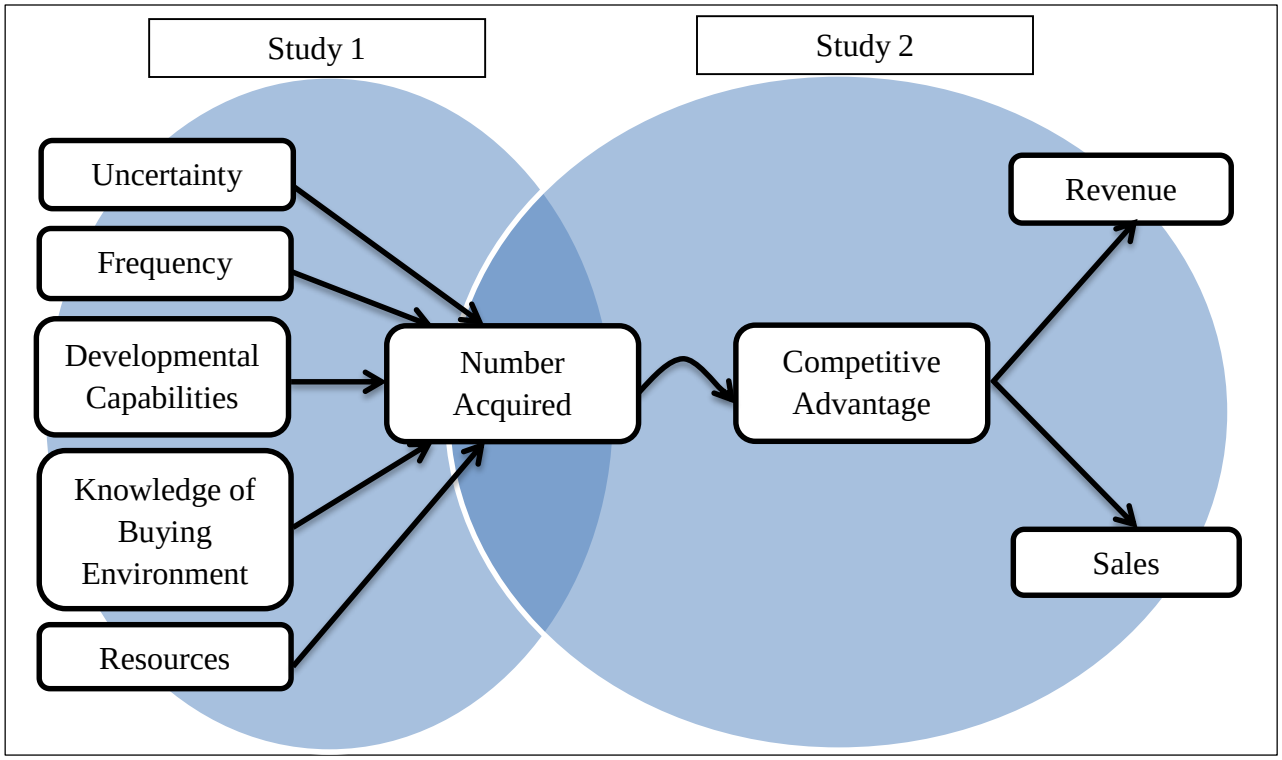


Figure 1. Overview of the Dissertation

Definitions of Key Terms

Below are definitions for the terms that are critical to the dissertation. These include terminology important to the literature review, theory, and hypotheses sections:

Vertical Integration. Vertical integration "involves a variety of decisions concerning whether corporations, through their business units, should provide certain goods or services in-house or purchase them from outsiders instead" (Harrigan, 1985, p. 397).

Strategic Acquisitions. Strategic acquisitions are the governance mechanism that emerges when organizations rely on markets to provide specialized capabilities as a supplement to organizations' existing competencies. (Holcomb & Hitt, 2007: 467-468).

Concurrent Sourcing. Concurrent sourcing "occurs when firms both make and buy some of their requirements for a component" (Parmigiani & Mitchell, 2009, p. 1066) "or simultaneously make and buy the same good" (Parmigiani, 2007, p. 285).

Transaction Cost Economics (TCE). "The transaction cost approach to the study of economic organization regards the transaction as the basic unit of analysis and holds that an understanding of transaction cost economizing is central to the study of organizations" (Williamson, 1981, p. 548). Organizations attempt to reduce transaction costs according to three fundamental elements: asset specificity, uncertainty, and frequency (Williamson, 1985).

Organizational Capabilities. Organizational capabilities "views the firm as a bundle of resources and capabilities linked together through firm-specific routines which can behave both as a competitive constraint as well as the source of sustainable value" (Madhok, 1996, p. 578).

Competitive Advantage. Competitive advantage is when an organization creates more value than rival organizations (Barney & Hesterly, 2012).

Organizational Alignment. Organizational alignment refers to how closely an organization's actions agree with its predicted actions based on its internal characteristics and external influences. Deviations from predicted courses of action lead to misalignment.

Too-Much-Of-A-Good-Thing Effect. A meta-theoretical principle stating that most relationships resemble an inverted U such that predictor variables have a beneficial impact at first but cease to be positive beyond certain levels (Pierce & Aguinis, 2013: 315).

Summary of the Remaining Chapters

In chapter two, prior literature on vertical integration, strategic acquisitions, concurrent sourcing, performance, organizational alignment, and the TMGT effect are reviewed to develop and explain antecedents to the sourcing decision (Study 1) and how the sourcing decision affects performance outcomes (Study 2). After reviewing the literature, I develop the theory and hypotheses in chapter three. This is followed by a description of the methods (chapter four) and results (chapter five). In chapter six, I conclude with a discussion of findings, their limitations, and future research.

CHAPTER II: REVIEW OF THE LITERATURE

Introduction

This chapter begins by addressing buyer-supplier relations. Following this positioning within the literature, I discuss vertical integration, strategic acquisitions, and concurrent sourcing as separate decisions while also addressing varying levels of concurrent sourcing. Then performance, organizational alignment and the TMGT effect literatures are reviewed. Finally, an overview of MLB is provided describing the developmental system for players on MLB teams and its applicability to sourcing human capital in strategic management. The objective of chapter two is to review the sourcing literature, demonstrate the need to better understand factors affecting make versus buy decisions, provide an overview of performance, why balance may be optimal, and how MLB is useful for these purposes.

Buyer- Supplier Relations

Within the realm of corporate strategy, organizations must determine the foci of their business and how much of the vertical chain to control. Extending the value chain is an expansion of an organization's business and is done for a variety of reasons including, but not limited to, risk mitigation, cost reduction, synergies, managerial decisions, and exploitation of economies of scope (Ansoff, 1957; Ramanujam & Varadarajan, 1989). Regardless of the reasons, the most widely analyzed determinant of value chain boundaries is its impact on performance (Chatterjee & Wernerfelt, 1991). This research dates back to the early works of Rumelt (1974; 1982) and has been a topic of great interest since the mid 1900's when U.S. organizations dramatically expanded their boundaries (Rumelt, 1982).

In the case of buyer-supplier relations, organizations may choose to engage with suppliers or expand existing value chains by developing internally (i.e., backward integration). Research has focused on various issues in the buyer-supplier domain such as governing relations (Liu, Luo, & Liu, 2009), understanding trade-offs (Hoetker, 2005), antecedents and consequences of opportunism (Hawkins, Wittmann, & Beyerlein, 2008), interorganizational collaboration, quality assurance, and flexible

delivery systems (Imrie & Morris, 1992). Other issues also receiving attention include just-in-time manufacturing, minimum inventory programs, effectiveness of purchasing, and sourcing decisions (Turnbull, Oliver, & Wilkinson, 1992). Although many aspects of buyer-supplier relations are outside the scope of this dissertation, I focus on key aspects of this relationship. Namely, do single value chains source through the buyer-supplier relationship, internal processes, or both?

Hence, the first emphasis (i.e., Study 1) of my work examines the sourcing decision as it pertains to backward integration. Organizations must determine which aspects of their business they will make internally and which they will buy on the market through various buyer-supplier relations. Beginning with an overview of buyer-supplier relations helps demonstrate how the present study is embedded in a rich literature stream. By reviewing this literature I can see how these sourcing decisions are often made through economizing on transaction costs and building synergies from organizational capabilities. Furthermore, concurrent sourcing, as discussed more thoroughly in the coming pages, may allow organizations to balance all of the above by reducing transaction costs and enhancing synergies that are associated with a balanced strategy of making and buying. The following subsections highlight three different organizational choices when acquiring necessary inputs: to vertically integrate, strategically acquire, or concurrently source.

Vertical Integration: The Decision to "Make"

Vertical integration is an aspect of organizing by which organizations conduct more of the value chain internally. Research on vertical integration has remained prominent since the 1930s when Coase (1937) ignited streams of research by asking a simple but powerful question: If markets are efficient, what purposes do organizations serve? Though prominent in strategic management, this topic is also important to other disciplines. For example, operations management scholars study the supply chain and marketing scholars study sales and distribution (Mentzer, DeWitt, Keebler, Min, Nix, Smith, &

Zacharia, 2001). These examples relate to where a value chain should start and where it should end, respectively.

Vertical integration may occur through backward integration which addresses the supplier side of a single value chain "where the firm takes over ownership and control of producing its own components or other inputs" (Grant, 2008, p. 344). Backward integration (also known as upstream) is the focal side of sourcing decisions at the core of this study. Alternatively, forward integration (also known as downstream) is control over the post-production process all the way to the customer. Together the line of activities related to one product or service is termed the value chain. Organizations make decisions about how much of this chain to control, related to economies of scope and scale along the value chain. With products, for example, this involves all steps from extracting raw materials to placing a finished good into a customer's hands. Organizations which control more of these steps (i.e., between raw materials and purchases) are considered to be more vertically integrated (Barney & Hesterly, 2012). Historically this work has focused on production. However, a limited number of studies have begun to address how and why this is important for human capital and how organizations can develop their employees to enhance organizational performance (e.g., Saks & Haccoun, 2010). For example, Lepak and Snell (1999) design a framework based on the uniqueness and value of human capital and determine employment mode, employment relationship, and HR configurations. They propose organizations' can gain competitive advantage by internally developing highly unique, highly valuable employees.

As with most strategic decisions, vertical integration has benefits and costs. Harrigan (1984) identified two forms of benefits: internal benefits (e.g., integration economies, improved coordination, and time savings by avoiding interactions with suppliers) and competitive benefits (e.g., improve intelligence, opportunity to create differentiation, control, and synergies). Other benefits include removing the threat of opportunism, synergy, reduction of uncertainty, securing supply of raw materials,

protection and control over assets and services, access to new forms of technology, and simplified procurement associated with reducing the number of suppliers to an organization (Balakrishnan & Wernerfelt, 1986; Carter, 1977; Coase, 1937; Harrigan, 1984; Ketchen, Eisner, Dess, & Lumpkin, 2009; Klein, Crawford, & Alchian; 1978) Despite the advantages to vertically integrating, there are also disadvantages.

While vertical integration gives the organization procurement simplicities, administrative and coordination costs must be considered (Zhou, 2011). If coordination costs outweigh the benefits of vertical integration, expanding the value chain should be avoided. Other internal disadvantages include excess capacity and poor organization (Harrigan, 1984). Competitively, organizations may get stuck with obsolete processes (i.e., loss of flexibility), lose information from suppliers or even exaggerate the suggested synergies (Harrigan, 1984). There are also costs of additional facilities, equipment, and so forth. Finally, even if vertically integrated organizations are more flexible by coordinating inputs while avoiding holdup costs (Coase, 1937; Klein, 1988), highly integrated organizations can lack flexibility and adaptability because of high switching costs (Monteverde & Teece, 1982), and more challenges to change through learning in stable environments (Sorenson, 2003).

Many of the above advantages and disadvantages have been studied for production but there are differences for human capital. For example, humans have the potential to behave in very unpredictable ways such as choosing to resign from a company immediately after receiving training; yet unlike most machines, humans can provide verbal feedback about the training they receive to expedite the specific development process, thereby adding value to the organization due to the decision to vertically integrate. Only when managers are mindful of both the advantages and disadvantages can vertical integration be a useful corporate strategy in developing human capital.

Strategic Acquisitions: The Decision to "Buy"

Organizations that are not vertically integrated instead choose to acquire from others (e.g., allowing other organizations to train and develop human capital). Strategic outsourcing is "the organizing arrangement that emerges when firms rely on intermediate markets to provide specialized capabilities that supplement existing capabilities deployed along a firm's value chain" (Holcomb & Hitt, 2007, pp. 467-468). However, because outsourcing commonly implies that an organization no longer conducts a function that was previously completed internally, the semantics as applied to this context are not quite precise. In the context of human capital, the purchased "product" from the market is not perishable in the same way a component might be. Rather, the human capital asset remains in the organization. Thus there is some difficulty in choosing the most appropriate term. However, henceforth I refer to the process of acquiring human capital from other organizations as strategic acquisitions. Rather than produce the necessary inputs (e.g., labor, products) themselves, these organizations acquire them from others. This allows organizations to be more modular, conducting activities they do best, avoiding unnecessary coordination costs for activities that will not lead to greater synergies, and also giving organizations access to talent and opportunities to learn. There are, of course, downsides to acquiring, such as lengthy contracts, losing touch with supplier innovation, and so forth. While allowing others to develop human capital exploded in popularity during the 1980s, some organizations find advantages to bringing activities back in house (McLaughlin & Peppard, 2006) due to the discovery of hidden costs and complexities associated with outsourcing (Reitzig & Wagner, 2010).

Acquiring human capital is relevant to a whole host of organizational functions including human resources, enterprise resource planning systems, financial, production, inventory, analytics, and customer service (Laplante, Costello, Singh, Bindiganavile, & Landon, 2004). Acquiring rather than developing continued to spread during the past two decades primarily due to technological

advancements which made it easier to conduct business offsite. Oddly, acquiring has received limited coverage in strategic management (e.g., Holcomb & Hitt, 2007; Quinn & Hilmer, 1994; Rothaermel et al, 2006).

Like the present study, other prominent research has related this important organization boundary decision to two fundamental theories, TCE and organizational capabilities (Holcomb & Hitt, 2007). TCE focuses on efficiency and economizing on exchanges through contracts and primary mechanisms (i.e., asset specificity, uncertainty, and frequency), and organizational capabilities promotes acquiring human capital if outside of its core competencies (i.e., does not provide synergy or sustainable competitive advantage). Thus, organizational capabilities allow organizations to focus on core competencies yet still provide two fundamental guidelines to best achieve strategic acquisitions: resource-picking (i.e., managers outsmart the resource market) and capability-building (i.e., managers design systems to elevate the selected resources) (Holcomb & Hitt, 2007; Makadok, 2001).

As organizations continue to seek voluntary arrangements to exchange in the market (Rothaermel et al, 2006), acquiring talent will remain a viable option. In this study, which focuses on human talent, MLB teams face difficult decisions when acquiring human capital because, despite their best efforts to draft optimal contracts, not all information can be uncovered ex ante. Furthermore, although most acquisition literature applies to human capital, not all of the costs and benefits apply. For example, learning from suppliers has limited value in MLB. Additionally, although teams may attempt to do so, they cannot completely predict future needs. Therefore, in cases where human capital development may not be ready, acquiring is a reasonable alternative because of its immediate impact in times of urgent need. However, because vertical integration and strategic acquisitions have costs and benefits, recent research points to advantages of using both, a practice termed concurrent sourcing.

Concurrent Sourcing: The Decision to "Make" and "Buy"

Concurrent sourcing is the process by which organizations both make (i.e., vertically integration) and buy (i.e., strategically acquire) necessary inputs (Parmigiani, 2007). This is also known as tapered integration, "when firms are backward or forward integrated but rely on outsiders for a portion of their supplies or distribution" (Harrigan, 1984, p. 643). Organizations do this to stay knowledgeable about inputs they are purchasing which avoids other organizations acting opportunistically (i.e., taking advantage of an organizations lack of knowledge), an issue that links capabilities (i.e., knowledge) and transaction costs (i.e., opportunism). Moreover, because concurrent sourcing allows organizations to acquire resources from the market, rarely will the buyer be put in undesirable situations due to dire need (Adleman, 1949). Additionally, organizations can control and supplement their needs flexibly and with the greatest reduction of performance uncertainty (Mols, 2010), which is especially important considering the behavioral uncertainty of human capital. Hence in the case of MLB, teams can supplement their rosters with successfully trained players or strategically acquired players as necessary.

Organizations consider a host of questions when deciding whether to vertically integrate or strategically acquire, a rigorous calculus weighing costs and benefits. Research often implies organizations must either make or buy, and neglects the fact that organizations can both make and buy at the same time. A blend of both allows organizations to integrate knowledge back to their internal operations (He & Nickerson, 2006; Parmigiani & Mitchell, 2009). Having this internal process provides organizations with absorptive capacity to acquire knowledge from similarly focused suppliers (Cohen & Levinthal, 1990). In the case of human capital, this gives organizations the know-how to develop talent and also to assess and refine acquired talent. Scholars focused on the sourcing issue as early as the 1940s (Adleman, 1949), but more intensely since the 1980s (Harrigan, 1984; 1985). Yet we still see incremental advancements on this important topic within our major journals (He & Nickerson, 2006;

Parmigiani, 2007; Parmigiani & Mitchell, 2009; Rothaermel et al, 2006). I contribute to this literature by demonstrating how concurrent sourcing affects an organization's competitive advantage via organizational alignment and the TMGT effect. In addition, I examine the importance of organizational alignment and the TMGT effect associated with concurrent sourcing's impact on financial performance through competitive advantage.

Organizational Performance

Certain advantages of concurrent sourcing are expected to enhance performance because concurrent sourcing allows firms to balance TCE and organizational capabilities perspectives. Adelman (1949) points out that organizations will rarely overproduce inventory because they can rely on the market for additional supplies if needed and hence obtain all possible sales by avoiding inventory stock outs. This allows organizations to produce their supplies internally at optimal efficiency levels rather than acquire additional production or service equipment that may sit idle at times. Because concurrent sourcing permits learning (Adelman, 1949), performance is also enhanced by improving quality and cutting costs based on new and learned knowledge. Other benefits of concurrent sourcing have been highlighted in prior sections such as gained information, reduction of vulnerability to shortages (Bradach & Eccles, 1989), reduction of information asymmetry (Heide, 2003), monitoring of R&D, and enhanced bargaining power (Harrigan, 1984) but these benefits are often only implicitly connected to performance. Through the use of MLB data, multiple performance outcomes are tested to determine whether roster composition has an impact.

Much of the extant research assumes because organizations pursue concurrent sourcing, it ultimately helps them perform better or survive longer. However, as Parmigiani (2007) notes, organizational economics theories, in which much of the make, buy, or concurrently sourcing literature is embedded, assume that organizations always make efficient sourcing decisions. Mols (2010b, p. 525)

argues “that concurrent sourcing improves performance when firms face a combination of volume uncertainty, technological uncertainty, performance uncertainty, non-decomposability, transaction-specific investments, and strong internal and external capabilities.” This demonstrates how concurrent sourcing integrates strengths from transaction cost and organizational capabilities literature but again, only theoretically rather than empirically.

There have, however, been some empirical tests demonstrating how concurrent sourcing of innovation and control processes enhance performance (Bradach, 1997), and how trucking firms use both internal truck-drivers as well as outsourced truck-drivers for efficiency, appropriability, and competition (He & Nickerson, 2006). Still, much more has been proposed than empirically tested. Accordingly, because performance is a multidimensional construct (e.g., competitive advantage, financial outcomes), not all sourcing decisions are perfectly optimal, and our knowledge about the implications of concurrent sourcing on performance can be enhanced through further empirical tests, therefore further investigation of the implications of concurrent sourcing on performance is necessary.

Organizational Alignment

To further assess the effects of concurrent sourcing on performance, I also examine the relationship as a question of proper organizational alignment. Organizational alignment can be interpreted in a variety of ways. For contingency theorists, it means organizations aligning with environments (Lawrence & Lorsch, 1967). For others it is both the coordination of vertical and horizontal activities (Kathuria, Joshi, & Porth, 2007). In this study, I refer to alignment as the proximity of organizations’ observed actions in comparison to the actions predicted based on their internal characteristics (e.g., developmental capabilities) and external influences (e.g., market size) which are drawn from TCE and organizational capabilities theories. Minimizing the difference between what they

actually do and what they are predicted to do leads to better alignment; a determinant which scholars argue leads to better performance (Sampson, 2004).

The benefits of alignment provide organizations a natural way to tap into their strengths by following a prescribed strategy based on organization specific characteristics (i.e., get the most out of what you have). Alignment also allows organizations to reduce transaction costs by choosing to do what best suits the organization rather than unnecessarily searching and transacting (i.e., internally or externally) when it does not fit organizational characteristics. Albeit transitory periods may be necessary to make internal adjustments according to external shocks, organizations are best suited by acting strategically according to their characteristics.

Misalignment involves making inappropriate decisions that do not correspond with organization specific characteristics, leading to lower rates of survival (Bigelow, 2003; Silverman Nickerson & Freeman, 1997) and lower profits (Mayer, 2000). Misalignment occurs for a number of reasons, including irrational decision making (Tversky & Kahneman, 1986), bounded rationality (Simon, 1972), miscalculations, hubris, and changing conditions (Sampson, 2004). Often misalignment occurs especially in the short term as both managers and markets work toward equilibrium, reducing misalignment in the long term (Sampson, 2004; Williamson, 1985).

Costs and consequences of misalignment significantly and negatively impact performance (Yvrande-Billon & Saussier, 2005). From a TCE perspective this is often due to excessive opportunism hazards and excessive bureaucracy (Sampson, 2004). Excessive opportunism hazards occur when organizations need too much from the market (i.e., suppliers in this context), whereas excessive bureaucracy costs come when organizations are attempting to conduct too much of the business internally when in fact they are better suited to seek market-based suppliers. On the other hand, misalignment from an organizational capabilities perspective reduces synergies causing organizations to

miss out on opportunities to add value and create dynamic capabilities (Winter, 2003). Whether hoping to align or trying to avoid misalignment, organizations discover better performance by acting in accordance with their characteristics and constraints.

Too-Much-of-a-Good-Thing Effect (TMGT effect)

Finally, the impact of varying sourcing arrangements on performance is examined through curvilinear relationships. A growing body of work in strategic management suggests that predictor variables, often ones which have a positive impact, can have negative effects if taken too far (Pierce & Aguinis, 2013). This curvilinear relationship is depicted by the classic inverted U, demonstrating decreasing returns after a certain inflection point (or at least diminishing). Pierce and Aguinis (2013) recently published this as a meta-theoretical principle, suggesting that the TMGT effect is prevalent throughout many fields of management (e.g., strategy, entrepreneurship, and organizational behavior). They present diversification (i.e., vertical integration is a type of diversification) as an example of the TMGT effect in strategic management (e.g., Palich, Cardinal, & Miller, 2000; Qian, Li, Li, & Qian, 2008).

Performance improvements from related diversification drop as organizations expand beyond their related capabilities (Markides & Williamson, 1996; Palich et al, 2000). This highlights problems from both the "too much" and the "too different" perspectives. Even more directly, performance declines with greater diversification (Lang & Stulz, 1994). More recently, scholars presented findings of curvilinearity in diversification (Qian, Li, Li, & Qian, 2008). This phenomenon extends to vertical integration, a form of diversification and the focus of this study.

Rothaermel and colleagues (2006) address the degree to which vertical integration and strategic acquisitions are beneficial. For strategic acquisitions they find product portfolio, new product success and organization performance all have diminishing returns once reaching an inflection point. They also

examine tapered integration (i.e., concurrent sourcing), finding positive effects on products for an organization that makes and buys the same inputs (i.e., balancing vertical integration and strategic acquisitions). It is unknown whether similar findings will occur for human capital within the value chain. Additionally, their results for strategic acquisitions are significant but only partially supported for vertical integration. These two differences provide room for my study to incrementally contribute to work on the TMGT effect. Professional baseball allows me to address the issues for the acquisition of human capital and the elusive optimization of concurrent sourcing.

Context: Major League Baseball (MLB)

Professional athletics is a proven and effective context for many organizational phenomena (Wolfe et al, 2005). The use of sports data to facilitate management research has been recognized at major conferences (e.g., Academy of Management) as well as in prominent management journals (Katz, 2001; Seifried, Soebbing, Washington, & Bendickson, 2014). Seifried and colleagues (2014) specifically highlight the underdeveloped potential sports data provide. Sports data are useful due to accuracy, consistency, and collection over relatively long periods of time, and they provide excellent measures of success and failure (Schrage, 2013). This is ideal for testing concepts in strategic management. For example, Holcomb, Holmes, and Connelly (2009) used National Football League (NFL) data to examine managerial ability, resource quality, resource value creation, and organizational performance. More closely related to human capital, Wright and colleagues studied fit between human resources and strategy among NCAA basketball teams (Wright, Smart, & McMahan, 1995). Many management topics have also been explored using MLB data. Some of these include relational mechanism of embeddedness through trades (Barden & Mitchel, 2007), pay distribution-performance relationships (Bloom, 1999), pay equity (Howard & Miller, 1993), resource divestment capability (Moliterno & Wiersema, 2007), managerial succession and organizational performance (Allen, Panian,

& Lotz, 1979; Audas, Dobson, & Goddard, 2002), and competitive advantage (Poppo & Weigelt, 2000). The following sub-sections describe important details about MLB as it pertains to concurrent sourcing of human capital.

The Developmental System

To examine how teams finalize their rosters, I focus on the process of acquiring players, and explain the functions of the developmental system, namely why organizations might choose a strategy which emphasizes using its developmental system or a strategy of acquiring players from other professional rosters. Additionally, I describe the use of trades and free agency as means of acquiring human capital, and important financial aspects of MLB. MLB franchises (i.e., the professional and developmental teams under one umbrella organization) have several ways to obtain players: the draft, international draft, trades with other teams, and acquiring players in the external market (i.e., free agency). Once players are obtained, franchises can cultivate talent through their developmental programs (also known as minor leagues or farm systems), if players are not ready for the professional roster.

There are primarily two ways in which a MLB franchise can sign contracts with non-professional players: The first-year player draft and the international draft. This is how franchises acquire a majority of the players that they "make." The first-year player draft takes place in June and involves all 30 MLB franchises (MLB.com, 2013), each of which selects amateur players. The pool of players eligible for the draft include unsigned high school players who have decided to forego college, junior college players (who are eligible to be drafted at any time) or players participating at four-year colleges and universities who have completed their third year of college (i.e., applies to college players who choose to attend a four-year institution) (MLB.com, 2013). Once franchises know which players are draft-eligible, they begin to select players based on the draft order. The draft order is determined according to the results of

the previous season with priority given to poorer performing teams in order to increase parity throughout the league as long as they are able to offer competitive contracts and signing bonuses.

A second opportunity for signing undrafted players is during the international signing period. This process begins July 2nd and allows franchises to offer contracts to international prospects. To be eligible players must be classified as amateur, meaning they have not signed a professional contract, be a resident of a country outside of the U.S., Canada, or a U.S. territory (e.g., Puerto Rico), and be at least 17 years of age before September of that year (MLB.com, 2013). Many of the talented players sign contracts in early July; however this period extends through June 15th of the following year (MLB.com, 2013). As with the domestic draft, selection order is determined to provide poorer performing teams with earlier choices.

After players sign contracts, most enter a club's developmental system rather than immediately join the professional roster. For this reason all drafted players enter franchises under what I label the "make" categorization. Players join one of the franchise's developmental teams at the beginning of the next season. Each team's developmental system contains six levels of play, and the placement level of a newly drafted player depends on his ability. From novice to advanced, there are two levels known as "rookie ball," two levels of Class A (i.e., Low A and High A), Class AA, and Class AAA. For example, the Minnesota Twins have the following developmental teams in their system (from lowest to highest level): Gulf Coast League Twins, Elizabethton Twins, Cedar Rapids Kernels, Fort Meyers Miracle, New Britain Rock Cats, and the Rochester Red Wings (Baseball Reference, 2013).

Once assigned to a level of play in the developmental system, a player's progression depends on his performance and demand in upper leagues (or on the professional roster). There is no definitive time frame for players to make a professional roster, an aspect of uncertainty that comes with developing rather than acquiring talent from other professional rosters through trades or free agency. Exceptionally

talented players often advance through the developmental system in one to two years. Others may advance much slower or not at all. Since each franchise has six developmental teams, many players never make it to the professional roster. Finally, in addition to signing amateur players for development, franchises can also acquire players from other professional rosters through trades, or sign players who have entered free agency. These more experienced players are generally more costly, but are often able to make an immediate impact on a team's professional roster.

Trades

Most trading occurs between two franchises but trades can involve multiple franchises. Trades often occur between seasons and for a variety of reasons and represent a form of cooperation in MLB. First, as valuable professional players near the end of their contracts, they may be traded in exchange for other professional players or for developmental level prospects. This might occur when a team realizes its inability, or unwillingness, to retain the professional player's contract and thus tries to get something in return rather than losing the player to free agency. Although the exchange may only be for developmental level players, the trade is a means to acquire prospects who might soon contribute to the professional roster. For example, the Cleveland Indians traded pitcher Cliff Lee, whom they did not intend to re-sign, to the Philadelphia Phillies just prior to the trade deadline (i.e., July 31) in 2009. This provided the Phillies with an elite pitcher whom they needed to perform well in the playoffs and in exchange the Cleveland Indians received four lessor known players whom they sought to develop (Stark, 2009).

Relatedly, trades might occur because teams are looking to unload high priced players during a failing season (i.e., lack of wins and/or poor financial performance) in order to save money and begin rebuilding for the following year. These fire sales, as they are called, generally happen during an unsuccessful season when teams still have a few talented (and likely pricey) players who are coveted by

other teams in contention to make the playoffs. For example, in 2012 the Miami Marlins traded Josh Johnson, Jose Reyes, Mark Buehrle, John Buck, and Emilio Bonifacio to the Toronto Blue Jays for seven lessor known players, all of whom had relatively low compensation. This deal removed $146.5M (over the duration of these contracts) from the Miami Marlins payroll (ESPN, 2012) and provided the Blue Jays with exceptional talent for immediate placement on its professional roster.

Finally, a team may have a very good player in its developmental system that it would like to promote to the professional roster. If a team already has a higher paid player at that position, it's logical to trade that player to make room for newly developed talent. For example, between the 2003 and 2004 season, the Minnesota Twins promoted Joe Mauer, a very talented developmental player to be the starting catcher, leading to a trade of catcher A.J. Pierzynski to the San Francisco Giants for Joe Nathan, Francisco Liriano, and Boof Bonser. This exchange benefitted the Minnesota Twins in many ways; the prospects turned into valuable professional players and Joe Mauer became one of the best catchers in baseball (Bleacher Report, 2008).

As I explain later, players acquired through trades are categorized as "bought" if they join the professional roster in less than two full seasons after being acquired by a team but "made" for those who spend two or more seasons in the acquiring team's developmental system.

Free Agency

The final of four mechanisms to acquire players is through free agency. MLB regulates the process of acquiring and keeping players, giving rights to both players and franchises. Upon signing an amateur player, a franchise controls that player's rights for six years. Franchises may trade or release players, but if not, organizations control players until after a player's sixth year. However, players are

eligible for salary arbitration after the third year of their initial contract.[1] Generally a player's agent and the franchise come to an agreement before arbitration takes place, sometimes extending the player's contract beyond his eligibility for free agency. However, if agreement is not reached, an arbitrator determines an appropriate salary for the player (Baseball Prospectus, 2013). Following arbitration, and assuming the player and franchise have not negotiated another contract, a player becomes a free agent after his sixth year.

Free agency allows a player to sign a contract with any interested franchise and is the first opportunity for a player to choose his destination (i.e., assuming multiple teams are interested). A player's value in free agency largely depends on the market for his services. Interested franchises must have a need for the player's skills and also have the capital available to acquire the player; typically players earn higher salaries when they sign a free agent contract. For example, while Prince Fielder averaged ~$6M per year with the Milwaukee Brewers from 2006-2011, the following year he signed a contract with the Detroit Tigers for $23M per year (Baseball Reference, 2013). Hence, players may switch franchises to obtain larger contracts if they do not receive a competitive offer from their current teams before their contracts expire.[2]

So how exactly do all these forms of human capital sourcing in MLB, the drafting and contract signing of talent, arbitration, trading and free agency, provide information about the make versus buy decision? Although players progressing through the developmental system are typically paid less at

[1] This explanation is for basic reasons which suffice for the purpose of this project. However, contracts are much more complicated in how service time is calculated (e.g., differences exist when players are first brought up to the professional roster and in terms of how many times they are sent back down to the minor league system).

[2] For example, Joe Mauer stayed with the Minnesota Twins although it was rumored his value in free agency would have fetched a larger contract (Lebowitz, 2011). However, this "home-town" deal rarely works out if franchises do not resign players before reaching free agency as this may cause some hurt feelings and resentment on the player side if not offered a competitive contract before free agency occurs (e.g., Albert Pujols formerly of the St. Louis Cardinals and now a member of the California Angels).

earlier stages of their career, the resources devoted to a strong developmental program are costly, and often include signing bonuses to initially attract players. Thus, while it takes more effort (e.g., more scouts, better minor leagues coaches), putting emphasis on the developmental program can provide an organization's professional roster with a consistent pipeline of quality players. In comparison, professional players acquired via trade or free agency may not require much development from the acquiring team but they often demand higher salaries. While initial contracts may seem inequitable to young players, they still have a lot to prove and, in the meantime, require much coaching, training, and facilities. Within this system, young players who progress quickly are of tremendous value. Take, for example, 22 year old Mike Trout of the California Angels, who was one of the best players during the 2012 season yet was compensated just slightly more than the league minimum (Jaffe, 2012) as restricted players are usually underpaid (Krautmann, von Allmen, & Berri, 2009). Accordingly, all teams desire some young talent coming up through their developmental system. By examining the number of acquired players on a team's professional roster, one can surmise what strategy a team emphasizes.

Payroll Cap, Luxury Tax, and Revenue Sharing

A unique aspect of MLB is the absence of a payroll cap, which is used in all other major U.S. professional sports leagues (i.e., NFL, NBA, and NHL) to give small-market teams an equal chance of assembling a successful team, thus promoting competitive balance (Fort & Quirk, 1995). The absence of a payroll cap allows players to earn up to their market value as free agents (i.e., how top managers are compensated in business organizations) but highlights the large disparity in purchasing power between large-market teams (e.g., New York, Los Angeles, and Boston) and small-market teams (e.g., Cincinnati, Tampa Bay, Kansas City). Market size is not a determinant of team performance (Schmidt & Berri, 2002), but there are some positive effects that may come from large-market opportunities (e.g., larger television contracts), namely, some of this capital can be used to secure better players.

However, in addition to allowing poorer performing teams preference in drafting players, MLB also established a luxury tax and revenue-sharing program as means to narrow payroll disparity. The luxury tax, formally called the Competitive Balance Tax, dissuades teams from spending excessive amounts on players' salaries. A threshold for player payroll is established by league management; for example, in 2013 it was $178M (Sporting Charts, 2013). Teams may exceed this amount but are taxed on payroll that exceeds the limit. The tax rate increases for each successive year a team exceeds the limit. Currently this rate begins at 17.5%, followed by 30% and 40% percent for the next two years and finally reaching a maximum of 50% for four time offenders. This rate appears to deter most teams. For example, in 2013 only the New York Yankees (~$229M) and the Los Angeles Dodgers (~$217M) exceeded the $178M threshold (USA Today, 2013). Notably however, the record setting tax the Yankees had to pay in 2013 is comparable to the whole Houston Astros payroll (Nightengale, 2013), leading some to question whether the penalty is severe enough. Over time certain large market teams' fans (e.g., New York Yankees) have even grown to expect paying luxury taxes (Pesca, 2014). The luxury tax provides consequences for overspending and is used by the league for pre-designed purposes, but the tax money is not redistributed to other teams.

Another method aimed to keep the league competitive is the revenue-sharing program, which is essentially a subsidy for small-market franchises. Unlike some professional sports leagues (e.g., the NFL) where revenue is earned on a national level, much of MLB revenue is generated and retained on the local level. The concern is that small-market teams cannot generate the local revenue of large-market teams and therefore will not have the revenue to acquire adequate talent to be competitive. As a remedy, MLB created a system in which all teams pay 31% of net local revenue to be combined and equally distributed to all teams (CBS News, 2008). Large-market teams, such as the Boston Red Sox, are known as "Revenue Sharing Payor Clubs" (i.e., teams which pay a marginal 31% rate on local revenues) and

small-market teams, such as the Pittsburgh Pirates, are known as "Revenue Sharing Payee Clubs" (i.e., teams that receive a portion of the additional marginal rate) (Brown, 2010; Thurm, 2012). Thus, regardless of market share, all teams should have resources which allow them to be active in the free agent market.

Finding a Competitive Strategy

Although MLB established a luxury tax and a revenue-sharing system, team payrolls are far from equal. In 2013, the top seven highest team payrolls were, on average, $124M more than the seven lowest team payrolls (USA Today, 2013). To illustrate this point, individual players on large-market teams (e.g., Alex Rodriguez of the New York Yankees has an individual salary of ~$25M) can make salaries equal to large portions of other teams' entire payrolls. It would seem this imbalance might provide large-market teams with a significant performance advantage. However, due to the strength of developmental programs and the inherent uncertainty of future performance, even for star players, this is not always the case. With less revenue, small-market teams may choose to adopt a make rather than buy approach as their formula for success. To accomplish this, small-market teams might trade their soon to be expensive top talent for high potential minor league players in hopes of building a younger and cheaper yet still talented team. Bill DeWitt Jr., the Yale (B.A.) and Harvard (M.B.A.) educated Chairman of the St. Louis Cardinals stated "we set out way back in '96 to be a consistent contender and we continue to have that goal. It's one of the reasons we put so much emphasis on building the farm system and building our scouting" (Hummel, 2013, para. 8). So if this strategy is implemented successfully, often with a balance of making and buying, capitalizing on both capabilities and cost reductions, small-market teams can be as competitive as large-market teams. Six of twenty teams that competed in the World Series from 2002-2011 were small-market teams (e.g., consider the small-market Tampa Bay Rays of 2008 with a payroll of only $43M, USA Today, 2013). Hence, the developmental system within MLB provides an

interesting and appropriate context to examine optimal human capital sourcing strategies to obtain competitive advantages associated with positive financial outcomes.

CHAPTER III: THEORY AND HYPOTHESES

Concurrent sourcing is best viewed through multiple theoretical lenses (e.g., Parmigiani, 2007). For this study, I use TCE and organizational capabilities to understand and advance knowledge of concurrent sourcing. A growing body of work has blended the two theories, proposing that balancing cost reduction and capability advancement may lead to more realistic and complementary conclusions (e.g., Holcomb & Hitt, 2007; Mayer & Salomon, 2006). Therefore, using the TCE logic and then sorting through the capabilities rationale, theory and hypotheses are developed to identify factors which impact the sourcing decision, and examine how that decision affects performance outcomes.

Buyer-Supplier Relations

Reducing Costs through TCE

The sourcing decision has typically been examined through TCE, starting with Coase's (1937) work and further developed throughout much of Oliver Williamson's career (e.g., Williamson, 1975; 1981; 1985; 1999). TCE identifies the transaction as the unit of analysis with a goal to reduce transaction costs and determine to make or to buy accordingly (Jager & Woke, 2008). TCE posits that these decisions are fueled by asset specificity, uncertainty, and frequency while working under the necessary assumptions of bounded rationality and opportunism (Williamson, 1985). Asset specificity has been dubbed the locomotive of TCE (Williamson, 1985); as assets are more specific to an organization, the organization will more likely need to produce the input (i.e., human capital) internally (Williamson, 1981). Highly specific assets are difficult to find in the market and organizations that do not produce these will be vulnerable to a host of potentially negative consequences (e.g., holdup costs). Asset specificity also often refers to the ability to redeploy assets, generally suggesting more specific assets are less able to be redeployed.

Beyond asset specificity, organizations typically strive to avoid multiple types of uncertainty, which literature reviews have found take on many forms. For example, a review by David and Han (2004) identified three categories and 24 different forms of uncertainty in the TCE literature. A more recent study by Crook and colleagues (2013) also identified three primary categories of uncertainty capturing many different forms. Recognizing its many forms, Geyskens, et al (2006) categorize uncertainty according to three categories, behavioral, technological, and volume. Behavioral uncertainty refers to how difficult it is to verify agreement (Poppo & Zanger, 2002), with greater difficulty causing organizations to prefer hierarchical governance (i.e., make). Technological uncertainty is the degree to which future technology is unknown (Stump & Heide, 1996), with greater unknowns leading organizations to prefer market governance (i.e., buy). Volume uncertainty relates to unknown quantities in the relationship (John & Weitz, 1988), such that as quantities fluctuate and deviate organizations typically favor hierarchical governance (Geyskens et al, 2006). Hence, sourcing decisions are contingent on reducing transaction costs from a variety of uncertainty perspectives and although greater asset specificity often leads to hierarchical governance, greater uncertainty often leads to market governance.

Last, the frequency of transactions will fuel decisions. When needs are infrequent, an organization should seek the market but when the frequency of transactions is high or regular, organizations should consider internal production. In short, frequency refers to how often transactions reoccur. This dimension has received limited attention (Geyskens et al, 2006; Rindfleisch & Heide, 1997), an issue I seek to address and advance theoretically.

Despite the popularity of explaining vertical integration and strategic acquisitions based on the reduction of transaction costs, TCE has remained somewhat silent on the idea of concurrent sourcing (e.g., David & Han, 2004; Parmigiani, 2007). Yet more recent reviews (Geyskens et al, 2006) suggest TCE may provide a powerful lens to view concurrent sourcing in terms of uncertainty and frequency.

The reduction of transaction costs does not merely suggest the selection of make versus buy, but rather, the choice to concurrently source may also provide the greatest reduction of transaction costs contingent on the problem or organizational situation. Thus, TCE may do more than distinguish between make and buy.

Organizations traditionally consider making for greater control but, when assets are less specific, organizations are more likely to defer to the market for the most efficient mode of organizing and also because less specific assets have lower interdependence and embeddedness (Geyskens et al, 2006; Williamson, 1975; 1985). In relation to TCE, much more is known and tested in regards to asset specificity. The theoretical work has been novel (Williamson, 1975; 1985) and the empirical tests have been significant (see David & Han, 2004; Geyskens et al, 2006). To enhance the TCE view I have selected a setting in which asset specificity is low and employees have high skill transferability (Campbell, Coff, & Kryscynski, 2012) in order to more readily focus on uncertainty and frequency, areas that have received less attention but which are critical to concurrent sourcing. Some scholars suggest uncertainty and frequency have little predictive power without asset specificity and that asset specificity is a necessary condition for the make decision (David & Han, 2004), but this is not consistent through all of the literature or in more recent reviews (Geyskens et al, 2006) as some suggest the presence of other important factors (Crook, Combs, Ketchen, & Aguinis, 2013). Geyskens and colleagues (2006) actually find the combined effect of uncertainty had greater impacts on governance choice. Accordingly, my work helps answer two important questions regarding TCE: (1) Under what circumstances do organizations still make even though low asset specificity directs organizations towards market acquisitions? (2) Should organizations give increased attention to uncertainty and frequency?

As mentioned, reviews of uncertainty often define it as behavioral, technological, or related to volume (e.g., Crook et al, 2013; Geyskens et al, 2006); however uncertainty also takes on a multitude of types (see Macher & Richman, 2008) such as performance ambiguity, prior experience, risk and even other categorical forms such as market based, for example in demand or price changes (see David & Han, 2004). When considering human capital sourcing, this conceptualization of uncertainty may be insufficient. Volume uncertainty does not apply as there are consistently 25 members on each major league roster. Behavioral uncertainty is "the degree of difficulty in verifying whether compliance with established agreements has occurred" (Geyskens et al, 2006, p. 525), also not a clear fit for this problem. Many of these uncertainty studies pertain to other problems rather than human capital such as retail and manufacturing (Yu, Yan, & Cheng, 2001), biotech alliances (Santoro & McGill, 2005), and metals (Hennart, 1988). This leads to the conclusion that when applying TCE to human capital sourcing, other less examined forms of uncertainty must be considered. Rather than redefine or relax the definition, I focus on talent uncertainty. While talent uncertainty has been addressed in non-TCE contexts (e.g., Kräkel, & Schöttner, 2010), the closest operationalization might be related to prior experience (i.e., experience of organizations in production and experience of organizations with alliances) as used in previous research (David & Han, 2004). Talent uncertainty could also be considered a form of technological uncertainty, if you define technology as consisting of the human skills and professions that are required to perform work (Barbash, 1984). Henceforth, I address talent uncertainty, which is a more applicable route for scholars studying uncertainty of human capital through the TCE perspective.

While organizations bear higher levels of talent uncertainty when emphasizing the development of human capital because these employees are evolving, they may also enter the market to purchase already developed and less uncertain human capital necessary for their value chain. Hence, at the onset, there is far more talent uncertainty with developed human capital because an individual's potential

remains relatively unknown. Internally developed human capital comes with previously specified benefits and may turn out to be valuable but talent often develops gradually or plateaus at various stages in the developmental process and therefore designing an organization too heavily vertically integrated yields greater talent uncertainty. For example, a line manager may be an excellent decision maker when it comes to technical choices but once promoted to middle or upper management may lack the conceptual skills necessary to make decisions about an organization's vision. Similarly, minor league baseball players may have great hitting or pitching success at lower levels of the developmental system but talent uncertainty remains as to whether these skills will transfer to higher levels.

Alternatively, acquiring "proven" human capital from other organizations reduces talent uncertainty, even if it costs more. These employees have shown an ability to perform at the highest level, so talent uncertainty is less of an issue. The correlation is not perfect, but prior performance is generally a good predictor of future performance, especially when prior performance was achieved at an equivalent level of difficulty. While there is some uncertainty in the market (i.e., it is unknown whether the appropriate players will be available), appropriate planning and bargaining makes this a more secure option. Also, although outside acquisitions are sometimes associated with high risk due to poorer performance when leaving one organization for another (Groysberg, Nanda, & Nohria, 2004), when talent uncertainty is high, acquiring bought talent reduces this type of uncertainty and provides faster speed to market, making this choice particularly valuable in the short run. Therefore, in cases where asset specificity is low, and talent uncertainty varies by organization due to differences in human capital, the desire to reduce talent uncertainty will lead organizations to concurrently source, but to prefer strategic acquisitions as uncertainty increases.

> H1a When talent uncertainty is high, organizations will prefer strategic acquisitions to vertical integration.

After addressing uncertainty, I now examine the third leg of the TCE stool (i.e., frequency) to help explain the logic for organizational sourcing of human capital. Organizations must deal with frequencies of input turnover, whether it is the frequency of machine breakdowns or frequency of human capital changes. Variability and transactions costs both address how and why organizations take certain actions concerning frequencies of input changes. I begin by addressing TCE logic and then rule out variability. I posit therefore, that when asset specificity is low (as in this case), TCE provides superior logic regarding frequencies of human capital turnover in comparison to variation arguments.

TCE research suggests that when frequencies of input turnover or transactions are low, organizations have greater incentives to buy (Williamson, 1985) because producing internally for infrequent transactions requires high administrative costs and therefore produces a low payoff. In the case of product inputs, frequencies fluctuate due to customer demands yet the internal process demands are quite predictable (e.g., an assembly line). However, in the case of human capital, frequencies fluctuate based on customer demands and also due to less predictable employee turnover. Yet the context of MLB falls between more predictable assembly lines and less predictable employee turnover because contracts restrict players from moving to other teams, a similar yet exaggerated version of non-compete clauses required by certain organizations (e.g., staffing companies and law firms). Although there is some unpredictability with player injury, MLB franchises confront fewer unforeseen circumstances impacting organizational personnel (e.g., person-organization fit) than do business organizations and thus MLB allows generalizations about non-human capital inputs as well. High turnover is associated with higher transaction costs but, when frequencies are low, buying this input from the market is more logical because building capabilities for inputs that are infrequently transacted is a large commitment with low payoff. Accordingly, due to the nature of human capital, organizations most likely address the frequency problem by making decisions intended to reduce transaction costs.

Next, attending to frequency concerns in the supply chain is often relegated to production, rather than human capital. With products, systems exist such as six sigma to reduce production variation concerning frequency of replacements, thus allowing for lower variation for internalizing product inputs relative to human capital inputs. However, even when developing internal capabilities to address the frequency problem, in the case of human assets, capabilities do not reach completion or maximization after a specific series of events or duration of time. In short, due to variability in human development, the capabilities logic is less useful in accounting for turnover frequency than it might be when addressing production frequency. Additionally, the variability of inputs is less a function of problematic assessment in this context. Therefore, organizations must utilize external as well as internal resources to address speed to market concerns when dealing with human capital and cannot solely focus on internal capabilities. Hence, although variation may seem like attractive explanation for frequency, the rationale behind this argument is less convincing when examining human assets. Accordingly, TCE plays the greatest role in directing concurrent sourcing due to turnover frequencies, a logic which suggests the following hypothesis.

> H1b When turnover frequencies are high, organizations will prefer vertical integration to strategic acquisitions.

Creating Synergy through Organizational Capabilities

TCE is a prominent and often fundamental mid-range theory explaining sourcing, but other theories are also useful. Even with much work in these areas, TCE has not been utilized to explain concurrent sourcing (Parmigiani, 2007). The following presents the rationale for the capabilities view which has been applied to sourcing (Argyres, 1996; Parmigiani, 2007). By organizational capabilities, I consider the literature from both the RBV and Grant's (1996) work on the knowledge based view (KBV). These perspectives (Barney, 1991; Grant, 1996; Wernerfelt, 1984) are particularly helpful for explaining aspects of sourcing related to resources (including knowledge), capabilities, core

competencies, relatedness (Markides & Williamson, 1996), and the potential for synergy (Barney, 1991; Penrose, 1959; Wernerfelt, 1984). Here, vertical integration and strategic acquisitions of human capital can work together to synergistically enhance resources within the organization. Such potential is derived from the VRINS framework which determines the overall strength of a resource based on its Value, Rareness, Imitability, and Non-substitutability (Wernerfelt, 1989). These types of resources have greater potential to lead to capabilities and a stronger likelihood of providing competitive advantages to an organization.

Because concurrent sourcing includes suppliers and internal processes to obtain human capital, capabilities are not bound to the focal organization. Organizations may develop some inputs, and they may rely on the capabilities of others; this view blends concurrent sourcing with the relational view, a more recent extension of organizational capabilities and RBV (Dyer & Singh, 1998; Lavie, 2006). From this perspective, organizations use capabilities, including organization specific routines and bundled resources (Madhok, 1996) to identify the most value-added means of obtaining the greatest talent, a view that differs from the economizing strategies of TCE.

Organizations that see potential for collaboration between internal processes and strategic acquisitions can optimize these opportunities by utilizing internal talent where applicable but seeking talent acquisitions when necessary. While some organizations have superior processes at the core of their operation, others may have these capabilities throughout the value chain. It is important for organizations to recognize these capabilities and strategically act on them. Organizations with lessor capabilities should seek acquisitions in greater numbers because internal processes are not enhancing their core competencies. Alternatively, organizations that have superior capabilities, while they may concurrently source, should do so with fewer strategic acquisitions and more vertical integration.

Therefore this view suggests that regardless of transactions costs, organizations with strong capabilities will seek to use them which gives rise to the following hypothesis.

> H2a Better internal capabilities will lead to more vertical integration rather than strategic acquisitions.

Parmigiani argues that "the greater the expertise of the firm and its suppliers, the more likely the firm will concurrently source" (2007, p. 292). However, it is also likely that experience and knowledge will lead to continuance. That is, organizations that concurrently source still have a tendency (i.e., routine) to either make or buy a majority of their inputs. Their prior strategic actions will provide a strong indication of the future. Organizations become static, reliable and inert which is often referred to as punctuated equilibrium (Romanelli & Tushman, 1994). Without some major event, this experience, routine, and knowledge will lead an organization down the same path in terms of sourcing.

TCE may support this rationale by suggesting economization on current processes to reduce transactions, but TCE might also suggest abruptly switching due to transaction cost based changes over time. However, simply abiding by transaction costs does not account for activities for which some organizations are superior to others. Conversely, the organizational capabilities view suggests organizations continue to enhance their knowledge and experience in one realm over the other (i.e., vertical integration or strategic acquisitions). Mayer and colleagues also theorize that prior acquisition decisions influence human capital because experience produces systematic differences in capabilities (Mayer, Somaya, & Williamson, 2012). Furthermore, experience also develops absorptive capacity (i.e., the ability to acquire this knowledge). Therefore, absorptive capacity, experience, routines, and knowledge which are all fundamental to the organizational capabilities view suggest that organizations involved in concurrent sourcing will become more proficient in how they have conducted this business, and hence continue in this direction. Thus, organizational capabilities suggest powerful logic in regards to human capital sourcing trends and predict that:

H2b Organizations with greater experience in vertical integration or strategic acquisitions will continue to favor this strategy as they concurrently source.

Resources are often broken into four categories: social capital (Dyer & Singh, 1998), human capital (Lepak & Snell, 1999), technology or knowledge (Grant, 1996), and financial capital.[3] In this study and in the realm of acquiring human capital more generally, organizational resources primarily come in the form of human capital, or financial capital necessary to acquire human capital. Consequently, organizations in larger markets have advantages in accessing capital through larger fan bases, lucrative television contracts, et cetera. Hence, acquiring human capital and providing competitive advantages as talent is accessed quickly through acquisitions rather than through internalization is prominent in larger markets due to their financial advantages over small market teams.

Although capital (i.e., wealth in the form of money or assets) contingent on market size is valuable and somewhat inimitable, few would argue it is rare. Accordingly, market size alone does not meet all of the conditions for a resource to provide sustainable competitive advantages. However, positioning in larger markets is often tied to a variety of capabilities. Furthermore, this access to resources provides enhancements to performance which allow organizations to attract better employees, provide cutting edge facilities, and focus on opportunities (e.g., gain market share through various enhancements). Even if there is an inflection point after which capital provides diminishing returns, organizations can achieve better performance if they are above a minimum threshold. When purchasing an input in the market, an organization must pay a premium if the input possesses valuable and proven capabilities ready for immediate use. Organizations have the option of making inputs internally but the process is costly and takes effort and time. However, capital in this context also includes human capital and human capital fulfills the VRINS framework and thereby positions an organization for sustainable competitive advantage. Consequently, organizations with more capital due to their positioning in larger

[3] Tangible assets are also resources but are less relevant in baseball except for stadiums, offices, etc.

markets have advantages in developing certain capabilities but also more options to strategically acquire other valuable yet often costly inputs. Ultimately, because demand is not always predictable and urgency is often required, organizations with more available capital will acquire talent from the market in greater numbers.

H2c Organizations with more capital will strategically acquire in greater numbers.

Organizational Performance

Performance is arguably the most important construct in strategic management research (Richard, Devinney, Yip, & Johnson, 2009). Over the years, management scholars have investigated the determinants and contingencies of organizational performance to explain performance heterogeneity among structurally similar organizations (Combs, Crook, & Shook, 2005). This research assumes organizational strategy impacts organizational performance (Lubatkin & Shrieves, 1986) and views human capital as fundamental to organizational performance (Castanias & Helfat, 2001; Farjoun, 2002; Gambardella, Panico, & Valentini, 2013; Huselid, Jackson, & Schuler, 1997; Wright & McMahan, 1992). In this extensive literature, performance has been measured many ways (e.g., accounting measures, finance measures, operational measures, power, legitimacy, corporate social responsibility, and so forth), but in this context I look to better understand the impact of sourcing on competitive advantage and how competitive advantage leads to financial performance outcomes.

Competitive advantage has been measured in a variety of ways. Poppo and Weigelt (2000, p. 586) measured it as "the accumulated skill set of free agents" (e.g., a combination of runs created, all-star votes and so forth). Researchers have also used survey questions about low cost, differentiation, and switching costs (Kearns & Lederer, 2003; Parsons, 1983; Porter, 1980), a reduction of defects in semiconductor manufacturing (Hatch & Dyer, 2004), and total quality management scales to operationalize competitive advantage (Coff, 1999; Douglas & Judge, 2001). There have been varying

measures but competitive advantage is often poorly defined and operationalized (Ma, 2000). As in this dissertation, others also suggest competitive advantage comes from organizational competencies yet is part of an organization's strategy and hence leads to other performance outcomes as well (Hofer & Schendel, 1978; Ma, 2000).

Because it is assumed that organizations can pursue different levels of concurrent sourcing to achieve competitive advantage, one cannot predict a priori that higher levels of strategic acquisition or vertical integration will, on average, positively impact performance. As explained earlier, MLB franchises may decide to improve the stock of their human capital by emphasizing the development system or through a judicious use of free agency and trades. Accordingly, merely examining the effects of number of acquired players on competitive advantage may yield non-significant results. However, one can predict that an organization's concurrent sourcing strategy must be properly aligned with an organization's characteristics to positively affect competitive advantage and, similarly, excessive reliance on either strategic sourcing or vertical integration may negatively affect performance.

Organizational Alignment

There are however some alternative explanations to these talent sourcing decisions. Organizations make decisions based on their characteristics, and strategies for one organization may not apply to another. For example, consider two basic organizational strategies, cost leadership versus differentiation (Porter, 1980). It may not be logical for organizations with different foci to carry the same balance of low cost versus differentiated products or services. Rather, organizations should align their product or service offerings with antecedents that drive their focus to ensure better performance (Sender, 1997). Sampson (2004) examines misalignment. She finds the costs of excessive contracting hazards and excessive bureaucracy are reduced by transaction costs based alignments. Furthermore,

sourcing decisions may limit an organization's capabilities, restricting the potential competitive advantage if actions lack alignment with prescriptions.

Some have studied alignment through the transaction cost lens (e.g., Johansson, 2008; Sampson, 2004). Others focused on the consequences of misalignment (Yvrande-Billon & Saussier, 2005). Interestingly, while scholars contemplate whether TCE and organizational capabilities better predict alignment (Yvrande-Billon & Saussier, 2005), both theories favor the fundamentals of alignment strategies. Translated to this case, human capital should be either developed or acquired based on predictions of TCE and organizational capabilities logic. TCE proposes cost reduction through better alignment. For example, TCE predicts that organizations with high turnover frequencies and also high vertical integration will have greater competitive advantage than organizations that would be considered by TCE to be mismatched or misaligned (i.e., low turnover frequencies and high vertical integration or high turnover frequencies and low vertical integration). On the other hand, organizational capabilities predicts organizations may augment their competitive advantage by matching actions with prescribed capabilities. For example, if organizations having an abundance of acquisition experience acquire many players, they will be tapping into this capability and are thus able to increase their competitive advantage. However, if they have great acquisition experience yet choose not to acquire personnel, they will be mismatched or misaligned and accordingly face poorer outcomes.

Despite the differences between TCE and organizational capabilities, both frameworks suggest alignment is valuable. So while I attempt to differentiate between TCE and organizational capabilities to predict concurrent sourcing, the theoretical underpinnings of the two actually merge in the case of alignment. In short, both frameworks suggest that following the strategy predicted based on organizations' specific characteristics and environmental conditions should create competitive advantages for organizations.

Accordingly, I propose that these ideas readily transfer to strategic human capital as each organization has different strengths and weaknesses in talent development and acquisition processes. Thus, by using the alignment logic which accounts for these differences, organizations will gain competitive advantages if concurrently sourced to resemble their strengths. For example, organizations that are better at training should develop/make in greater numbers than organizations that rank poorly at training. Hence, I hypothesize that sourcing may not be a one-size-fits-all scenario, but rather competitive advantage is contingent on organizations' aligning their actual sourcing with the optimal predictions developed through antecedent variables.

> H3a: Organizations with more closely aligned predicted and actual concurrent sourcing will experience greater competitive advantage.

The TMGT Effect

A second alternative to examine performance is through the TMGT effect. The TMGT effect is relatively well established for diversification (e.g., Qian et al, 2008) but not fully addressed for vertical integration or strategic acquisitions. Rothaermel and colleagues (2006) demonstrate that strategic acquisitions enhance new product size, success, and performance, but this occurs only to a certain extent and then the effects become negative. However, their study was less conclusive for vertical integration. Accordingly, I intend to address two important deficiencies in the concurrent sourcing literature. First, I examine inputs in terms of human capital rather than products and, second, I revisit the idea that vertical integration (and not just strategic acquisitions) has a curvilinear impact on competitive advantage, a relationship that seems all too theoretically explainable but was not found to be statistically significant in prior studies (Rothaermel et al, 2006). As opposed to production or manufacturing, vertically integrating human capital is advantageous only to a point due to the lack of lean manufacturing process applicable to products and processes. Hence, acknowledging the TMGT effect for both vertical

integration and strategic acquisitions leads to strategic decisions to concurrently source, an idea that has been explored in manufacturing but not with human capital.

Products, services, and human capital have a place in the vertical integration literature. Yet due to their differences, it is unclear that the rationale used for one is generalizable to others. Vertical integration has deeper roots on the product side as shown in studies on the auto industry (Monteverde & Teece, 1982), manufacturing (Anderson, 1985), petroleum production (Armour & Teece, 1980), and so forth, which describe factors affecting whether organizations do or do not vertically integrate. So, how might the integration of human capital differ from production or service? I suggest these varying inputs be looked at separately before making generalizations. Further, prior studies using products found only strategic acquisitions had a clear TMGT effect (Rothaermel et al, 2006); perhaps when examining human capital, the TMGT effect will be apparent for vertical integration, if exceeding a certain level of vertical integration forces organizations to rely too heavily on their own capabilities and networks to develop human talent. Alternatively, excessive levels of strategic acquisitions require organizations to evaluate too much talent, incur heavy search costs, and deal with less internal knowledge which makes organizations more susceptible to opportunism. In short, organizations heavily weighted in vertical integration or strategic acquisitions will risk diminishing competitive advantage. In contrast, organizations that are concurrently sourced will enhance competitive advantage by avoiding the pitfalls of overly internalized or overly acquired organizations. MLB offers an extraordinarily clear metric for addressing competitive advantage (i.e., team wins). If organizations can optimally balance sourcing, competitive advantage will be enhanced.

> H3b Strategic acquisitions will positively impact revenue but with diminishing returns such that the relationship will resemble an inverted U-shape.

Competitive Advantage

The theoretical relationship between competitive advantage and financial performance has been addressed in strategic management (e.g., Barney, 1991; Porter, 1985), but the construct of competitive advantage is less clear empirically (Ma, 2000). Competitive advantage comes in many forms, including shedding costs and creating synergies. Among the sources of competitive advantage are knowledge (Grant, 1996), social capital (Dyer & Singh, 1998), total quality management (Douglas & Judge, 2001; Powell, 1995), and human resource systems (Lado & Wilson, 1994), to name a few. Scholars often use competitive advantage to discuss their views of strategy suggesting "this" or "that" will lead to competitive advantages and, thus better performance. In this case, properly balanced sourcing is thought to lead to positive financial outcomes such as revenue or sales[4] through competitive advantage. Despite certain examples discounting the value of competitive advantage, such as the rent appropriation problem (Coff, 1999) and low constraint general human capital (Campbell et al, 2012), most research assumes or confirms logic suggesting competitive advantage moderates or mediates financial performance (Ray, Barney, & Muhanna, 2004). I account for distinct differences in competitive advantages between organizations, positing that organizations must have strategies (e.g., concurrent sourcing) to gain competitive advantage before they can enhance financial performance. These ideas lead to the final hypotheses.

> H4a Competitive advantage will mediate the relationship between number acquired and revenue, yielding a positive indirect relationship.
>
> H4b Competitive advantage will mediate the relationship between number acquired and sales, yielding a positive indirect relationship.

Table 1 (below) presents a summary of the hypotheses. This table includes all of the hypotheses from Study 1 and Study 2.

[4] Revenue is total amount of money each team receives while sales is operationalized as number of tickets sold (i.e., fan attendance).

Table 1. Summary of Study Hypotheses

H1a	When talent uncertainty is high, organizations will prefer strategic acquisitions to vertical integration.
H1b	When turnover frequencies are high, organizations will prefer vertical integration to strategic acquisitions.
H2a	Better internal capabilities will lead to more vertical integration rather than strategic acquisitions.
H2b	Organizations with greater experience in vertical integration or strategic acquisitions will continue to favor this strategy as they concurrently source.
H2c	Organizations with more capital will strategically acquire in greater numbers.
H3a	Organizations with more closely aligned predicted and actual concurrent sourcing will experience greater competitive advantage.
H3b	Strategic acquisitions will positively impact revenue but with diminishing returns such that the relationship will resemble an inverted U-shape.
H4a	Competitive advantage will mediate the relationship between number acquired and revenue, yielding a positive indirect relationship.
H4b	Competitive advantage will mediate the relationship between number acquired and sales, yielding a positive indirect relationship.

CHAPTER IV: RESEARCH DESIGN

The sample selection, procedures for data collection, and methods of analysis are described in this chapter.

Sample and Variables

Archival data were collected for 30 Major League Baseball organizations spanning 10 years from 2002-2011. Data used in the analyses were collected from various sources, such as *Baseball Almanac, Forbes,* and *USA Today,* among others (see Table 2 for a complete list of sources matched with variables). A ten year sample provides an adequate snapshot of league roster composition. By ending in 2011 the data avoid complications created by rule changes in 2012 which impacted the amateur draft process (Baseball America, 2012). Although there were some other changes during these years,[5] the duration represents a relatively stable time period to analyze the questions being asked. Each professional organization has 25 members on its roster. For each of these professionals, I identified whether they came through the organization's minor league system (i.e., make) or whether they were acquired from another organization directly becoming a member of the professional roster (i.e., buy). As a caveat, if talent was acquired and placed in the developmental program for at least two full seasons, these individuals were considered to come up through the developmental system. Making this determination for each player/team/year was a lengthy process (i.e., nearly 10,000 determinations). To consistently select these 25 players for each team and year, I first identified the starting lineup, starting pitchers, primary relief pitchers, and closing pitcher according to categories on the *Baseball Reference* website based on players' end of the season categorization. After selecting these players, any remaining spots on a team's 25-man roster were filled by choosing non-pitchers in order of most games played for

[5] In 2008 MLB added limited instant replay (Baseball Almanac, 2013).

Table 2. Variables and Sources

Independent Variables	Definition	Source
Professional Experience	The number of players on the team's 25-man professional roster who have greater than six years of experience.	Baseball Reference
Annual Player Turnover	The number of players on the team's 25-man professional roster who were not on the team's roster the prior season.	Baseball Reference
Developmental Ranking	An annual ranking of each team's developmental program (1-30), listing the best developmental program as 1 and the worst as 30.	Baseball America
Acquisition Experience	The number of players on the team's 25-man professional roster who were acquired (moving average for three prior years).	Baseball Reference
Small-Market Size	A dichotomous variable: 1 for teams that are in the 15 smallest markets. *Large-Market Size* Teams are the excluded group.	Bleacher Report
Buy as Predicted	A dichotomous variable: 1 for teams that acquire the number of players predicted. Teams that acquire more/fewer players than predicted are the excluded group.	Baseball Reference
Dependent Variables		
Number Acquired	The number of players on the team's 25-man professional roster who were acquired.	Baseball Reference
Team Wins	The number of wins the team has during the 162 game regular season.	ESPN
Made Playoffs	A dichotomous variable: 1 for teams that made the playoffs, 0 for all other teams.	Baseball Reference
Revenue	Annual team revenue (in millions of dollars).	Forbes
Average Attendance	The team's average attendance for home games.	ESPN
Control Variables		
Number of All-Stars	The number of players on the team's 25-man professional roster who were selected to play in the All-Star game.	MLB.com
Team Salary	Annual aggregate compensation paid to all players on the team's 25-man professional roster (in millions of dollars).	USA Today
Ownership Change	A dichotomous variable: 1 for the initial three years a team has a new owner, 0 for all other years.	Bleacher Report
General Manager Change	A dichotomous variable: 1 for the initial three years a team has a new general manager, 0 for all other years.	Baseball Reference
New Stadium	A dichotomous variable: 1 for the initial three years a team plays in a new stadium, 0 for all other years.	Ball Parks of Baseball

the team that season. Finally, the players for each team and year were totaled in order to analyze the data at the team level.

Independent Variables

Table 2 is ordered in relation to the prior hypotheses for ease of readership. I briefly explain the rationale for each TCE based variable as it aligns with the hypotheses. Players with greater than 6 years of professional experience have demonstrated their abilities. For example, experienced outfielders are more likely to initiate movement in the correct direction when fielding fly balls (Oudejans, Michaels, & Bakker, 1997). Accordingly, *Professional Experience* seems an appropriate proxy for talent uncertainty in assessing these players' future performance such that low talent uncertainty is equivalent to a high count of players with experience and high talent uncertainty is equivalent to a low count of players with experience. Six years is also a natural cutoff point because teams have the rights to players' contracts for this duration. Player turnover is also an important consideration in baseball research (e.g., Glenn, McGarrity, & Weller, 2001). *Annual Player Turnover* is used to demonstrate how many members of the team's 25 man professional roster are replaced annually, a measure of the frequency of player transactions for each organization.

The next set of independent variables relates to the organization capabilities hypotheses. *Developmental Capabilities* are measured by rankings of organizations' developmental programs, a historically well-studied labor market also known as the minor leagues and farm system (Rottenberg, 1956). These rankings are an assessment of the stock of talent in an organization's developmental system which is an indirect assessment of an organization's ability to scout and develop talent. Next, prior numbers of acquired players as a predictor of future numbers are measured through *Acquisition Experience* such that the experience and routines of past acquisition numbers will predict future acquisition numbers. A three-year lagged moving average is used for the *Acquisition Experience* variable (e.g., for 2007, it is the average of 2004-2006 number acquired). Finally, in terms of

organizational capabilities and the resource variable, *Small-Market Size* is reported as a dichotomous variable indicating which teams compete in large or small markets. Market size demonstrates resource richness and the financial ability to more freely acquire talented players in the marketplace; it is often comprised of items such as metropolitan statistical area population or media revenue (see Schmidt & Berri, 2002 for a more complete listing). The market size measure for this study was selected from *Bleacher Report,* a reputable source for sports statistics in business research (e.g., Harrington, 2014). For robustness, this list was also compared to the competitive balance lottery which gives priority to the 10 smallest market and 10 lowest revenue teams provided by *MLB.com.* The separate lists were in agreement in approximately 93% of cases and when competitive balance was used as a replacement for *Small-Market Size,* significant/non-significant results did not change.

Buy as Predicted is derived from the *Number Acquired* variable to test the alignment hypothesis. This alignment based variable represents the residuals from the equation used to predict *Number Acquired* (observed *Number Acquired* minus the predicted *Number Acquired*). Two groups are created. The cut-off point is one standard deviation from the mean such that approximately two-thirds of the teams fell within the *Buy as Predicted* category and one-third in the misaligned category (further rationale for categorization is presented in the methodology and results). Buying too much or too little based on organizational characteristics represents misalignment and thus forms the excluded category. This is consistent with organizational alignment studies that align governance to improve performance (e.g., Sampson, 2004).

Dependent Variables

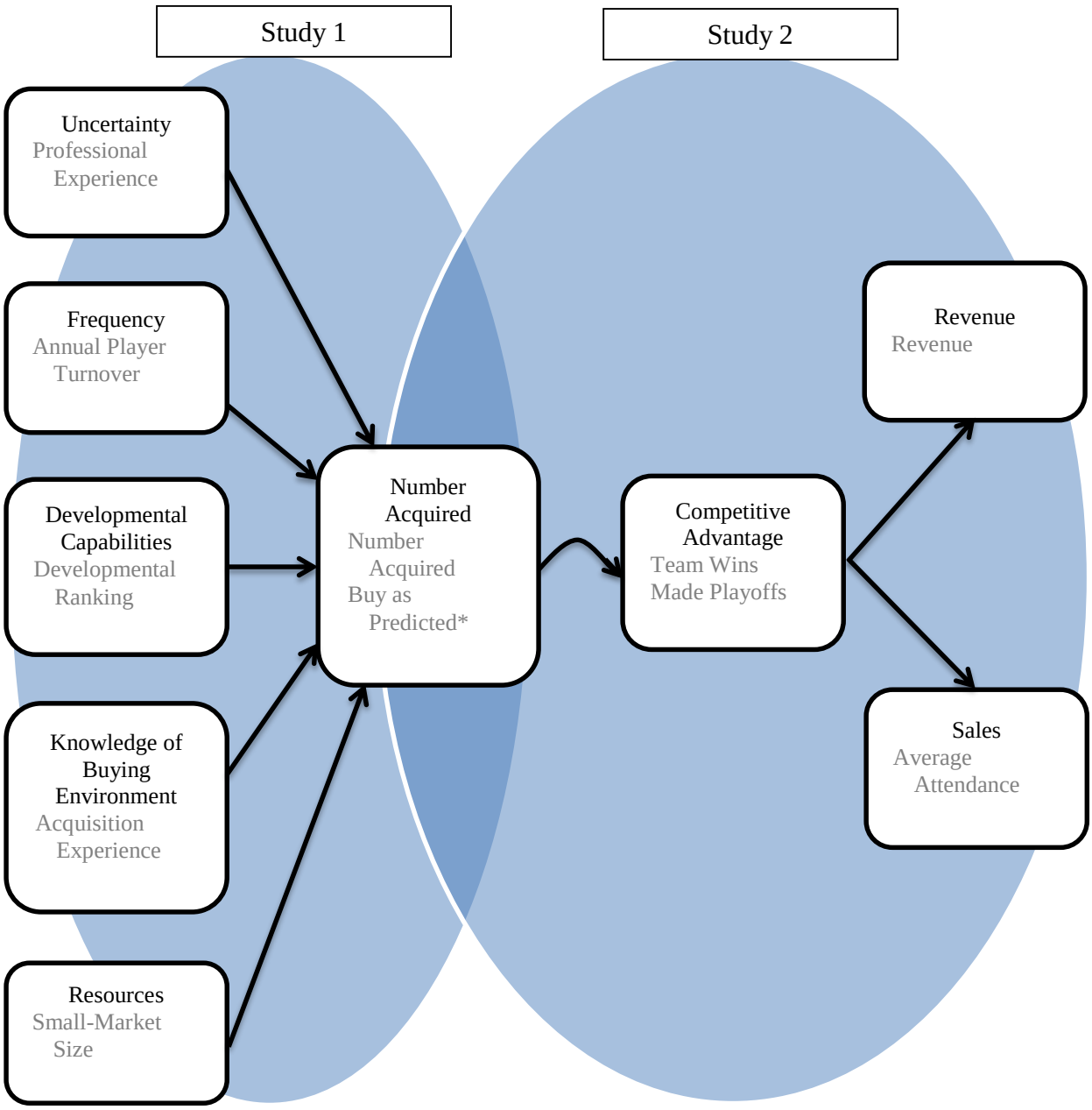
The *Number Acquired* is an endogenous variable in the model. This number is the outcome of the five make/buy antecedents yet is secondarily an antecedent to competitive advantage and a direct effect to the financial outcomes. If players are drafted or acquired through other means and spend two

full seasons in a club's developmental system, they are considered "made" players. Otherwise if players are acquired through trade or through free agency they are considered "bought" or "acquired" players. There are two remaining dependent variables: *Revenue* and *Average Attendance* for which *Team Wins* (and *Made Playoffs)* is a mediating variable. Firstly, *Team Wins* is a count of the number of games a team wins in the 162 game regular season. Using *Team Wins* based on the entire season rather than the post-season outcome is appropriate since organizational capabilities actually account for a low percentage of post-season success (Lewis, Lock, & Sexton, 2009). *Made Playoffs* signifies whether a team is one of eight teams that advanced to post-season play. Both *Team Wins* and *Made Playoffs* are measures of competitive advantage as both variables measure a team's success directly compared to the competition. *Revenue* and *Average Attendance* are measures of financial performance. *Revenue* is a team's annual revenue and is made up of items such as sponsorships, real estate, ticket sales, and concessions (Forbes, 2013; Schwartz, 2013). *Average Attendance* at home games is a more direct proxy for ticket sales and is a commonly studied and cited outcome in sports research (e.g., Baade & Tiehen, 1990). An additional consideration when selecting the sample years was the time frame. The time period used for this study provides relative consistency for attendance, excluding the 1994-1995 strike among other things (Nesbit & Kerry, 2012).[6] An overview of the variables and predicted coefficient directions in association with the theoretical model are displayed below in Figure 2.

Control Variables

Control variables are used in both analyses. Control variables were chosen selectively and more conservatively in accordance with research that suggests ambiguous or less meaningful controls confound interpretations of findings (Carlson & Wu, 2011). I begin by discussing the controls used in Study 1 to examine the antecedents of the make versus buy decision. Changes in ownership (*Ownership*

[6] Other attendance drivers include events such as the 1998 McGuire-Sosa homerun race, Cal Ripken Jr.'s consecutive games record, and the onset of fantasy baseball leagues (Nesbit & Kerry, 2012).



Note The theoretical framework is in black text and the variables are in grey text.
*Residual analysis to determine if firms buy more or less than predicted.

Figure 2. The Theoretical Model Including Variables

Change) and top management (*General Manager Change*) are included to account for the possible effects that new top management has on organizational decisions related to the acquisition of players since research suggests these key management figures impact roster composition based on their

preferences, decision making, and networks (Hersch & Pelkowski, 2012; Rosentraub, 2000). These variables account for leadership change for three years after a change occurs because it takes time for new strategies to develop and for major roster changes to come to fruition.

Next I describe the controls used in the performance analyses (i.e., *Team Wins* and *Made Playoffs; Revenue* and *Average Attendance*). *Team Salary* and *Number of All-Stars* are separate proxies for roster quality. *Team Salary* is an aggregate of all players' salaries on the 25 player roster for each season. While multiple studies have shown salary compression enhances performance (Bloom, 1999; Jane, 2010), I'm interested in understanding whether total salary spending impacts performance outcomes. *Number of All-Stars* is the number of players on the team's 25-man professional roster who were selected to play in the All-Star game. With approximately 750 players on all professional rosters (i.e., 30 teams * 25 players), getting selected as one of the ~80 players who make the All Star game demonstrates top talent and is therefore an appropriate proxy for quality (Foster & Washington, 2009). Additionally, new stadiums should drive performance outcomes, particularly *Revenue* and *Average Attendance,* as fans are drawn to the new and presumably improved facilities. This novelty effect lasts up to eight years in baseball but is particularly strong during the first few seasons (Coates & Humphreys, 2005). Lastly, in recognizing the endogeneity of *Number Acquired* in the theoretical model, the antecedents from Study 1 are included as controls for the analyses of performance outcomes. However, because these controls are likely more applicable for the current year, they are not lagged in the performance equations as they are in Study 1. Of the variables from Study 1, *Small-Market Size* may be of particular importance. Although some studies show *Small-Market Size* does not impact wins, it does have an impact on revenue (e.g., Gustafson & Hadley, 2007). Additionally, in Study 1, *Professional Experience* is viewed positively (i.e., reducing talent uncertainty); however, older players are often overpaid (Blass, 1992) which could have an opposite impact on *Revenue.*

Descriptive Statistics: Major League Baseball, 2002-2011

Before formally testing the hypotheses, I will briefly describe data used in subsequent analyses. Table 3 shows descriptive data by team for each variable used in Study 1. The teams are sorted in descending order on mean *Number Acquired*, which is the central focus of my dissertation. The mean *Number Acquired* for teams was 16.5 of 25 players on the professional roster. The highest mean *Number Acquired* was nearly 20 players for the Chicago White Sox, whereas an intra-division rival, the Minnesota Twins, had the lowest at 11.7 players. Interestingly, all but two teams, the California Angels and the Minnesota Twins, averaged more acquired players (13+) than made players on their 25 man professional rosters. Also, somewhat surprising for baseball fans, the New York Yankees, arguably the poster child for free agent spending, had a mean *Number Acquired* of 15.8, placing them among the 10 lowest of the 30 MLB teams. It may be that the Yankees' reputation as a buyer in the free agent market reflects their high profile talent acquisitions rather than the number of such acquisitions.

Comparing the teams mean *Number Acquired* with data on the antecedent variables used in Study 1 also yields some interesting patterns. As one would expect, the mean *Number Acquired* corresponds closely to the mean *Acquisition Experience*, but differences between the two measures suggest teams do change strategies over time. Regarding mean *Professional Experience*, some organizations averaged very few players with six or more years of professional experience such as the Tampa Bay Rays (an average of 4.9 of 25 players), while other organizations prefer more experienced rosters like the Boston Red Sox (16.1 of 25) and New York Yankees (17.7 of 25). The data show that only three of the top ten teams in mean *Number Acquired* have single digit mean *Professional Experience*, while seven of the bottom ten teams in mean *Number Acquired* have single digit mean *Professional Experience*, suggesting that having more acquired players results in a more experienced professional roster. The data also show that teams with the highest mean *Number Acquired* tend to be

among the highest in mean *Annual Player Turnover* and likewise teams low in mean *Number Acquired* tend to have low mean *Annual Player Turnover*. To my surprise, on average, teams turned over nearly half of their rosters each year (11.6 of 25 players on average).

Regarding mean *Developmental Ranking*, a couple of teams like the Tampa Bay Rays and Atlanta Braves stood out as having very good player development systems, with average rankings of 6.2 and 6.6 respectively. At the other end were the Houston Astros with a mean *Developmental Ranking* of 23.4 and the St. Louis Cardinals with a mean *Developmental Ranking* of 23.7. Although casual baseball fans may not be surprised by the Rays, Braves, and Astros, the Cardinals are now often lauded for their outstanding minor league system. This reflects a change in organizational strategy that occurred nearly ten years ago. In fact, "from 2005 to 2011, no team in the majors had as many drafted players contribute at the major-league level as the Cardinals" (Goold, 2013, para. 11).[7] In general, the data appear to suggest that teams with better player development systems (i.e., lower mean = higher rank) also have averaged fewer acquired players.

As for market size, there is not much difference between the numbers of large market teams at the top or bottom of the distribution on mean *Number Acquired*; seven of the top 10 teams in mean *Number Acquired* are in large markets and six of the bottom 10 teams are in large markets. In contrast, only two of 10 teams in the middle of the distribution are in large markets, suggesting that large market teams may be more likely to choose one strategy when making their make versus buy decisions.

Table 4 provides a comparison of teams across each of the dependent variables used in the analyses for Study 2. These data also reveal some notable differences. Although a discernable pattern between mean *Number Acquired* and mean *Team Wins* is not immediately apparent in the data, collectively the 12 teams below the mean *Number Acquired* accounted for more playoff appearances

[7] Through the efforts of Branch Rickey, the St. Louis Cardinals are also credited with inventing the farm system in the early 1900s (National Baseball Hall of Fame and Museum, 2014).

(41) than the remaining 18 teams (36). Not surprising, teams with better performance on the field (i.e., *Team Wins* and playoff appearances) tended to be among the top teams in average home attendance. The top five winningest teams were the New York Yankees, Boston Red Sox, California Angels, St. Louis Cardinals, and Philadelphia Phillies, while the poorest performing teams were the Kansas City Royals, Pittsburgh Pirates, Baltimore Orioles, Washington Nationals, and Tampa Bay Rays. As expected, number of playoff appearances generally mimics *Team Wins* although there are some cases where even the difference in a couple average *Team Wins* determines quite a difference in number of playoff appearances (e.g., the Minnesota Twins averaged only two more *Team Wins* than the Chicago White Sox yet made the playoffs three times as often). The New York Yankees which were below the mean *Number Acquired* for 2002-2011 had the highest number of wins, most playoff appearances, highest average revenue, and highest average home attendance. Lastly, *Average Attendance* is impacted by the number of seats each stadium holds. For example, it is well known that the Boston Red Sox sell out almost (if not) every game yet their attendance only ranks as number nine as their stadium is older and holds fewer fans. It is clear that the demand is high, however, since the ticket prices are more expensive which still makes the Boston Red Sox number two in *Revenue.*

Table 3. Descriptive Statistics for Study 1

Teams	Professional Experience (Rank)	Annual Player Turnover (Rank)	Developmental Ranking (Rank)	Acquisition Experience (Rank)	Small-Market Size	Mean Number Acquired (Rank)
White Sox	12.2 (9)	10.8 (23)	19.1 (24)	16.2 (10)	0	19.7 (1)
Padres	10.9 (11)	13.8 (2)	20.4 (26)	17.6 (3)	1	19.5 (2)
Red Sox	16.1 (2)	10.6 (25)	15.3 (14)	18.2 (1)	0	19 (3)
Mets	14.6 (4)	13.1 (4)	20 (25)	17.8 (2)	0	18.3 (4)
Rangers	8.3 (24)	13.4 (3)	12.4 (8)	17.1 (5)	0	18.2 (5)
Dodgers	13 (8)	12.9 (5)	11.2 (6)	17.3 (4)	0	18.1 (6)
Marlins	7.6 (27)	12.5 (8)	12 (7)	14.5 (22)	1	17.9 (7)
Brewers	10.6 (14)	12.7 (6)	13.2 (11)	16.2 (10)	1	17.8 (8)
Expos-Nationals	10 (16)	13.9 (1)	22.3 (28)	14.8 (20)	0	17.8 (8)
Orioles	9 (21)	12 (12)	18.4 (22)	17 (6)	1	17.8 (8)
Cardinals	14.7 (3)	10.6 (25)	23.7 (30)	16.5 (9)	1	17.6 (11)
Indians	8 (25)	11.4 (20)	8.9 (4)	16.9 (7)	1	17.2 (12)
Reds	11.2 (10)	11 (22)	16.9 (18)	15 (18)	1	17.1 (13)
Athletics	7.7 (26)	11.8 (14)	17 (19)	15.2 (15)	1	17 (14)
Tigers	10.3 (15)	11.7 (15)	21.5 (27)	15.1 (17)	0	16.8 (15)
Mariners	10.9 (11)	11.6 (17)	15.1 (13)	15.9 (12)	1	16.6 (16)
Rays	4.9 (30)	12.4 (9)	6.2 (1)	15 (18)	1	16.6 (16)
Cubs	14.1 (5)	11.5 (18)	12.9 (9)	16.7 (8)	0	16.5 (18)
Giants	14 (6)	11.7 (15)	15.7 (15)	15.5 (14)	0	16.3 (19)
Royals	9.2 (20)	12.4 (9)	18 (21)	14.1 (24)	1	15.8 (20)
Yankees	17.7 (1)	10.8 (23)	14.2 (12)	15.8 (13)	0	15.8 (20)
Phillies	13.7 (7)	9.4 (28)	16.4 (17)	13.9 (25)	0	15.5 (22)
Pirates	7.3 (29)	12 (12)	18.5 (23)	13.7 (27)	1	15.5 (22)
Diamondbacks	9.4 (17)	12.6 (7)	17 (19)	15.2 (15)	1	15 (24)
Astros	9.3 (19)	10.4 (27)	23.4 (29)	14.2 (23)	0	14.9 (25)
Blue Jays	7.4 (28)	11.3 (21)	16 (16)	13.8 (26)	0	14.9 (25)
Braves	10.8 (13)	12.2 (11)	6.6 (2)	14.7 (21)	0	14.2 (27)
Rockies	8.9 (22)	11.5 (18)	12.9 (9)	13.3 (28)	1	13.5 (28)
Angels	9.4 (17)	8.3 (29)	11.1 (5)	11.5 (29)	0	11.7 (29)
Twins	8.5 (23)	8.1 (30)	8.8 (3)	10.7 (30)	1	11.7 (29)
Total Averages	10.7	11.6	15.5	15.3	0.5	16.5

Table 4. Descriptive Statistics for Study 2

Teams	Mean Number Acquired (Rank)	Mean Wins (Rank)	Number of Playoff Appearances	Average Revenue in Millions (Rank)	Average Home Attendance (Rank)
White Sox	19.7 (1)	84.6 (10)	2	174 (13)	27,852 (20)
Padres	19.5 (2)	77.5 (20)	2	157 (21)	29,886 (15)
Red Sox	19 (3)	93.2 (2)	6	238 (2)	36,015 (9)
Mets	18.3 (4)	79.5 (17)	1	213 (3)	37,223 (8)
Rangers	18.2 (5)	81.8 (12)	2	170 (14)	29,720 (16)
Dodgers	18.1 (6)	85.2 (8)	4	209 (5)	43,168 (2)
Marlins	17.9 (7)	80.8 (13)	1	135 (29)	17,599 (30)
Brewers	17.8 (8)	77.3 (21)	2	152 (23)	30,989 (13)
Expos-Nationals	17.8 (8)	72.5 (27)	0	160 (20)	21,475 (27)
Orioles	17.8 (8)	69.6 (28)	0	165 (17)	27,595 (21)
Cardinals	17.6 (11)	90.1 (4)	6	184 (8)	40,345 (3)
Indians	17.2 (12)	78.4 (19)	1	164 (18)	24,381 (23)
Reds	17.1 (13)	77 (22)	1	153 (22)	25,602 (22)
Athletics	17 (14)	85.2 (9)	3	144 (26)	22,919 (25)
Tigers	16.8 (15)	76 (24)	2	166 (16)	28,906 (19)
Mariners	16.6 (16)	75.8 (25)	0	183 (9)	32,267 (11)
Rays	16.6 (16)	75 (26)	3	141 (27)	17,769 (29)
Cubs	16.5 (18)	80 (15)	3	210 (4)	38,405 (6)
Giants	16.3 (19)	84.6 (10)	3	183 (9)	38,837 (5)
Royals	15.8 (20)	66.8 (30)	0	135 (29)	19,935 (28)
Yankees	15.8 (20)	97.5 (1)	9	343 (1)	47,949 (1)
Phillies	15.5 (22)	89.8 (5)	5	196 (6)	37,314 (7)
Pirates	15.5 (22)	67.9 (29)	0	138 (28)	21,686 (26)
Diamondbacks	15 (24)	78.7 (18)	3	163 (19)	29,386 (17)
Astros	14.9 (25)	79.9 (16)	2	179 (12)	32,889 (10)
Blue Jays	14.9 (25)	80.8 (13)	0	150 (25)	24,362 (24)
Braves	14.2 (27)	88.9 (6)	5	183 (9)	31,081 (12)
Rockies	13.5 (28)	77 (22)	2	170 (14)	30,898 (14)
Angels	11.7 (29)	90.9 (3)	6	189 (7)	39,399 (4)
Twins	11.7 (29)	86.6 (7)	6	151 (24)	28,985 (18)
Total Averages	16.5	81	2.7	177	30,495

Similarly, Table 5 summarizes data for the control variables. Regarding management and ownership changes, there were many more total changes in general manager (48) than in ownership

(18). No organization had more than one change in ownership during the 10 year duration. However, a number of teams had three or four changes in general manager (i.e., Chicago Cubs, Arizona

Table 5. Descriptive Statistics for Control Variables

Teams	Number of Ownership Changes	Number of General Manager Changes	Mean Number of All-Stars (Rank)	Mean Team Salary (Rank)	New Stadium from 2002-2011
Angels	1	1	2.4 (12)	101.8 (6)	0
Astros	1	2	1.9 (21)	82.2 (14)	0
Athletics	1	0	1.6 (25)	57.5 (24)	0
Blue Jays	0	2	2.1 (16)	68.1 (18)	0
Braves	1	1	3.3 (3)	92.4 (8)	0
Brewers	1	1	2.7 (7)	61.5 (22)	0
Cardinals	0	1	3.3 (3)	90 (11)	1
Cubs	1	3	2.2 (14)	105.2 (4)	0
Diamondbacks	1	3	2 (20)	68.2 (17)	0
Dodgers	0	2	2.6 (9)	100.2 (7)	0
Expos-Nationals	1	3	1.2 (30)	52.1 (27)	1
Giants	1	0	2.1 (16)	89 (12)	0
Indians	0	1	1.9 (21)	59.2 (23)	0
Mariners	0	3	2.1 (16)	92.1 (9)	0
Marlins	0	2	2.3 (13)	41.1 (29)	0
Mets	1	3	2.7 (7)	116.7 (3)	1
Orioles	0	3	1.3 (29)	72.7 (16)	0
Padres	0	1	1.4 (26)	53.4 (25)	1
Phillies	0	2	3 (6)	102.1 (5)	1
Pirates	1	1	1.4 (26)	43 (28)	0
Rangers	1	1	3.2 (5)	74 (15)	0
Rays	1	1	2.1 (16)	39.3 (30)	0
Reds	1	3	1.9 (21)	63.8 (21)	1
Red Sox	1	4	5.1 (1)	130.2 (2)	0
Rockies	1	0	1.7 (24)	65 (20)	0
Royals	0	1	1.4 (26)	52.3 (26)	0
Tigers	0	1	2.6 (9)	87.9 (13)	0
Twins	1	2	2.2 (14)	67.3 (19)	1
White Sox	0	0	2.5 (11)	91 (10)	0
Yankees	1	0	5.1 (1)	187.5 (1)	1
Total Averages	0.6	1.6	2.4	80.2	0.3

Diamondbacks, Washington Nationals, Seattle Mariners, New York Mets, Baltimore Orioles, Cincinnati Reds, and Boston Red Sox). To my surprise, general manager turnover only occurred in approximately 22 percent of ownership changes. Mean *Number of All-Stars* varies from just over the minimum, which is 1 per team, up to 5.1 (i.e., for both the Boston Red Sox and New York Yankees). All but four teams fall between 1.4 and 3.3 average players selected for the All-Star game. Eighty million dollars was the average *Team Salary* during the 2002-2011. However, the New York Yankees averaged 187.5 million dollars for player payroll, more than 50 million dollars more than any other organization. Five other organizations averaged greater than 100 million dollars in annual payrolls, and nine organizations operated with payrolls under 60 million dollars, demonstrating an obvious disparity in payroll spending. Finally, eight MLB teams built new stadiums from 2002-2011, but none built more than one.

Finally, descriptive statistics and correlations for all variables used in the analyses are provided in Tables 6 and 7. There were no missing data and all variable means, standard deviations, minimum and maximum values passed inspection. The variance inflation factor (VIF) scores range from approximately 6-13, and 10 is often the upper end of the recommended threshold. Exceeding 10 reveals greater multicollinearity, which can reduce the overall r-squared, confound estimation of the regression coefficients as well as negatively impact statistical significance test of the coefficients (Hair, Black, Babin, & Anderson, 2010). However, for equations that exceed VIF scores of 10, these can generally be ignored for three reasons: high VIF scores in the controls (e.g., *Team Salary*), high VIF scores due to the inclusion of powers (i.e., *Number Acquired Squared*), and when high VIF scores are dummy variables with three or more categories (i.e., 29 team dummy variables) (Allison, 2012). These considerations reveal no major problems with multicollinearity.

Table 6. Descriptive Statistics and Correlations for Study 1

	Mean	SD	1	2	3	4	5	6	7	8
1. Number Acquired	16.48	2.95	1							
2. Professional Experience	10.66	3.81	0.19**	1						
3. Annual Player Turnover	12.05	3.59	0.28**	-0.10^	1					
4. Developmental Ranking	15.5	8.67	0.22**	0.20**	-0.04	1				
5. Acquisition Experience	16.76	2.7	0.65**	0.32**	0.30**	0.08	1			
7. Small-Market Size	0.5	0.5	-0.01	-0.36**	0.05	-0.04	0.06	1		
8. Ownership Change	0.17	0.38	-0.10^	-0.05	0.04	0.02	-0.05	-0.03	1	
9. General Manager Change	0.39	0.49	0.12*	-0.08	0.13	0.07	0.03	-0.03	0.11*	1

N = 300

** $p < 0.01$. * $p < 0.05$. ^ $p < 0.1$

Table 7. Descriptive Statistics and Correlations for Study 2

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Revenue+	170.9	52.9	1											
2. Average Attendance	30495	8735	.64**	1										
3. Team Wins	81	11.6	.33**	.51**	1									
4. Number Acquired	16.47	2.95	-.10*	-.03	-.06	1								
5. Professional Experience	10.66	3.81	.39**	.65**	.42**	.30**	1							
6. Annual Player Turnover	12.05	3.59	-.18	-.30**	-.19**	.27**	-.17**	1						
7. Developmental Ranking	15.5	8.67	.02	.06	-.05	.18**	.20**	.02	1					
8. Acquisition Experience	16.76	2.7	.02	.06	-.12*	.65**	.28**	.19**	.05	1				
9. Small-Market Size	.5	.5	-.38**	-.44**	-.29**	-.01	-.38**	.16**	-.04	.06	1			
10. Number of All-Stars	2.36	1.6	.43**	.42**	.60**	.07	.34**	-.23**	-.05	.01	-.27**	1		
11. Team Salary+	80.23	34.73	.82**	.76**	.42**	-.067	.63**	-.26**	.09	.02	-.53	.45**	1	
13. New Stadium	.08	.27	.24**	.16**	-.02	.00	.15*	-.06	.14*	.07	-.01	.02	.17	1

N = 300

+ in Millions of Dollars (USD)

** $p < 0.01$. * $p < 0.05$. ^ $p < 0.1$

Looking first at the variables used in the analyses for *Number Acquired* (Study 1) Table 6 shows several significant correlations for the hypothesized relationships. As predicted, *Developmental Ranking* and *Acquisition Experience* are positively and significantly correlated with *Number Acquired*. But two correlations are in the opposite direction of what was hypothesized. *Professional Experience* and *Annual Player Turnover* are both significantly correlated with *Number Acquired* yet they are both positive rather than negative as predicted. Perhaps the presence of more experienced players on a team reflects the organization's desire to choose experience over youth, thus leading to more player acquisitions through free agency and trades. And it is possible that organizations must seek the market when experiencing turnover rather than rely on the developmental system. *Small-Market Size* was not significantly correlated with *Number Acquired,* though the relationship is negative as hypothesized. Significant correlations are observed between *Ownership Change* and *Number Acquired* (negative) and between *General Manager Change* and *Number Acquired* (positive).

Table 7 shows correlations for variables used in the analyses of performance outcomes that comprise Study 2. Starting with the relationships among the three dependent variables in the analyses (*Team Wins*, *Average Attendance*, and *Revenue*) we see that *Team Wins* is positively and significantly correlated with both *Revenue* and *Average Attendance*, suggesting that success on the field improves organizational performance. When examining the relationships between the antecedent/control variables and the three dependent variables that are the focus of Study 2, Table 7 shows the relationships to be very similar across the dependent variables. For example, *Professional Experience*, *Number of All-Stars*, and *Team Salary* are all positively and significantly correlated with *Team Wins, Revenue,* and *Average Attendance*; and *Annual Player Turnover* and *Small-Market Size* are both negatively and significantly correlated with *Team Wins, Revenue,* and *Average Attendance*. There were however a few unique relationships. *Number Acquired* is significantly correlated (negative) only with *Revenue*; *Acquisition*

Experience is significantly correlated (negative) only with *Team Wins*; and *New Stadium* is significantly correlated with *Revenue* and *Average Attendance* (both positive) but not *Team Wins.*

Methodology

The methodological design for both studies is as follows. The make versus buy decision is operationalized as a continuous rather than discrete variable. This contrasts with other research that treats the make-buy-concurrent sourcing decision as trichotomous (Parmigiani, 2007). Therefore, I test the make versus buy decision through regression rather than multinomial logistic regression to allow the endogenous *Number Acquired* to more freely vary. Analyzing the make versus buy decision in this manner allows for the possibility that organizations that make 79% could be significantly different than those that buy 79%, rather than treating these outcomes as equivalent examples of concurrent sourcing, an idea more recent studies are beginning to consider (e.g., Sako, Chondrakis, & Vaaler, 2013).

To test the theoretical model illustrated in Figure 1, I first examine the antecedents of *Number Acquired*. Then, for Study 2, I examine how *Number Acquired* affects *Revenue* and *Average Attendance* through the mediating variable, *Team Wins*. Regarding the latter, a separate analysis is also conducted to test the organizational alignment hypothesis (i.e., H3a). Although the theoretical model shows *Number Acquired* as a mediating variable between the antecedents of the sourcing decision and competitive advantage, I am not hypothesizing this as a mediation model for Study 1. Rather I seek to examine factors affecting the sourcing decision and how that decision subsequently affects performance outcomes through *Team Wins*. Due to the obvious endogeneity of *Number Acquired* for the analyses of performance outcomes, I include the five antecedent variables (i.e., *Professional Experience, Annual Player Turnover, Developmental Capabilities, Acquisition Experience,* and *Small-Market Size*) when conducting the mediating analyses for Study 2.

For Study 1, a regression model is used to determine which antecedents significantly impact *Number Acquired* (see Table 8, Study 1). To test Study 2, organizational alignment is tested using the residuals from the *Number Acquired* equation, the TMGT effect using *Number Acquired* and its squared term in the regression analysis, and mediation models are used to determine the impact of *Number Acquired* on *Revenue* and *Average Attendance* through *Team Wins.* Mediation occurs when the effect on a dependent variable (Y) is explained by an intervening variable (M), rather than directly by the independent variables (X) (Schurer-Lambert, 2013). To provide results for Study 2, I use a simple mediation model (Bedeian, 2012; Hayes, 2013) tested with panel data (Cole & Maxwell, 2003).

Baron and Kenny (1986) suggest a 3-step procedure to test mediation, regressing the dependent variable on the predictor, regressing the mediator variable on the predictor, and regressing the dependent variable on both the mediator and the predictors (Taylor, 2010). While this technique has drawn some criticism (see Hayes, 2013: 167-170), a 3-step regression analysis is appropriate for testing the hypothesized relationships in this study and provides the most straightforward and robust analysis. Mediation "specifies the existence of a significant intervening mechanism between an antecedent variable and a consequent variable" (Venkatraman, 1989, p. 428). Hence, to test the model for Study 2, I use a three stage regression analysis to predict how *Number Acquired* directly impacts *Revenue* and *Average Attendance*, how *Number Acquired* impacts *Team Wins*, and finally to predict how *Number Acquired* impacts *Revenue* and *Average Attendance* through *Team Wins* (see Table 8, Study 2). If the direct effect is reduced yet still significant, there is partial mediation, and if the direct effect is no longer significant, there is full mediation (Hair et al, 2010). Reference to Zhao, Lynch, and Chen's (2010) decision tree also clarifies the type of mediation present (i.e., complementary, competitive, indirect, direct, or none).

In addition to Figure 1, to test the organizational alignment hypothesis, I use the residuals from the *Number Acquired* regression analysis to group teams into two categories: *Buy As Predicted* and *High/Low Buy; Buy as Predicted* teams more closely follow what is expected, that is near zero residuals of the observed *Number Acquired* minus predicted *Number Acquired*; and *High*/*Low Buy* teams pursue more of an acquiring/developing strategy (i.e., identified by positive/negative residuals of the observed minus predicted). The residuals for each organization provide evidence to determine which teams acquire more (or fewer) players than expected. This test allows me to determine if alignment, *Buy as Predicted*, leads to better performance than misalignment, *High/Low Buy*. To perform the analysis, *High/Low Buy* is the excluded category (see Table 8, alignment hypothesis). Various methods of creating these groupings were considered and ultimately the most objective choice seemed to be using one standard deviation from the mean to categorize teams as *High/Low Buy,* and within one standard deviation from the mean to represent *Buy as Predicted.*

As mentioned, to conduct the above analyses I use regression and include the appropriate control variables as described above. There are three remaining methodological issues to address not previously mentioned. First, when estimating the equation for *Number Acquired,* all antecedents are lagged one year because roster composition is likely determined by factors and decisions that precede the start of the baseball season. However, although the outcomes of decisions about *Number Acquired* will not likely be observed until the following season, the same antecedents are not lagged when used as control variables for Study 2 since they may have an immediate impact on performance. To maintain a sample of 300 observations, additional data were collected for the lagged years.

Secondly, there are some issues to consider related to my data. I have collected archival data for each MLB team for every year from 2002 to 2011. These panel data are strongly balanced, meaning there is no missing data for each team-year observation. The basic assumptions necessary for ordinary

least squares (OLS) regression are normality, homoscedasticity, linearity, and an absence of correlated errors (Hair et al, 2010). Panel data however creates problems for these standard assumptions as the organizations are not independent of one another from year to year, therefore violating homoscedasticity and correlated errors assumptions.

There are several estimation techniques available when analyzing panel data, including fixed-effects models and random effects models. Random effects models assume that the specific effects of the independent variables are uncorrelated. "If you have reason to believe that differences across entities have some influence on your dependent variable then you should use random effects" (Torres-Reyna, 2014, p. 25). On the other hand, fixed effects models explore the relationship between independent and dependent variables within an entity and are best used when the impact of variables that vary over time are not the result of random variation. Because organizations do not vary in completely random ways from year to year, a fixed effects model is more logical for this dataset. Furthermore, I have all the teams and all levels rather than a sample of possible levels; this too conceptually supports the fixed effects model. In addition, statistical tests are also available to help determine whether fixed or random effects models are more suitable. To best determine which model to use, Stata offers a Hausman test to determine whether errors are correlated with regressors. The Hausman test treats random effects as the null hypothesis and fixed effects as the alternative hypothesis. If the probability of chi-squared is significant ($p < 0.05$), the fixed effects model is appropriate. "It basically tests whether the unique errors are correlated with the regressors, the null hypothesis is they are not" (Torres-Reyna, 2014, p. 29). Since my results for the Hausman test are significant, I estimate the models using fixed effects.

Two common options for estimating fixed effects models to account for problems inherent in the use of panel data are Least Squares Dummy Variables (LSDV) and Panel Corrected Standard Errors (PCSE). I chose to use PCSE because it corrects for serial autocorrelation and heteroskedasticity

problems in the panel. Accordingly, I estimate pooled organization models using panel corrected standard errors (PCSE) (Garand, 2010), a function available in STATA's data analysis software package (i.e., "xtpcse *variables*, corr(psar1) hetonly"). Essentially, the estimates of β will be consistent but the standard errors will be inaccurate. Hence this function "takes into account the contemporaneous

Table 8. Empirical Equations

Study 1: Number Acquired Regress the DV on the IVs $Number\ Acquired = \alpha + y \sum Controls + \beta_{11}\, Professional\ Experience + \beta_{12}\, Annual\ Turnover + \beta_{13}\, Developmental\ Ranking + \beta_{14}\, Acquisition\ Experience + \beta_{15}\, Small\text{-}Market\ Size + \varepsilon_2$
Study 2: Alignment Hypothesis $Team\ Wins = \alpha + y \sum Controls + \beta_{11}\, Buy\ as\ Predicted + \varepsilon_1$
Study 2: TMGT Hypothesis $Team\ Wins = \alpha + y \sum Controls + \beta_{11}\, Number\ Acquired + \beta_{12}\, Number\ Acquired^2 + \varepsilon_2$
Study 2: Revenue mediating equations: Step 1: Regress the DV on the IVs $Revenue = \alpha + y \sum Controls + \beta_{11}\, Number\ Acquired + \beta_{12}\, Number\ Acquired^2 + \varepsilon_1$ Step 2: Regress the mediator on the IVs $Team\ Wins = \alpha + y \sum Controls + \beta_{21}\, Number\ Acquired + \beta_{22}\, Number\ Acquired^2 + \varepsilon_2$ Step 3: Regress the DV on both the IVs and the mediator $Revenue = \alpha + y \sum Controls + \beta_{31}\, Number\ Acquired + \beta_{32}\, Team\ Wins + \beta_{33}\, Number\ Acquired^2 + \varepsilon_3$
Study 2: Average Attendance mediating equations: Step 1: Regress the DV on the IVs $Average\ Attendance = \alpha + y \sum Controls + \beta_{11}\, Number\ Acquired + \beta_{12}\, Number\ Acquired^2 + \varepsilon_1$ Step 2: Regress the mediator on the IVs $Team\ Wins = \alpha + y \sum Controls + \beta_{21}\, Number\ Acquired + \beta_{22}\, Number\ Acquired^2 + \varepsilon_2$ Step 3: Regress the DV on both the IV and the mediator $Average\ Attendance = \alpha + y \sum Controls + \beta_{31}\, Number\ Acquired + \beta_{32}\, Team\ Wins + \beta_{33}\, Number\ Acquired^2 + \varepsilon_3$

correlation of the errors (and perforce heteroscedasticity)" (Beck & Katz, 1995, p. 638) by using the residuals to provide a consistent estimate and confirmed through Monte Carlo experiments (Beck & Katz, 1995), a common practice for running fixed effects models (see Garand, 2010).

CHAPTER V: RESULTS

Study 1

The results for the TCE and organizational capabilities hypotheses are presented in Model 1 of Table 9.[8] As mentioned, each of the five antecedents is lagged by one year as personnel decisions are more likely to take form based on experiences and decisions derived from the previous season. For Hypothesis 1a, greater *Professional Experience* is expected to lead to fewer players acquired; though the coefficient for *Professional Experience* is negative, it is not significant. Accordingly, the results do not provide support for hypothesis 1a. Hypothesis 1b predicts that higher levels of *Annual Player Turnover* will lead to a higher number of developed players; the coefficient for this hypothesis is also not significant. Hence, neither of the TCE hypotheses are supported.

Hypothesis 2a predicts that organizations with better developmental capabilities should adopt a strategy emphasizing player acquisition rather than player development. The significant positive coefficient for *Developmental Ranking* (0.05, $p < 0.01$) supports this hypothesis; the lower a team's developmental system is ranked, the more acquired players they have on their professional rosters. Hypothesis 2b predicts that *Acquisition Experience* positively impacts the number acquired, a prediction which the coefficient also significantly supported (0.34, $p < 0.01$). The final organizational capability hypothesis predicts that greater organizational resources will lead to more acquisitions but this hypothesis is not supported by the results. So while neither TCE hypotheses are supported, two of the three organizational capabilities predictions were significantly supported.

[8] For complete results see Appendix A.

Table 9. Results from Study 1 Regression Analysis

	B	SE
Professional Experience	-0.05	(0.05)
Annual Player Turnover	0.03	(0.04)
Developmental Ranking	0.05**	(0.01)
Acquisition Experience	0.34**	(0.07)
Small-Market Size	-2.13	(1.70)
Ownership Change	-0.51	(0.33)
General Manager Change	0.50^	(0.27)
Organization fixed effects	Yes	
Observations	300	

Notes: Column 1 reports coefficients and standard errors (in parentheses) from panel regressions. *** $p < 0.01$. ** $p < 0.05$. * $p < 0.1$

Study 2

Hypotheses 3a and 3b predict *Team Wins*. Results of the analysis to examine the alignment hypothesis (3a) are presented in Model 1 of Table 10.[9] As referenced in the methodology, observations were divided into two groups: *Buy as Predicted* and the misaligned category (e.g., the excluded category). The *Buy as Predicted* group contained a majority of the observations (204) while the misaligned group included observations greater or less than one standard deviation from the mean (96 observations). Although I predicted more aligned organizations to perform better, the results of the *Buy as Predicted* category were not significant and thus hypothesis 3a was not supported. For robustness, three groups: *Low Buy, High Buy,* and *Buy as Predicted* were also tested to determine if high or low buy had different impacts on misalignment; however this too did not produce significant findings by excluding the *Buy as Predicted* group.

[9] For complete results see Appendices B-E

Table 10. Results from Study 2 Regression Analysis

	Team Wins Alignment	Team Wins TMGT	Revenue+	Revenue+	Average Attendance	Average Attendance
	H3a	H3b		H4a		H4b
	B(SE)	B(SE)	B(SE)	B(SE)	B(SE)	B(SE)
Number Acquired		-3.27(1.26)**	-3.29(3.93)	-3.43(3.85)	-649.07(577.43)	-652.11(553.31)
Number Acquired Squared		.09(.04)*	.09(.12)	.10(.12)	19.40(17.92)	19.57(17.21)
Professional Experience	1.01(.18)**	1.05(.19)**	-2.68(.56)	-3.08(.57)**	346.50(79.92)**	241.28(82.75)**
Annual Player Turnover	-.52(.19)**	-.48(.19)*	-.40(.54)	.44(.53)	-165.76(73.92)*	-157.07(71.11)*
Developmental Ranking	-.06(.06)	-.04(.06)	-.07(.18)	-.06(.18)	-1.50(24.84)	-10.78(23.96)
Acquisition Experience	-.53(.24)*	-.39(.25)	-.62(.75)	-.42(.74)	429.02(117.59)**	447.87(118.18)**
Small-Market Size	-11.7(5.79)*	-13.67(4.81)**	-63.66(39.00)	-64.17(41.15)	-1712.07(3906.12)	-1207.27(4484.19)
Number of All-Stars	2.90(.32)**	2.97(.32)**	2.60(.99)**	1.35(1.04)	541.03(123.12)**	258.81(129.58)*
Total Salary+	-.03(.02)	-.05(.02)	1.10(.09)**	1.10(.09)**	85.12(13.69)**	90.31(13.49)**
New Stadium			20.54(7.41)**	21.04(7.21)**	1347.04(1189.50)	1354.15(1151.71)
Team Wins				.46(.15)**		109.13(19.97)**
Buy as Predicted	-.08(.92)					
Organization fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	300	300	300	300	300	300

Notes: Columns 1–6 report coefficients and standard errors (in parentheses) from panel regressions.
+ in Millions of Dollars (USD)
** $p < 0.01$. * $p < 0.05$. ^ $p < 0.1$

Hypothesis 3b predicted *Number Acquired* (-3.27, $p < 0.01$) and *Number Acquired Squared* (0.09, $p < 0.05$) to have a curvilinear impact on competitive advantage (i.e., *Team Wins*) such that *Number Acquired* would have a positive impact on *Team Wins* but only to a certain extent eventually diminishing as more players are acquired. While the predictors provide significant results, they differ in one important respect. Rather than an inverted U relationship, the results show *Number Acquired* has a negative impact on *Team Wins* but, after a team acquired ~16 players further player acquisition begins to have a positive impact. Accordingly, the results support the notion that the relationship between the two variables is curvilinear, but as a U rather than inverted U relationship (see Figure 3).

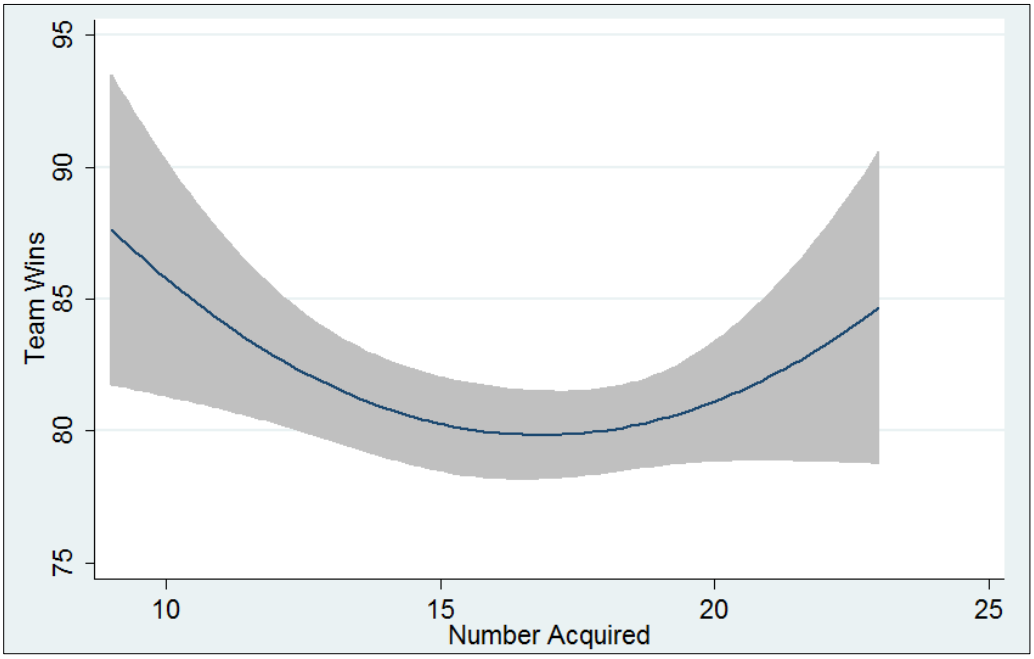


Figure 3. The Curvilinear Impact of Number Acquired on Team Wins

Hypotheses 4a and 4b predict that *Number Acquired* (and *Number Acquired* Squared) will lead to higher *Revenue* (4a) and higher *Average Attendance* (4b) through the mediating variable, *Team Wins*. *Team Wins* is a significant predictor of both *Revenue* (0.46, $p < 0.01$) and *Average Attendance* (109.13, $p < 0.01$). For each additional win, *Revenue* increases by $460,000. The direct effects of *Number Acquired*

(-6.19, $p < 0.05$) and *Number Acquired Squared* (0.19, $p < 0.05$) are not significant predictors of *Revenue* which according to Baron and Kenny (1986) is a necessary condition for mediation. However, more recent research suggests that there are varying types and levels of mediation (Zhou, Lynch, & Chen, 2010). Therefore, because *Team Wins* has a significant impact on *Revenue* and, in accordance with Zhou and colleagues (2010), I conclude *Team Wins* partially mediates (i.e., indirect-only mediation) *Number Acquired* and *Revenue* thus providing support for hypothesis 4a.

Next, for each additional win I find that *Average Attendance* increases by ~109 people. Although the direct effects of *Number Acquired* (*Number Acquired Squared*) also do not significantly predict *Average Attendance*, *Number Acquired* (*Number Acquired Squared)* significantly predict *Team Wins*, and *Team Wins* significantly predict *Average Attendance* (109.13, $p < 0.01$) which provides indirect-only mediation and support for hypotheses 4b (Zhou et al, 2010).

For robustness, *Made Playoffs* was used as an alternative to *Team Wins* in the equations. The results reinforce hypothesis 3b as *Number Acquired* (-0.17, $p < 0.05$) and *Number Acquired Squared* (0.01, $p < 0.05$) have a similar impact on *Made Playoffs* as they did on *Team Wins.* Moreover, *Made Playoffs* also has similar significant relationships as *Team Wins* when used as a mediating variable in the *Revenue* equation. However, *Made Playoffs* did not significantly predict greater *Average Attendance.*

For further robustness the analyses were conducted for sub-samples of MLB. Baseball is broken up into two leagues: The American League and the National League.[10] The leagues are the same in most ways except that the American League has a designated hitter rather than having the pitcher hit. However, this does lead to more pinch hitting which in turn leads to more pitching changes in the National League. It's possible this difference influences team behaviors and strategies when developing

[10] There are also three divisions within each league generally categorized by geographic location and titled the West, Central, and East. However, because the division samples were relatively small (i.e., an average of 50), results for divisions are not reported.

or acquiring personnel. The National League also had 16 teams whereas the American League had 14 teams from 2002-2011. This makes it more difficult for National League teams to gain additional revenues and attendance by making and playing more games during the playoffs. Hence the leagues have some fundamental differences that may alter the effects and therefore I ran the analyses for each league to see if the results varied by league. The results of the analyses for the two leagues show a few notable differences. *Developmental Ranking* is significant for only the National League. The curvilinear relationship as seen in Figure 3 is significant only for the American League and the impact *Team Wins* has on *Revenue* is also significant only for the American League. Further considerations about these league differences are provided in the discussion section.

Control Variables

Several control variables are significant predictors of *Number Acquired* in Study 1. Although the results of *Ownership Change,* of which there were 18 in the sample, did not predict *Number Acquired, General Manager Change* leads organizations to more of an acquisition based strategy (0.50, $p < 0.10$). This may reflect a difference between owners, who may be more willing to pursue a long term strategy of investing in the team's developmental program, and general managers who adopt a win now strategy perhaps to enhance their own job security.

In Study 2, a number of controls are also significant predictors. *Developmental Ranking* and *Acquisition Experience* are significant predictors in the equation testing the alignment hypothesis while *Professional Experience, Annual Player Turnover,* and *Small-Market Size* are significant predictors in the equation testing the TMTG hypothesis demonstrating the importance of controlling for endogeneity by including variables from Study 1. *Number of All-Stars* significantly impact *Team Wins* when testing the alignment (0.20, $p < 0.01$) and TMGT hypotheses (2.97, $p < 0.01$). Several control variables also impact financial outcomes in the mediating models (i.e., columns 4 and 6 in Table 10). When predicting

Revenue, *Professional Experience* has a significant, negative impact (-3.08, $p < 0.01$). Yet *Professional Experience* has a significant, positive impact on *Team Wins* and on *Average Attendance* (241.28, $p < 0.01$). This negative impact on *Revenue* could be due to higher labor costs as more experienced players earn higher salaries. While *Annual Player Turnover* does not significantly affect *Revenue*, it negatively impacts *Average Attendance* (-157.07, $p < 0.05$). *Acquisition Experience* positively impacts *Average Attendance* (447.87, $p < 0.01$). *Number of All-Stars* positively impacts *Average Attendance* (258.81, $p < 0.05$), a finding most baseball fans might expect. *Team Salary* positively impacts both *Revenue* (1.10, $p < 0.01$) and *Average Attendance* (90.31, $p < 0.01$). Perhaps this is due to fans' desire to watch well-known, high-paid athletes.[11] Having a *New Stadium* positively impacts *Revenue* (21.04, $p < 0.01$) but not *Average Attendance*. Finally, as fixed-effects models, 29 organization controls were included (i.e., the New York Yankees organization was the excluded category) in the analyses for both studies. These results can be examined in Appendix A through E.

[11] The natural log of *Team Salary* also had positive and significant results on the outcomes. The natural log transforms *Team Salary* to account for a wide variation among teams, eliminating undesirable characteristics and providing a better measure of the relationship (Hair et al, 2010).

CHAPTER VI: DISCUSSION AND CONCLUSION

Three fundamental gaps in the literature led to this research. First, concurrent sourcing has received a great deal of attention in the past few years yet there still is a lack of clarity as to how, why, and at what levels it is advantageous to organizations. Secondly, as much of the developed world has moved toward knowledge and service economies, improving our understanding of human capital is necessary, particularly in terms of how organizations source and how the decision impacts performance. Third, as competitive advantage is fundamental to strategic management, working to more precisely know how it impacts financial performance is important to academicians and organizational decision makers. Hence, the purpose of this study is to answer three fundamental questions: What factors affect organizations' decisions to source their human capital? How do these decisions impact competitive advantage? Does competitive advantage mediate the relationship between sourcing decisions and financial outcomes?

This study advances research on the concurrent sourcing of human capital by applying various theoretical perspectives to examine the causes and consequences of sourcing decisions within a labor intensive industry. To empirically test these questions, regression and mediated regression using panel data were used within the MLB setting. The results indicate that various organizational characteristics impact human capital sourcing, that sourcing impacts competitive advantage, and competitive advantage mediates the relationship between sourcing and financial outcomes. In conducting this research, I contribute to the literature in the following areas as discussed below: TCE and organizational capabilities; the TMGT effect and organization alignment; and competitive advantage. This discussion is followed by implications for managerial practice, limitations and future research, and the conclusion.

This research assesses the usefulness of TCE when applied to sourcing human capital rather than sourcing production, which is often the focus of TCE based research. Parmigiani (2007) found

organizational capabilities to be a superior predictor of sourcing to TCE in small manufacturing firms. Consistent with her findings, organizational capabilities also proved more useful as a predictor of sourcing decisions for human capital in MLB. Although the TCE lens was not helpful in determining human capital sourcing, talent uncertainty and frequency were useful TCE concepts in addressing performance. On the other hand, the organizational capabilities reasoning proved very useful to explaining sourcing decisions and in examining performance outcomes. Namely, an organization's developmental capabilities and experience play a critical role in both. In short, I find that in the context of sourcing human capital in MLB, organizational capabilities provides superior explanatory power relative to TCE.

Next, although I failed to find support for the importance of organizational alignment to organizational performance, curvilinear effects of sourcing strategies on organizational outcomes appear to be an important consideration for human capital scholars. According to the results (i.e., U shape), rather than acquiring human capital based on organizations' characteristics, or balancing their sourcing, organizations are better off specializing in either greater internal or external sourcing. Organizations that did not specialize, either in a make or a buy strategy, had lower organizational performance (see Figure 3 for a graphical representation). This graphical representation of the results is notable as one can clearly see that varying levels of concurrent sourcing have varying impacts on performance. These results also support my belief that concurrent sourcing should not be treated as a dichotomous phenomenon. The U shape for this relationship indicates that organizations performed best when they used very little or nearly all talent acquisitions rather than balancing. Perhaps specializing in developing human capital (i.e., high make) builds team camaraderie and/or tacit knowledge among players. (Berman, Down, & Hill, 2002). However, camaraderie doesn't explain why a greater rather than marginal number of strategic acquisitions also enhance performance. Thus if just marginally putting efforts toward one

sourcing type did not appear helpful, organizations may need to make more of a commitment toward one strategy or another in terms of sourcing human capital. There has been a great deal of recent emphasis on this meta-theoretical principal (i.e., TMGT effect) and the results of this study provide more evidence that scholars should continue to consider the likelihood that many relationships, including the acquisition of human capital in sourcing decisions, are actually curvilinear.

Finally, this study contributed to the strategic management literature by utilizing a context which provides a clear metric for competitive advantage, a very common concept in strategic management that often proves difficult to capture empirically. This allowed me to demonstrate how human capital sourcing decisions may impact competitive advantage and confirm that competitive advantage positively impacts financial performance. The impact that competitive advantage has on financial outcomes further establishes the importance of giving continued practical and scholarly attention to this concept. To the extent that organizations can establish competitive advantage, their financial outcomes will be superior to their competitors. As competitive advantage remains fundamental to strategic management, it is of upmost importance that more studies empirically validate a difficult to operationalize construct.

There are also implications for managerial practice. Because specializing in vertical integration or strategic acquisitions of human capital was most advantageous in terms of organizational outcomes, organizations may want to focus heavily on training and development if they desire to pursue vertically integrating talent. This might involve expanding the human resources department in terms of training, development, recruiting, and so forth. On the other hand, training and development programs may represent a loss of resources for partial commitment toward development and vertical integration of employees, particularly because training can be a costly process if star apprentices are not recruited

(Krautmann, Gustafson, & Hadley, 2000). Additionally, management may consider identifying how their top employees were sourced to determine whether development or acquisition strategies have been more effective.

Limitations and Future Research

Although the contributions of this research are useful to theory and practice, they are not without some limitations. First, while the goal was to better explore talent uncertainty and frequency, choosing a context with low asset specificity may be an inappropriate way to determine whether TCE or organizational capabilities sheds more light on sourcing human capital. Some scholars argue that asset specificity is essential to the fundamental ideas of TCE and that without asset specificity, TCE theory is less applicable and useful (e.g., Whyte, 1994) and that asset specificity is a necessary condition to use the transaction cost lens (David & Han, 2004). In the case of MLB, players develop nearly identical skills regardless of the team they play for thus reducing asset specificity. However, teams have contract rights of players for six years after players join the professional roster. In that regard, contracts add a certain amount of asset specificity and incentivize teams to develop players more precisely for their needs during this duration. Accordingly, contract rights provide some asset specificity hence diminishing this limitation.

Secondly, sporting contexts are excellent when used for appropriate questions (Holcomb et al, 2009; Wolfe et al, 2005), but MLB still has a few limitations when trying to generalize to other contexts. First, smaller-market teams are awarded subsidies from larger-market teams in order to level the playing field. This is rarely seen in other industries and is in fact often reported in popular press as just the opposite suggesting large corporations get better incentives in lieu of supporting small business. Thus, this redistribution of funds is slightly less generalizable to organizational studies. Next, the extremely low threat of entry in this context differs from that of most industries. While MLB may resemble

oligopolies, oligopolies do not represent a majority of organizations. In addition, the context also resembles industries that have, at one time or another, been highly regulated such as airlines, trucking, and telecommunications. However, these industries too have become less regulated over time. Ultimately, despite these limitations, MLB is actually a very good context to address these questions for a number of reasons. MLB is unlike any of the other major sports in the United States, as it does not employ a payroll cap. Because a payroll cap restricts the amount of money teams can spend on human capital, selecting a sport without a payroll cap is most relevant to compare to other business organizations. The lack of a payroll cap leads to a wide disparity in payrolls among the 30 teams in the league and creates an interesting dynamic just as other business organizations greatly vary in size and spending. Additionally, the player development structure in MLB is an aspect that is absent from other sports in which players are drafted and immediately join the professional roster (e.g., NFL, NHL and NBA). In this way, a baseball team's developmental system is like those found in many organizations where managerial talent is through the ranks of the organization (in comparison to arriving through other organizations). Public accounting, law firms, and consulting firms act in a similar fashion often having 5-6 tiers in which employees typically move up or out after a certain duration. In sum, MLB is much less (if at all) limiting in making generalizations to organizations for the questions in this study.

Regarding future directions for studying human capital sourcing, my hope is that this is a timely study incorporating human capital with concurrent sourcing literature as scholars look to better understand concurrent sourcing (Parmigiani, 2007) as well as find ways in which human capital leads to competitive advantages (Coff & Kryscynski, 2011). In addition to demonstrating ways in which human capital enhances organizational performance, other future studies may come from this work. For example, governance is often discussed as make, buy, or ally. While ally is not examined in the present study, this context also has trading among organizations, an avenue that could further tap into concurrent

sourcing and differences between trading for (i.e., relational, cooperation, or ally) and acquiring. Researchers could also examine whether teams mimic sourcing ratios of other successful teams that have similar characteristics. This may lead to interesting discoveries in institutional theory and isomorphism regarding organizations' strategic decisions and which characteristics organizations are most likely to imitate. Another area of further study could look more closely at alignment. While organizational alignment has proven relevant in other contexts (e.g., Sampson, 2004), it was insignificant in this study. Perhaps scholarship would benefit from more studies pertaining to the alignment of human capital to help determine how taking action based on organizational characteristics may lead to competitive advantages, maybe utilizing other research methods, such as qualitative methods, multilevel studies, or tests in other contexts. A further investigation of league and division differences might provide a setting to better understand human capital sourcing differences among various strategic groups or clusters within an industry because in this context (i.e., MLB teams compete more often with intra-division rivals), as with many industries, organizations' performance is not only dependent on the industry but also largely dependent on the strength of their direct and closest competitors within strategic groups (Rothaermel, 2013). Finally more broad considerations could be studied determining why certain organizations divested and more specifically by looking at free agent rankings within developmental capabilities.

At an individual level, ownership and general manager data in MLB is extremely interconnected which could further studies on top management team turnover and networks within an industry (e.g., Hersch & Pelkowski, 2012). As seen with the control variables, this is an applicable context to study owner and top management changes. Further studies could uncover whether owners change due to performance, what characteristics cause general managers to migrate from team to team, the impact of varying ownership types (e.g., syndicate or family), and so forth. Human resource scholars could also

utilize this context for research in the recruiting literature as each MLB team has teams of recruiters and scouts trying to identify talented personnel.

In conclusion, human capital and concurrent sourcing have received a great deal of attention in the strategic management literature. This study helps integrate the two areas and provide useful explanations as to how organizations source their talent and how these sourcing decisions drive competitive advantage and then financial outcomes.

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APPENDIX A
ANTECEDENTS OF PLAYER ACQUISITION: RESULTS FROM STUDY 1 REGRESSION ANALYSIS

Prais-Winsten regression, heteroskedastic panels corrected standard errors

Group variable:	id	Number of obs	= 300
Time variable:	Year	Number of groups	= 30
Panels:	heteroskedastic (balanced)	Obs per group: min	= 10
Autocorrelation:	panel-specific AR(1)	avg	= 10
		max	= 10
Estimated covariances	= 30	R-squared	= 0.9097
Estimated autocorrelations	= 30	Wald chi2(35)	= 303.33
Estimated coefficients	= 36	Prob > chi2	= 0.0000

NumberAcqu~d	Het-corrected Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Profession~g	-.0513468	.0449293	-1.14	0.253	-.1394067	.0367131
AnnualPlay~g	.0249912	.0434773	0.57	0.565	-.0602228	.1102052
Developmen~g	.0482845	.014137	3.42	0.001	.0205765	.0759926
Acquisitio~e	.3443991	.0732396	4.70	0.000	.2008521	.487946
SmallMarke~e	-2.132099	1.701431	-1.25	0.210	-5.466843	1.202645
OwnershipC~e	-.5135978	.3275394	-1.57	0.117	-1.155563	.1283677
GeneralMan~e	.5039239	.2731152	1.85	0.065	-.031372	1.03922
Angels	-3.094139	1.350397	-2.29	0.022	-5.740868	-.4474095
Astros	-1.318457	1.215641	-1.08	0.278	-3.701069	1.064155
Athletics	2.681008	1.452552	1.85	0.065	-.1659423	5.527959
BlueJays	-1.527017	1.067268	-1.43	0.152	-3.618824	.5647892
Braves	-.944145	1.258514	-0.75	0.453	-3.410787	1.522497
Brewers	3.000865	1.539957	1.95	0.051	-.0173951	6.019124
Cardinals	1.119549	2.996036	0.37	0.709	-4.752574	6.991673
Cubs	-1.040537	2.983124	-0.35	0.727	-6.887351	4.806278
Diamondbacks	.5768595	1.510827	0.38	0.703	-2.384306	3.538025
Dodgers	1.368793	1.432853	0.96	0.339	-1.439546	4.177133
ExposNatio~s	.2625544	1.313363	0.20	0.842	-2.311591	2.836699
Giants	.1673244	1.285174	0.13	0.896	-2.351571	2.68622
Indians	2.763854	1.765489	1.57	0.117	-.6964407	6.224148
Mariners	2.04725	1.617462	1.27	0.206	-1.122917	5.217416
Marlins	2.789522	1.513617	1.84	0.065	-.1771115	5.756156
Mets	.5476674	1.312615	0.42	0.677	-2.025011	3.120345
Orioles	2.302959	1.490697	1.54	0.122	-.6187537	5.224671
Padres	3.257879	1.64276	1.98	0.047	.0381291	6.477629
Phillies	-.7535079	1.071194	-0.70	0.482	-2.85301	1.345995
Pirates	1.308763	1.807268	0.72	0.469	-2.233417	4.850943
Rangers	1.293072	1.221266	1.06	0.290	-1.100564	3.686709
Rays	1.877344	1.541077	1.22	0.223	-1.143112	4.8978
Reds	1.229741	2.407786	0.51	0.610	-3.489434	5.948916
RedSox	1.420696	1.208299	1.18	0.240	-.9475262	3.788919
Rockies	(dropped)					
Royals	1.244533	1.702553	0.73	0.465	-2.092411	4.581476
Tigers	-.4271245	1.402307	-0.30	0.761	-3.175596	2.321347
Twins	-.8229471	1.627399	-0.51	0.613	-4.012591	2.366697
WhiteSox	2.730706	1.036431	2.63	0.008	.6993393	4.762073
_cons	10.26832	1.549967	6.62	0.000	7.230439	13.3062
rhos =	.6062463	-.0603922	-.128052	-.1504872	.153926 ...	.390682

APPENDIX B
ORGANIZATION ALIGNMENT OUTCOME: RESULTS FROM STUDY 2 REGRESSION ANALYSIS

Prais-Winsten regression, heteroskedastic panels corrected standard errors

Group variable:	id	Number of obs	= 300
Time variable:	Year	Number of groups	= 30
Panels:	heteroskedastic (balanced)	Obs per group: min	= 10
Autocorrelation:	panel-specific AR(1)	avg	= 10
		max	= 10
Estimated covariances	= 30	R-squared	= 0.9151
Estimated autocorrelations	= 30	Wald chi2(36)	= 590.32
Estimated coefficients	= 37	Prob > chi2	= 0.0000

TeamWins	Het-corrected Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
BuyasPredi~d	-.076305	.921131	-0.08	0.934	-1.881689	1.729078
NumberofAl~s	2.90082	.3191344	9.09	0.000	2.275328	3.526312
TeamSalary	-.0328022	.0240694	-1.36	0.173	-.0799773	.0143729
Profession~e	1.014015	.1752621	5.79	0.000	.670507	1.357522
AnnualPlay~r	-.5233373	.1848565	-2.83	0.005	-.8856494	-.1610252
Developmen~g	-.054462	.0554951	-0.98	0.326	-.1632304	.0543064
Acquisitio~e	-.5326469	.2374458	-2.24	0.025	-.9980321	-.0672617
SmallMarke~e	11.71069	5.790866	2.02	0.043	.3607996	23.06058
Angels	2.91743	3.997217	0.73	0.465	-4.916971	10.75183
Astros	-3.970463	4.189688	-0.95	0.343	-12.1821	4.241174
Athletics	(dropped)					
BlueJays	-2.024563	4.266891	-0.47	0.635	-10.38752	6.33839
Braves	-.5406078	3.821575	-0.14	0.888	-8.030756	6.949541
Brewers	-19.4065	5.133543	-3.78	0.000	-29.46805	-9.344936
Cardinals	-13.18587	4.787948	-2.75	0.006	-22.57008	-3.801665
Cubs	-6.787823	3.376294	-2.01	0.044	-13.40524	-.1704089
Diamondbacks	-16.64576	4.931184	-3.38	0.001	-26.3107	-6.980813
Dodgers	-1.476813	3.284009	-0.45	0.653	-7.913353	4.959727
ExposNatio~s	-8.450821	4.955979	-1.71	0.088	-18.16436	1.26272
Giants	-2.992348	4.434292	-0.67	0.500	-11.6834	5.698704
Indians	-15.66892	5.395006	-2.90	0.004	-26.24294	-5.094899
Mariners	-20.2174	4.922543	-4.11	0.000	-29.86541	-10.5694
Marlins	-13.31761	4.922502	-2.71	0.007	-22.96554	-3.669685
Mets	-7.103625	3.713947	-1.91	0.056	-14.38283	.1755775
Orioles	-21.7938	4.565994	-4.77	0.000	-30.74298	-12.84462
Padres	-14.40934	4.885189	-2.95	0.003	-23.98413	-4.834545
Phillies	-1.495586	3.61938	-0.41	0.679	-8.58944	5.598268
Pirates	-24.23495	4.690565	-5.17	0.000	-33.42829	-15.04161
Rangers	-2.285393	4.061438	-0.56	0.574	-10.24566	5.674878
Rays	-16.28286	5.703541	-2.85	0.004	-27.46159	-5.104123
Reds	-19.25513	4.858004	-3.96	0.000	-28.77665	-9.733622
RedSox	-2.749187	3.07828	-0.89	0.372	-8.782505	3.28413
Rockies	-17.59339	4.847996	-3.63	0.000	-27.09529	-8.091496
Royals	-25.71247	4.901345	-5.25	0.000	-35.31893	-16.10601
Tigers	-9.268752	6.336837	-1.46	0.144	-21.68872	3.15122
Twins	-12.4769	5.073537	-2.46	0.014	-22.42085	-2.532951
WhiteSox	-1.746464	3.825555	-0.46	0.648	-9.244414	5.751486
_cons	86.14074	7.046674	12.22	0.000	72.32951	99.95196
rhos =	-.1322145	-.134623	.4441166	-.0815815	-.0760462 ...	.0178586

APPENDIX C
TMGT EFFECT OUTCOME:
RESULTS FROM STUDY 2 REGRESSION ANALYSIS

Prais-Winsten regression, heteroskedastic panels corrected standard errors

Group variable:	id	Number of obs	= 300
Time variable:	Year	Number of groups	= 30
Panels:	heteroskedastic (balanced)	Obs per group: min	= 10
Autocorrelation:	panel-specific AR(1)	avg	= 10
		max	= 10
Estimated covariances	= 30	R-squared	= 0.9262
Estimated autocorrelations	= 30	Wald chi2(37)	= 609.46
Estimated coefficients	= 38	Prob > chi2	= 0.0000

TeamWins	Het-corrected Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
NumberA~ired	-3.265106	1.258818	-2.59	0.009	-5.732344	-.7978672
NumberA~ared	.0918218	.038299	2.40	0.017	.0167572	.1668864
NumberofAl~s	2.970544	.3190512	9.31	0.000	2.345215	3.595873
TeamSalary	-.0458154	.0242963	-1.89	0.059	-.0934353	.0018045
Profession~e	1.046922	.1859987	5.63	0.000	.6823713	1.411473
AnnualPlay~r	-.4790998	.184928	-2.59	0.010	-.841552	-.1166476
Developmen~g	-.0412507	.0547465	-0.75	0.451	-.1485518	.0660504
Acquisitio~e	-.3918388	.2452818	-1.60	0.110	-.8725823	.0889047
SmallMarke~e	-13.67265	4.809746	-2.84	0.004	-23.09958	-4.245719
Angels	.2646272	3.971012	0.07	0.947	-7.518413	8.047667
Astros	-5.142645	4.088161	-1.26	0.208	-13.15529	2.870003
Athletics	24.24626	4.55082	5.33	0.000	15.32682	33.1657
BlueJays	-2.867194	4.242057	-0.68	0.499	-11.18147	5.447085
Braves	-1.815497	3.808575	-0.48	0.634	-9.280167	5.649173
Brewers	4.899392	3.626143	1.35	0.177	-2.207719	12.0065
Cardinals	11.0441	2.949568	3.74	0.000	5.263052	16.82515
Cubs	-7.240795	3.391168	-2.14	0.033	-13.88736	-.5942282
Diamondbacks	7.271408	3.274194	2.22	0.026	.8541054	13.68871
Dodgers	-2.31354	3.30896	-0.70	0.484	-8.798982	4.171902
ExposNatio~s	-9.617024	4.904014	-1.96	0.050	-19.22871	-.0053325
Giants	-3.914006	4.57059	-0.86	0.392	-12.8722	5.044186
Indians	8.830361	3.602058	2.45	0.014	1.770457	15.89027
Mariners	4.601405	3.215745	1.43	0.152	-1.70134	10.90415
Marlins	11.05445	3.252332	3.40	0.001	4.680001	17.42891
Mets	-7.921861	3.713743	-2.13	0.033	-15.20066	-.6430577
Orioles	2.948846	2.544094	1.16	0.246	-2.037488	7.935179
Padres	9.393772	3.172055	2.96	0.003	3.176658	15.61088
Phillies	-1.944067	3.719071	-0.52	0.601	-9.233312	5.345178
Pirates	(dropped)					
Rangers	-2.920437	4.07663	-0.72	0.474	-10.91049	5.069611
Rays	8.220256	4.187534	1.96	0.050	.01284	16.42767
Reds	4.6106	2.704132	1.71	0.088	-.6894002	9.910601
RedSox	-3.760465	3.077672	-1.22	0.222	-9.792591	2.27166
Rockies	4.540031	2.714901	1.67	0.094	-.781077	9.861139
Royals	-1.742188	3.06889	-0.57	0.570	-7.757103	4.272726
Tigers	-10.02942	6.268408	-1.60	0.110	-22.31528	2.256432
Twins	10.09578	2.787057	3.62	0.000	4.633249	15.55831
WhiteSox	-2.793135	3.924818	-0.71	0.477	-10.48564	4.899367
_cons	112.786	12.33176	9.15	0.000	88.61616	136.9558

rhos = -.1813701 -.2664003 .3973649 -.1150778 -.1044858 ... .0177524

APPENDIX D
REVENUE OUTCOME:
RESULTS FROM STUDY 2 REGRESSION ANALYSIS

Prais-Winsten regression, heteroskedastic panels corrected standard errors

Group variable:	id	Number of obs	= 300
Time variable:	Year	Number of groups	= 30
Panels:	heteroskedastic (balanced)	Obs per group: min	= 10
Autocorrelation:	panel-specific AR(1)	avg	= 10
		max	= 10
Estimated covariances	= 30	R-squared	= 0.8415
Estimated autocorrelations	= 30	Wald chi2(39)	= 536.77
Estimated coefficients	= 40	Prob > chi2	= 0.0000

Revenue	Het-corrected Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
TeamWins	.4568989	.1457197	3.14	0.002	.1712936	.7425043
NumberA~ired	-3.431643	3.853885	-0.89	0.373	-10.98512	4.121833
NumberA~ared	.1021392	.1211018	0.84	0.399	-.135216	.3394943
Profession~e	-3.074547	.565667	-5.44	0.000	-4.183234	-1.96586
AnnualPlay~r	.4374902	.5257448	0.83	0.405	-.5929507	1.467931
Developmen~g	-.0616246	.177711	-0.35	0.729	-.4099318	.2866826
Acquisitio~e	-.4195695	.7416222	-0.57	0.572	-1.873122	1.033983
SmallMarke~e	-64.17071	41.15054	-1.56	0.119	-144.8243	16.48286
NumberofAl~s	1.347732	1.037717	1.30	0.194	-.6861559	3.381619
TeamSalary	1.095005	.0888939	12.32	0.000	.9207763	1.269234
NewStadium	21.04293	7.213565	2.92	0.004	6.904604	35.18126
Angels	-80.2875	39.32547	-2.04	0.041	-157.364	-3.211001
Astros	-55.89636	41.14113	-1.36	0.174	-136.5315	24.73877
Athletics	-13.85524	19.14508	-0.72	0.469	-51.3789	23.66842
BlueJays	-79.36357	42.56065	-1.86	0.062	-162.7809	4.053781
Braves	-63.72373	38.86301	-1.64	0.101	-139.8938	12.44638
Brewers	6.59832	14.75652	0.45	0.655	-22.32394	35.52058
Cardinals	9.749469	17.58728	0.55	0.579	-24.72096	44.2199
Cubs	-37.1075	39.44641	-0.94	0.347	-114.4211	40.20605
Diamondbacks	8.433449	16.91639	0.50	0.618	-24.72206	41.58896
Dodgers	-45.2241	43.73551	-1.03	0.301	-130.9441	40.49593
ExposNatio~s	-45.49786	40.74796	-1.12	0.264	-125.3624	34.36667
Giants	-46.08575	39.82552	-1.16	0.247	-124.1423	31.97083
Indians	18.85389	14.65891	1.29	0.198	-9.877055	47.58483
Mariners	11.65965	15.81731	0.74	0.461	-19.3417	42.66101
Marlins	4.138794	14.85525	0.28	0.781	-24.97695	33.25454
Mets	-49.29978	39.35667	-1.25	0.210	-126.4374	27.83787
Orioles	11.75821	14.89641	0.79	0.430	-17.43822	40.95465
Padres	17.56058	15.80112	1.11	0.266	-13.40904	48.53021
Phillies	-70.0145	40.23577	-1.74	0.082	-148.8752	8.846153
Pirates	11.45625	15.742	0.73	0.467	-19.39751	42.31
Rangers	-61.28125	43.00721	-1.42	0.154	-145.5738	23.01134
Rays	5.94403	15.16806	0.39	0.695	-23.78483	35.67289
Reds	(dropped)					
RedSox	-42.19828	40.23238	-1.05	0.294	-121.0523	36.65575
Rockies	17.10113	14.6184	1.17	0.242	-11.55042	45.75267
Royals	3.497296	15.72062	0.22	0.824	-27.31455	34.30914
Tigers	-70.73785	38.53813	-1.84	0.066	-146.2712	4.795497
Twins	-21.52867	18.02536	-1.19	0.232	-56.85773	13.8004
WhiteSox	-66.72352	39.21789	-1.70	0.089	-143.5892	10.14213
_cons	160.397	51.90424	3.09	0.002	58.66653	262.1274
rhos =	.3497463	.758704	.5659591	.6040925	.1852917 ...	-.1557328

APPENDIX E
AVERAGE ATTENDANCE OUTCOME:
RESULTS FROM STUDY 2 REGRESSION ANALYSIS

Prais-Winsten regression, heteroskedastic panels corrected standard errors

Group variable:	id	Number of obs	= 300
Time variable:	Year	Number of groups	= 30
Panels:	heteroskedastic (balanced)	Obs per group: min	= 10
Autocorrelation:	panel-specific AR(1)	avg	= 10
		max	= 10
Estimated covariances	= 30	R-squared	= 0.9134
Estimated autocorrelations	= 30	Wald chi2(39)	= 1707.23
Estimated coefficients	= 40	Prob > chi2	= 0.0000

AverageAtt~e	Het-corrected Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
TeamWins	109.1334	19.96735	5.47	0.000	69.99814	148.2687
NumberA~ired	-652.1141	553.3112	-1.18	0.239	-1736.584	432.3559
NumberA~ared	19.57016	17.2108	1.14	0.256	-14.16239	53.30271
Profession~e	241.2838	82.75356	2.92	0.004	79.08979	403.4778
AnnualPlay~r	-157.0657	71.10744	-2.21	0.027	-296.4337	-17.69766
Developmen~g	-10.77781	23.95934	-0.45	0.653	-57.73725	36.18164
Acquisitio~e	447.874	118.1753	3.79	0.000	216.2547	679.4934
SmallMarke~e	-1207.272	4484.19	-0.27	0.788	-9996.123	7581.579
NumberofAl~s	258.813	129.5778	2.00	0.046	4.845163	512.7809
TeamSalary	90.30851	13.48521	6.70	0.000	63.87798	116.739
NewStadium	1354.146	1151.713	1.18	0.240	-903.169	3611.461
Angels	4539.938	2570.298	1.77	0.077	-497.7532	9577.629
Astros	588.5622	2868.775	0.21	0.837	-5034.134	6211.259
Athletics	-4592.599	4687.043	-0.98	0.327	-13779.03	4593.837
BlueJays	-6773.118	2915.434	-2.32	0.020	-12487.26	-1058.972
Braves	-3709.918	2846.13	-1.30	0.192	-9288.231	1868.395
Brewers	551.7707	4269.395	0.13	0.897	-7816.09	8919.631
Cardinals	3803.791	3960.53	0.96	0.337	-3958.706	11566.29
Cubs	1639.1	2364.281	0.69	0.488	-2994.805	6273.006
Diamondbacks	-492.0489	3800.069	-0.13	0.897	-7940.047	6955.95
Dodgers	6217.391	2644.476	2.35	0.019	1034.314	11400.47
ExposNatio~s	-8445.873	3855.912	-2.19	0.028	-16003.32	-888.4237
Giants	3534.196	2377.283	1.49	0.137	-1125.193	8193.584
Indians	-4687.028	3919.378	-1.20	0.232	-12368.87	2994.811
Mariners	-236.7087	4296.52	-0.06	0.956	-8657.733	8184.315
Marlins	-11035.97	4062.543	-2.72	0.007	-18998.41	-3073.536
Mets	-2253.022	4271.723	-0.53	0.598	-10625.44	6119.401
Orioles	-2281.243	4432.945	-0.51	0.607	-10969.66	6407.169
Padres	-854.1412	3975.641	-0.21	0.830	-8646.254	6937.971
Phillies	-412.4397	3065.757	-0.13	0.893	-6421.212	5596.333
Pirates	-3747.059	3817.425	-0.98	0.326	-11229.08	3734.958
Rangers	-3027.162	2625.782	-1.15	0.249	-8173.6	2119.276
Rays	-9283.26	3932.784	-2.36	0.018	-16991.38	-1575.145
Reds	-5658.028	4013.418	-1.41	0.159	-13524.18	2208.127
RedSox	-6832.338	2208.195	-3.09	0.002	-11160.32	-2504.355
Rockies	1754.256	3976.858	0.44	0.659	-6040.242	9548.754
Royals	-6762.108	3884.242	-1.74	0.082	-14375.08	850.8658
Tigers	-4702.818	2582.17	-1.82	0.069	-9763.779	358.1431
Twins	(dropped)					
WhiteSox	-9758.984	3923.11	-2.49	0.013	-17448.14	-2069.829
_cons	13819.84	6074.162	2.28	0.023	1914.697	25724.97
rhos =	-.0417998	.4220957	.8090793	.6098928	.6002124 ...	.6039615

VITA

Joshua S. Bendickson grew up in Minnesota and received his Bachelor of Science from St. Cloud State University in 2003 and his Master of Business Administration from Augsburg College in 2007. Prior to his doctoral studies, Josh taught 8-12 grade education, worked in business development, and instructed courses at the community college level. At LSU, Josh received the James W. Reddoch Award for excellent teaching by a doctoral student in the Department of Management. He also received the Graduate Student Teaching Award for the E. J. Ourso College of Business. Josh's research interests include strategic human capital, entrepreneurship, and international strategy. His research has been published in peer-reviewed books and journals. Josh is a member of multiple professional organizations including the Academy of Management, the Southern Management Association, and the United States Association for Small Business and Entrepreneurship, among others. Josh is currently employed as an assistant professor of management at East Carolina University in Greenville, North Carolina.