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Action and Outcome: The Connection Between Organizational Goals and Organizational Effectiveness in Major League Baseball

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UNIVERSITY OF NORTHERN COLORADO

Greeley, Colorado

The Graduate School

ACTION AND OUTCOME: THE CONNECTION BETWEEN ORGANIZATIONAL GOALS AND ORGANIZATIONAL EFFECTIVENESS IN MAJOR LEAGUE BASEBALL

A Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Philosophy

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College of Natural and Health Sciences
School of Sport and Exercise Science
Sport Administration

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This Dissertation by: Brian Joseph Fowler

Entitled: *Action and Outcome: The Connection Between Organizational Goals and Organizational Effectiveness in Major League Baseball*

has been approved as meeting the requirement for the Degree of Doctor of Philosophy in the College of Natural and Health Sciences in the School of Sport and Exercise Science, Program of Sport Administration.

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ABSTRACT

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Major League Baseball (MLB) provides an optimal setting to investigate the effects of specific strategic organizational goals and decisions on various key performance indicators (KPIs). The choice to primarily pursue wins or profits (i.e., win maximization or profit maximization), along with how efficiently organizations spend their budgets (i.e., utility), have been shown to impact competitive balance, social welfare, and ticket pricing of sports leagues. The present research builds on the work of previous scholars by empirically examining MLB organizational management at the individual team level.

Data collected for the current research included financial information and organizational KPIs for all 30 MLB teams from a ten-year period (2010-2019), which resulted in sample population of 300 team-year observations to be analyzed. Through the utilization of a two-way MANCOVA analysis, the current study was able to group teams by organizational goal and spending efficiency to determine differences between groups in terms of the identified KPIs. Results indicated that win-maximization teams were likely to experience relatively higher levels in most of the KPIs (e.g., wins, revenue, & franchise value), while the profit-maximizers were more likely to improve their bottom line through conservative and efficient spending. These findings were consistent with the theoretical frameworks associated with win, profit, and utility

maximization. Furthermore, the current findings offer new context to the body of research, as well as a preliminary framework for deciphering the individual goals and decisions of sport organizations based on their financial statements.

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To my parents, John and LaNette Fowler: For as long as I can remember, you have remained the one constant in my life. You were, and still are, my unwavering supporters in every academic and athletic venture, and for everything in between. I am, and will be, forever grateful for your unwavering love. To my in-laws, Dan and Jacqueline Clary: I sincerely appreciate your encouragement and assistance; despite the fact I took over your basement on multiple occasions for some crazy all-night binge-writing sessions.

To Keenan, my son: Though you are likely too young at this point to remember, I am very thankful for your love and support. Through some very stressful times, nothing worked

better to lighten my mood than your laugh and smile. I can honestly say that the expectation of getting to spend more time with you was the true motivating factor that pushed me to the finish. I look forward to returning the favor, as I watch you grow, and get to support you in your future endeavors.

Finally, and most importantly, to my wife, Katrina: Your patience, understanding, and encouragement have been paramount to my success. I am truly thankful for your sacrifices that have made my achievement possible. Ultimately, your love and support kept our lives together over the past three years and allowed me to complete this dissertation. I love you.

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CHAPTER I

INTRODUCTION

In the famous philosophical novel *Atlas Shrugged* (Rand, 1957), character Hank Rearden stated: “To me, there’s only one form of human depravity—the man without a purpose” (p. 142). In the context of the book and its fictional, dystopian version of the United States, this quote refers to the morality of humanity and how a lack of purpose can be detrimental. However, the quote also has applications in reality, specifically in the realm of business. Just like Rand (1957) alluded to the failure of humanity due to lack of direction, a real-world business will also fail without a core purpose.

When identifying the core purpose of an organization, Sinek (2009) suggested that the key is to understand why your company exists. The reason for existence then provides the foundation upon which the organization is built and operates. A key determinant of how the business then operates can be profit orientation (Chelladurai, 2014). Profit orientation, or the categorization of whether the purpose of an organization is to make a profit, can be classified into one of three sectors: (a) for-profit, (b) non-profit, or (c) not-for-profit (Chelladurai, 2014; OpenStax, 2018). For-profit businesses often operate in the private sector and have the core purpose of furthering the financial gain of the company (Strine, 2012). In other words, the majority of decisions made by a for-profit organization are influenced by the goal of making money for sole benefit of the company. Examples of for-profit organizations are numerous, with some of the most prominent being those companies included in the Fortune 500. Strine (2012)

also noted that for-profit organizations do not receive government aid and are required to pay applicable taxes due to the nature of their business operations for their own personal gain.

Non-profit organizations bear a stark contrast to their for-profit counterparts. According to Chelladurai (2014), the core purpose of a non-profit is typically to further the interests of a charity or social cause. Decisions by non-profits are therefore driven by the charitable mission and are not made solely based upon turning a profit. However, this is not to say that these organizations cannot generate income. The income and donations generated must just be used in a manner that is considered beneficial to the cause of the non-profit (OpenStax, 2018). Due to all income being used for a charitable purpose, non-profits are tax-exempt and sometimes receive other governmental aid to help further their cause. Some of the most recognizable non-profit organizations include the American Red Cross, Habitat for Humanity, and the United Way.

On the spectrum of for-profit and non-profit, not-for-profit organizations fall somewhere in between. Grimalda and Sacconi (2005) explained that on the surface, not-for-profits typically operate like a for-profit business. Yet, the core purpose is not to generate a profit but to benefit a group of people through the reinvestment of profits back into the organization (Grimalda & Sacconi, 2005). A prime example of a not-for-profit business is a hospital. Not-for-profit hospitals operate similarly to their for-profit counterparts by offering the same services to their patients. The difference comes in the missions of each: Not-for profit hospitals are meant to serve and benefit the community where they reside. Therefore, they offer benefits to their patients by providing aid such as more uncompensated care (Duggan, 2002).

The three classifications of profit orientation (for-profit, non-profit, & not-for-profit) discussed above encompass the vast majority of industries in terms of guiding the ways in which organizational goals and core purposes are carried out (Chelladurai, 2014). However, one

industry where this does not apply is in professional sport. Professional sport teams, specifically in the United States, are considered for-profit organizations, as they pay taxes and make decisions based on the interests of their own organization (Andreff & Staudohar, 2002). At surface level, this mirrors the operations of any other for-profit business. The difference comes when the core purposes and mission statements of the organizations are analyzed. Professional sport teams are concerned with profits but can also be driven by wins (Fort, 2015). This assertion by Fort (2015) is supported by MLB team mission statements, as a large portion of these mention winning as a top priority (e.g., Kansas City Royals; New York Yankees; Seattle Mariners). While the relationship between profits and wins is not mutually exclusive, it is also not entirely mutually inclusive either. According to Fort and Quirk (2004), how a team owner decides to balance the objectives of profits and/or wins becomes an organizational goal and is quite possibly the largest factor in shaping the direction and make-up of the organization.

The conundrum concerning winning and profits is a product of the nature of professional sport. Fort (2015) and Zimbalist (2003) both alluded to this point when explaining that higher profits are achieved through increased revenue and decreased expenses, while improving a team's chances of winning is done by, among other things, increasing the amount of talent on that team. Furthermore, the acquisition of talent is an expense, and high-level talent is often more costly than the alternative (Fort, 2015; Zimbalist, 2003). In other words, for teams to position themselves to have a better chance of winning games they often need to spend large amounts of money. The large amount of money spent on winning can then cut into the amount of profit the organization makes. Ultimately, the paradox between profits and wins pushes team owners and management to make a decision. The decision of an affinity toward winning or profits then becomes a core organizational goal that drives decision-making for that team (Fort, 2015).

Evidence of a tradeoff between pursuit of profits and wins can be found in many different professional sports including all of the "Big Four" professional sports of North America: Major League Baseball (MLB; e.g., Alexander, 2001), National Basketball Association (NBA; e.g., Berri, 2006), National Football League (NFL; e.g., Clopton, 2013), and National Hockey League (NHL; e.g., Rockerbie, 2015). However, of the "Big Four" North American Sports, MLB stands as the best league to highlight the choice between profits and wins for a couple reasons. First, MLB does not have a salary floor, where the NBA, NFL, and NHL do (Dietl et al., 2010). According to Dietl et al. (2010), a salary floor is an agreed upon minimum amount that a team must spend on their total player salary. For example, in the NBA each team must spend at least 90% of the salary cap for a given year on player salaries (NBA.com, 2019). So, with the absence of a salary floor in MLB, there are no restrictions on the minimum a team can spend on player salaries which may allow teams who want to increase profit by minimizing expenses to spend less in the area of total team salary.

Another MLB rule that assists in magnifying the choice between profits and wins is the lack of a salary cap for the league. A salary cap acts as the upper bound of which a team can pay in total for all the players on their roster (Dietl et al., 2010). While the NBA, NFL, and NHL all have some form of a salary cap, MLB does not. What MLB does have is a league-implemented luxury tax, also known as the competitive balance tax, which taxes any payroll of a team that goes above a set threshold. Yet this does not seem to deter wealthier, larger market teams, who regularly seem to have an advantage over their smaller-market counterparts (Lee & Fort, 2005). In fact, Hasan (2008) found that MLB teams with higher payrolls and who regularly exceed the competitive balance tax (e.g., New York Yankees, Boston Red Sox, & Los Angeles Dodgers) also generally have a significantly higher winning percentage than those teams who regularly

have lower payrolls. So, the lack of a strong constraint on the upper end of team payrolls in MLB allows teams who want to pursue wins to spend significantly more than other teams who may be pursuing different strategies.

The combination of no salary floor and the lack of salary cap in MLB creates the largest gap in team payrolls in the "Big Four" sports. To illustrate the large gap in MLB payrolls compared to its counterparts, Table 1.1 lists the teams with the highest and lowest payrolls, along with the respective gap in pay, for the seasons that began in 2019.

Table 1.1

2019 League Payrolls Differences

League	High Team	Payroll	Low Team	Payroll	Gap
MLB	Boston	$229.20	Tampa Bay	$64.18	$165.02
NBA	Portland	$137.67	Atlanta	$112.34	$25.33
NFL	San Francisco	$221.69	Kansas City	$167.01	$54.68
NHL	New York Isl.	$85.97	New Jersey	$62.96	$23.01

Note. Payroll and Gap are in millions of dollars.

Table 1.1 shows that the gap in MLB is about three times larger than the NFL, which was the league with the second largest gap. The vast spectrum of team payrolls compared to other leagues demonstrates the freedom MLB owners and management have in constructing and compensating their teams. In turn, MLB organizations also have more autonomy to set organizational goals such as winning games or making profits, and then actively pursuing those goals.

To measure the achievement of organizational goals, an organization can apply the concept of organizational effectiveness. According to Cameron (2015), organizational

effectiveness has a somewhat broad definition and is generally thought of as a construct that refers to how well a company operates. As with most abstract or broad concepts, a way to operationally define and measure them is needed. In order to measure organizational effectiveness, key performance indicators (KPI) are often developed and used (Eckerson, 2006). Bauer (2004) defined KPIs as the following:

> KPIs are quantifiable metrics which reflect the performance of an organization in achieving its goals and objectives. KPIs reflect strategic value drivers rather than just measuring non-critical business activities and processes. KPIs align all levels of an organization (business units, departments and individuals) with clearly defined and cascaded targets and benchmarks to create accountability and track progress. (p. 63)

Examples of KPIs for a professional sport franchise that is pursuing profits or wins could include the obvious measures of profits (Késenne, 2006) and wins (Clopton, 2013). However, less obvious metrics such as attendance (Davis, 2008), cost of attendance (Coates & Humphreys, 2007), team construction (Hill et al., 2017), wage dispersion (Annala & Winfree, 2011; Hill et al., 2017), and franchise value (Alexander & Kern, 2004; Scelles et al., 2016) are also pertinent. By utilizing KPIs that indicate organizational effectiveness, MLB organizations can then begin to determine the impact of their organizational goals.

Statement of Purpose

The situation described above begs the question: For an MLB team, what is the difference between operating with a strategic organizational goal of profits versus a strategic organizational goal of winning? Therefore, the purpose of this research was to analyze differences in varying strategic organizational goals (i.e., profits or wins) through the use of KPIs

representing organizational effectiveness. End results of this study provide empirical evidence demonstrating expected outcomes based on the pursuit of profits or wins in MLB.

The idea for the current study is based upon several theories, the first of which are profit maximization (PM) and win maximization (WM). A PM strategy, as it pertains to sport, refers to a situation where ownership would "invest in team success up to the point where the expected marginal revenue from an additional win is equal to the marginal cost" (Zimbalist, 2003, p. 506). A WM strategy, however, allows for additional spending toward team success. Teams that have the goal of WM spend all revenues, or at least spend to a preset floor, with the ultimate goal of winning as many games as possible (Késenne, 2006). In application to the current research, the theories of PM and WM indicate that a team with a primary organizational goal of wins would spend a larger percentage of their revenues than a team with the primary organizational goal of profits.

Utility maximization (UM) is another theory that was used to guide the current study. As opposed to PM and WM which influence the amount of money spent, UM is only concerned with efficiency. In UM, the perspective is from the consumer and utility is maximized when the consumer gets the most value for the amount of money spent (Hall & Lieberman, 2008). When we look at MLB teams as consumers, they are buying talent to win games. The teams that spend the least amount of money per win are those that are coming closer to maximizing their utility (Rascher, 1997). For the current study, the application of UM as an efficiency measure helped provide a more complete picture of how teams are executing their strategic organizational goals of profits or wins.

Rationale

Previous sport scholars have covered PM, WM, and UM in many different capacities. The bulk of research has been focused in the setting of European soccer (e.g., Garcia-del-Barrio & Szymanski, 2009; Késenne, 2006) due to the widely held notion that professional clubs in Europe tend to be win maximizers. Similarly, in research on North American sport, researchers have focused on PM and UM due to the generally accepted belief that sports teams in the United States tend to be more concerned with profits (Berri, 2006; Clopton, 2013). However, the commonality among almost all previous research on PM, WM, and UM is that it all has been based at the league level. In other words, previous scholars in this research line have treated leagues as entities that fall into a category of WM, PM, UM, or a mix. Then the impact of those strategies has been studied in terms of competitive balance, social welfare, and ticket pricing on a league-wide basis (Dietl et al., 2009; Garcia-del-Barrio & Szymanski, 2009; Marburger, 1997). However, contrary to grouping every team in a league together under one strategy, Zimbalist (2003) suggested that strategies of individual team owners within a league could vary substantially when it came to profits or wins. This is where a gap in the research exists: To date, there has been virtually no research on the impact of PM, WM, or UM strategies on the individual team level. Therefore, the central objective of the current study was to explore PM, WM, and UM as primary organizational goals, and compare the differences of these strategies at the individual team level.

Research Questions and Objectives

To analyze PM, WM, and UM on an MLB team level, quantitative financial data were collected and used to determine overall team strategies. Differences in these categorical strategies were then analyzed based on the organizational effectiveness KPIs discussed above.

The statistical method used for the analysis was a multivariate analysis of covariance (MANCOVA), which uncovered differences in the organizational goals while allowing covariates to be controlled. The questions that guided the current research are as follows:

Q1 Is there a difference between a primary MLB organizational goal of wins versus a primary organizational goal of profits in terms of KPIs representing organizational effectiveness?

Q2 Is there a difference in levels of utility achieved through spending efficiency by MLB teams as measured by the KPIs signifying organizational effectiveness?

Q3 Is there an interaction effect between primary MLB organizational goals and spending efficiency in terms of their relationship with the organizational effectiveness KPIs?

Structural Overview

The remainder of this dissertation is broken into four chapters. Chapter II, which is the literature review, expands upon the relevant theories and theoretical framework to provide better context, rationale, and explanation for the current study. Topics covered are the theories of PM, WM, and UM, along with organizational effectiveness and its representative key performance indicators for sport. Following that, Chapter III covers methodology for the current study including research design, in-depth variable description, data collection, and statistical analysis. Chapter IV reports the results of the statistical analysis. Finally, Chapter V consists of three parts. First, a discussion of the results based on the theories and framework described in the literature review is presented. Next, implications of the findings are suggested, and practical applications are considered. Finally, the fifth chapter of the study concludes with comments on generalizability, limitations, and future research directions.

CHAPTER II

REVIEW OF LITERATURE

The review of literature for this study is divided into five sections covering relevant theories, theoretical framework, and their applications to the current research. The first provides a detailed description of PM including its origins in business and its sport applications. The second segment explains WM and its contrast to PM in the sport setting. The third section details UM in both business and sport by covering various examples and interpretations of previous scholars. The fourth section transitions to the dependent variables of the current research by giving a thorough review of organizational effectiveness and KPIs. Included in the review of organizational effectiveness are subsections addressing each individual KPI that pertains to MLB teams and the current research. Finally, the review of literature culminates with hypotheses for the current study's research questions (see Chapter I) based upon the information presented in the four subsequent sections.

Profit Maximization

Profit maximization is a long-standing model which many organizations have used to make strategic decisions (Howard & Crompton, 2014; Knight, 1921). When considering PM, it is assumed that in most normal business cases, a rational company with a profit orientation of for-profit will always seek to maximize their profits (Hall, 2019). According to Brunkhorst and Fenn (2010), PM occurs when the revenues exceed costs and the gap between those two is maximized. Furthermore, PM is often explained using marginal revenue (MR) and marginal cost

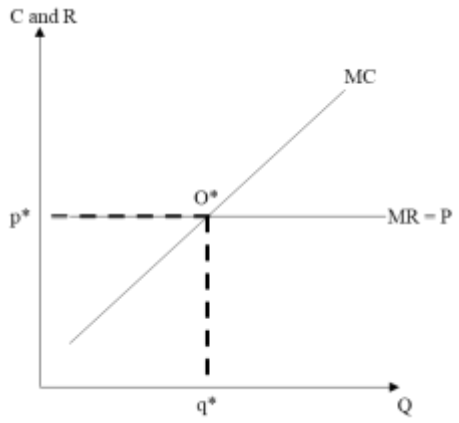
(MC), where MR is the additional revenue, and MC is the additional cost, incurred by producing one more unit (Hall, 2019). Profit is then maximized when MR is equal to MC. That formula is displayed below:

$$MC = MR \quad (1)$$

Below, a graphical representation for further clarification is given in Figure 2.1. The x-axis represents output quantity (Q), while the y-axis stands for costs and revenue respectively (C and R). As can be seen in Figure 2.1, the optimum quantity for output is O*, where MR and MC intersect. After this point, it does not make sense to produce additional units because the cost for production will exceed the revenue gained. Similarly, prior to this point, the revenue for making one more unit still exceeds the cost of that unit. So, in that case the decision should be made to continue producing.

Figure 2.1

Profit Maximization



In the 1960s, Continental Airlines utilized the idea that MR should equal MC to gain a competitive advantage. According to Hall and Lieberman (2008), airlines at the time were using total cost instead of MC to determine the cost of a flight. With this calculation, a flight needed to be 65% full to break even. If a particular flight route was not consistently at least 65% full, it

would be cancelled. However, Continental Airlines discovered that this was actually an inaccurate assumption because the calculation of total cost also included many sunk costs that would be incurred whether a flight took off or not. By substituting MC for total cost, the sunk costs were not included in the break-even equation, and Continental Airlines then figured that the break-even point actually occurred when flights were only 50% full. The new calculation allowed the company to offer, and even add, more flights. Many people were skeptical of this decision, but because of the decision, Continental Airlines profits rose considerably (Hall & Lieberman, 2008).

There are many other examples of utilizing PM in practice. Probably the most traditional use is for manufacturers to determine price for their products, which was confirmed by Jobber and Hooley (1987) who reported that many firms (roughly 50%) had a primary concern of PM. Another scholar reported that PM can drive the decision of selecting the proper hours of operation for a retailer (Ferris, 1990). As long as revenue generated from staying open an additional hour exceeds the cost of that additional hour, then the store should stay open. Finally, the idea of PM can also be applied to advertising. The premise is that an organization should continue paying for additional advertising as long as the added revenue from running the advertisement one additional time outweighs the added cost associated (i.e., comparing MR and MC; Dorfman & Steiner, 1954).

Profit Maximization in Sport

Profit maximization is a prevalent topic in sport management literature. Scholars have often used PM as a categorization for teams or leagues and then explored how those organizations make decisions based on that categorization. Zimbalist (2003) suggested that "analyzing leagues (and teams) under the profit-maximization assumption provides a useful

efficiency standard against which to assess actual performance" (p. 504). Operationalizing this notion, El-Hodiri and Quirk (1971) took a general look at the major professional sports leagues in the United States and built a model based on their various rules and economics. Geographical location and the associated revenue generation potential was found to be a key determinant of whether a team exhibited profit-maximizing tendencies. Furthermore, achieving the goal of equalization in playing strength (i.e., competitive balance) was found to not occur in a league driven by PM (El-Hodiri & Quirk, 1971).

The association between ticket pricing and PM has also received attention from sport scholars. Most often the question to be answered is whether or not tickets are priced to maximize profits. The general answer is that in most cases, including baseball (Marburger, 1997; Rascher et al., 2007; Shapiro & Drayer, 2014), football (Brunkhorst & Fenn, 2010), and hockey (Ferguson et al., 1991), tickets are priced with PM in mind. Taking this one step further, Krautmann and Berri (2007), as well as Marburger (1997), both identified that ticket prices usually fall within the inelastic section of demand, which on the surface would not reflect PM. However, when combined with revenue from concessions and other complementary goods, the organizations were still exhibiting tendencies that were reflective of profit-maximizing behavior (Krautmann & Berri, 2007; Marburger, 1997). In other words, tickets were intentionally priced lower in order to attract more potential customers for concessions.

In many of the above examples, it is assumed that all teams in a league take a similar approach. However, this may not be the case. Dietl et al. (2009) theoretically compared the social welfare of three different types of leagues: One comprised of all profit-maximizers, one with teams who were primarily focused on winning (win-maximizers), and one that was a mix between the two. Social welfare was found to increase with PM, meaning that the league, as a

whole, was healthier in all aspects when teams were most concerned with turning a profit. Similarly, revenue sharing was found to be much more beneficial to social welfare when the orientation of teams was aligned (Dietl et al., 2009). This makes sense because in a mixed league, profit-maximizers would not be happy to share revenue with those trying to maximize wins and vice versa.

Win Maximization

Win maximization is an organizational goal that is strictly limited to sports. It is concerned with maximizing the number of games that the team wins while being unconcerned with the profits of the organization. In providing a fitting definition of WM, Clopton (2013) stated:

> the objectives of win-maximizing owners are most concerned with maximizing wins rather than profits…This model of owner objective assumes that the most effective way to maximize the team's winning percentage is to maximize the playing talent of the team…Owners of this type are assumed to spend as much money as will allow under the current policies and restrictions of their league. (p. 210)

Furthermore, win-maximizing teams may occasionally even have financial losses, which an owner would see as acceptable as long as their team was winning at a high enough level. Owners of these win-maximizing teams typically also value talent higher than their profit-maximizing counterparts, which means they will often pay more to acquire those players (Clopton, 2013).

With WM being a fairly new concept compared to its counterpart (i.e., PM), there are a few competing models to represent WM. The first is concerned with maximizing winning percentage by spending all profits on team improvements. That model is represented by the following equation proposed by Késenne (2006):

$$\max w$$

$$\text{sub } R - C = 0, \tag{2}$$

where w is the winning percentage of a team, C is the total cost in a season, and R is total season revenue. This equation model can also be slightly modified to reflect where profits are only spent to a certain set point:

$$\max w$$

$$\text{sub } R - C = \pi^0, \tag{3}$$

where π^0 is a preset floor for profits, and all of the excess can be spent to improve the team (Késenne, 2006). However, criticism exists for WM models where the variable being maximized is wins. Fort and Quirk (2004) argued that wins, or winning percentage, are not an operational objective because winning and losing games cannot be completely controlled. Instead, the best effort a team can give to maximize wins is to maximize the amount of talent that plays for their team. In response to the proposal, Késenne (2006) offered a third model of maximizing talent:

$$\max x_i$$

$$\text{sub } R_i[m_i, w_i] - cx_i = \pi_i, \tag{4}$$

where x_i is the amount of talent on team I, π_i is a fixed amount of profits, R is the team's season revenue with m (market size) and w (winning percentage) acting as factors for the revenue, and c is the marginal cost for talent.

All three models shown above have their own strengths and weaknesses with each lending itself to certain situations depending on context, data availability, and the research question(s) being asked. However, the main idea of each model is the same: to maximize winning percentage (or talent level) of a team under the breakeven constraint of zero profits (or the preset minimum profit level).

The majority of previous scholars have applied WM in the context of professional European soccer. A suggested reason for the geographical concentration of WM research was the generally accepted belief that professional sports teams in the United States act as profit maximizers, while professional clubs in Europe tend to be more focused on winning (i.e., win maximizers; Késenne, 2006; Késenne & Pauwels, 2006). Confirming this notion, Garcia-del-Barrio and Szymanski (2009) analyzed WM vs. PM in multiple top soccer leagues across Europe. Findings showed that there was an overwhelming affinity for WM that was subject to a zero-profit budget constraint. Possible explanations for the WM behavior were the strong connections (fandom) that Europeans have toward their preferred team and the relegation system, which encourages teams to win so they do not fall out of the international spotlight (Garcia-del-Barrio & Szymanski, 2009).

Further analysis of European soccer has uncovered some perceived negative effects of the proclivity toward WM. Késenne (2010) investigated whether WM caused a team to overpay for talent. In an investigation of the top Belgian soccer league, players were found to, on average, be paid significantly above their marginal productivity. In other words, in situations with win maximizers, the team risks paying players more than they are actually worth due to the competition from other teams to acquire talent. Regarding the pressure to win and the reckless overpayment of players, multiple scholars have indicated that clubs across Europe are in financial trouble, which is quite alarming because some clubs receive government funding (Késenne, 2006, 2010).

Overall, WM is built on good intentions. Team ownership is focused on putting their team in the best position to win, which theoretically creates an ideal situation for the fans (Clopton, 2013). However, in the relentless pursuit of wins, there are some inherent financial

issues that can surface when profit is ignored (Késenne, 2006, 2010). Terrien et al., (2017) identified this two-sided issue and offered a possible solution: The club could switch orientation from year to year based on identified financial needs and their projected position within the league.

Application of Profit Maximization and Win Maximization to the Current Study

In a perfect, theoretical environment the idea of looking at sport organizations as strictly profit-maximizers, or strictly win-maximizers, is convenient for making inferences on the impact of those strategies. However the situation is not quite that clear. Very few, if any, teams 100% subscribe to either a PM or WM strategy (Dietl et al., 2011; Zimbalist, 2003). Without being a member of management or getting information directly from ownership, determining the exact organizational strategy regarding PM or WM for an empirical study is difficult. What can be ascertained by looking at team financial statements is a general preference between profits and wins compared to other organizations in a league (Dietl et al., 2009; Zimbalist, 2003).

To compare the financial statements of MLB teams, general financial equations and ratios (e.g., profits & profit margin) must be kept in mind. Teams within the same league have fairly similar expenses on a year-to-year basis as the costs to operate within a given league are similar. However, team payroll, especially in the MLB, is not fixed. In fact, team payroll is one of the largest and most varied expenses between teams in professional leagues like MLB (Annala & Winfree, 2011; Mondello & Maxcy, 2009). The variation in payroll can be attributed to multiple factors including strategic organizational goals, market size, and team budget (Késenne, 2010; Krautmann, 2009).

Revenues amongst teams within MLB also vary greatly, with teams in larger markets typically making more revenue (Krautmann, 2009). This team-to-team variation in resources also influences budget size for talent acquisition. Due to the large range in player salary budgets, it cannot be said with certainty that teams who spend more on payroll are pursuing wins while teams who spend less are pursuing profits. It might just mean that the team who is spending more simply has a larger budget. A better approximation to decide if a team prefers profits or wins is to examine profit margin (Clopton, 2013; Késenne, 2006). By using profit margin, it can be seen how many cents of profit are generated from each dollar of revenue. Also, differences in profit margin can be compared to make conjectures about spending habits. This approach is supported by equation 2 listed above, which theoretically shows that a true WM team would spend all revenues to the point of zero profits leaving very little if any profit margin (Késenne, 2006).

Utilizing the above concept, the current study divided teams into groups based on the profit margin. Teams with lower profit margins were viewed as spending a larger percentage of their available budget, and therefore grouped and considered to have the strategic organizational goal of wins. Those teams with higher profit margins were grouped and considered to prefer a strategic goal of profits.

Utility Maximization

On a spectrum, PM and WM are basically opposite viewpoints from the perspective of the producer or price-setter. Utility maximization on the other hand, while similar to both, has the perspective changed to that of the consumer. So, UM is basically the process of a consumer attempting to get the greatest value possible for the least amount spent (Hall & Lieberman, 2008). According to Strotz (1955), whether people are conscious of it or not, they regularly employ UM in their everyday lives. This can be a purchase decision of a cheaper off-brand

product that is perceived to be of similar quality to the more expensive brand name product (Chintagunta, 1993). While another example could be a decision to take a new job based on the superior income, independence, and risk-level that is associated with the position (Douglas & Shepherd, 2002). In both examples, the decision involved choosing the alternative with the most utility at the least expense, and therefore applied UM theory.

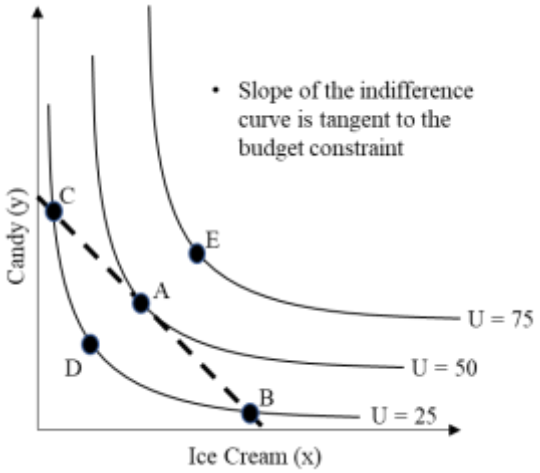
The general equation for UM is similar to the MR is equal to MC associated with profit maximization. Welker (2019) gave the following equation for UM:

$$Mux/Px = Muy/Py, \quad (5)$$

where *Mux* is the marginal utility from good *x*, *P* is the price, and *Muy* is the marginal utility from good *y*. In explaining the above equation, Welker (2019) stated that "A consumer should spend his limited money income on the goods which give him the most marginal utility per dollar. Only when the ratio of MU/P is equal for all goods is a consumer maximizing his total utility" (para. 1). This means that utility is maximized when the alternative is selected that provides the largest possible amount of utility at a set price. Below in Figure 2.2 is an example of UM using the choice between two alternatives: ice cream (x-axis) and candy (y-axis). Each of the three indifference curves represents a certain level of utility, and the dotted line represents the budget. In UM, the point where you can get the most utility for the set budget is the point where utility is maximized, which in this case is illustrated by point A in Figure 2.2.

Figure 2.2

Utility Maximization



Utility Maximization in Sport

As stated above, UM is viewed from the perspective of the consumer. In sport management research, this often means that the role of consumer is occupied by the professional sports teams, and players or other assets teams are looking to acquire are viewed as the product. To model UM in that respect, Rascher (1997) offered the following function:

$$\text{Max } U_i = \alpha_i Win_i + (1 - \alpha_i)\pi_i, \quad (6)$$

where α_i is the proportion that owner *I* trades off winning and profit in their utility function, Win_i is the wins for team *I*, and π_i is the profits from winning. One interesting aspect of the Rascher (1997) equation is the flexibility given by the ability to adjust the tradeoff between winning and profit. This allows it to be adjusted to handle any and all levels of a team's preference for winning vs. profits, as long as those levels are somehow able to be discerned.

Putting the utility function into practice, Madden and Robinson (2012) analyzed soccer in the United Kingdom from 2001 to 2010. By gathering profits from ticket sales and expenditures on players, they were able to implement the UM function to determine that support had been

growing for the league and teams throughout that time period. Consequently, there was also a noticeable rise in ticket prices and team expenditures, which fueled both sides of the UM (Madden & Robinson, 2012). These findings lend a better understanding to the true give-and-take relationship of profits and winning that is often present in professional sports.

As mentioned before, the impression exists that professional sports franchises in the United States are almost strictly profit-maximizers (Késenne, 2006; Késenne & Pauwels, 2006). However, there is substantial evidence to the contrary. Many scholars point to the presence of UM in professional sports of the United States. Dietl et al. (2011) found that "evidence from the real world of major league sports, however, suggests that clubs trade-off profits and wins" (p. 296). This finding suggested that Major League Baseball (MLB) teams are mostly utility maximizers because they give attention to both winning and profits. Further findings from Dietl et al. (2011) suggested that when revenue sharing increased marginal revenue, more investment is encouraged, which can help improve the overall competitive balance of the league.

Similarly, Vrooman (1997) utilized a version of the UM equation to model the growing labor market in MLB. The constantly growing salaries of free agency were shown to be a function of UM where teams were investing to win more games. Winning games then caused increased profits from attendance among other things, and finally teams then reinvested their profits into higher-priced talent (Vrooman, 1997). The explanation of this cycle in baseball serves as a prime example of the assertion from Strotz (1955) that UM is at work in everyday decisions whether we are conscious of the phenomenon or not.

Application of Utility Maximization to the Current Study

Two key pieces from the above review of UM provided framework for the current study. First, the base concept of UM is that the consumer, which in this case is an MLB team, is trying

to get the most value for the money they spend (Hall & Lieberman, 2008; Strotz, 1955). Second, the concept of UM is not mutually exclusive from PM or WM as a strategic organizational goal (Dietl et al., 2011; Madden & Robinson, 2012; Vrooman, 1997). Win-maximizing teams approach UM as they win more games, and therefore, decrease the team salary cost per win for the season. The same concept also applies for profit-maximizing teams. Though they may win less games, they have also theoretically spent less on team salary. Therefore, the utility received from their team payroll (PM teams) can be judged on a per game basis just like WM teams.

Utilizing the two concepts mentioned above, the current study divided MLB teams into groups based on the utility they received from their money spent. Utility was calculated as the ratio of team payroll in a given year to the number of wins in that season. The amount spent per win then dictated whether that team was placed in the high utility or low utility group. This grouping of high or low utility, along with the strategic goal grouping of profits or wins, acted as the two independent variables of the two-way MANCOVA analysis for the current study.

Organizational Effectiveness

Organizational effectiveness can be defined as how effectively an organization meets its desired outcomes (Cameron, 2015). Similarly, Georgopoulos and Tannenbaum (1957) stated that "organizational effectiveness (sometimes called organizational "success" or organizational "worth") is ordinarily used to refer to goal-attainment. In this sense, it is a functional rather than a structural concept. Furthermore, it is probably most useful in comparative organizational research" (p. 534). The combination of these two definitions represents organizational effectiveness as a measurement tool for organizational goals. The problematic portion of organizational effectiveness, however, is that no standardized measurement for organizational effectiveness exists (Cameron, 2015).

The majority of scholarly research in the area of organizational effectiveness falls into one of two categories: studies attempting to further define organizational effectiveness; or studies utilizing organizational effectiveness as measurement. Scholars in the first category, who are attempting to further define organizational effectiveness, usually take an approach of adapting and testing models for measurement (e.g., Cameron, 1986, 2015; Steers, 1975). This line of research has yielded some useful models to fit many situations: (a) ideal type model, (b) goal model, (c) natural systems model, (d) internal processes model, I strategic constituencies model, and (f) abundance model.

The ideal type model is the idea of finding an organization to mirror or imitate. In this sense, effectiveness would mean matching desired characteristics of an organization that is deemed ideal and following the path that this ideal organization has already established (Cameron, 2015). The ideal type model would be beneficial to start-up organizations and/or organizations that are actively looking to expand and grow.

Goal model is likely the most readily associated with organizational effectiveness. It is the idea mentioned above that organizational effectiveness is entirely based on achievement of desired goals (Georgopoulos & Tannenbaum, 1957). Again, the difficulty here is defining a goal so it is measurable. This is why organizational effectiveness is often linked to SMART goals (Cameron, 2015). SMART is an acronym that stands of specific, measurable, attainable, relevant, and time-based. All the facets of a SMART goal then help the organization assess how effectively the goal was met.

The next two models, natural systems and internal processes, are very closely related. Both models are associated with the flow of information and the completion of organizational tasks. The internal processes model analyzes how items within the business operate, while

natural systems assesses how items and information flow in and out of the organization (Steers, 1975). The idea behind these models is that smooth organizational operations are representative of organizational effectiveness.

Strategic constituencies is a model that measures organizational effectiveness based on the satisfaction of important stakeholders (Cameron, 2015). In this case, the stakeholders could be either internal or external and their interests in the organization could vary dramatically. Specific examples of stakeholders could be employees and customers of a business or a booster of a college football program. One issue with effectiveness when applying this model is the presence of multiple stakeholders that may have differing views on how the organization should be run (Cameron, 1986). Attempting to appease all stakeholders can be almost impossible, and under the evaluation of the strategic constituencies model, organizational effectiveness may suffer.

The final model of organizational effectiveness that was developed by previous scholars is the abundance model. The abundance model is possibly the widest ranging and adaptable of all the models, as organizational effectiveness is defined in this case as "producing, flourishing, and virtuousness" (Cameron, 2015, p. 202). In the abundance model the organization is open to define what abundance means to them. This is especially helpful for businesses, such as non-profits, that have goals other than making money. The key to effectively using the abundance model is again definition, as the characteristics of what that particular organization outlines as abundance must be clear in order to gauge organizational effectiveness.

Key Performance Indicators

Scholars who have looked to apply organizational effectiveness to their own research line needed a deep understanding of what comprises effectiveness in their particular setting. An

understanding of effectiveness in a specific capacity has then allowed scholars to develop criteria to measure effectiveness (e.g., Lewis et al., 2009; Matthews, 2011). Often, these measurement criteria are referred to as KPIs. As touched on earlier in Chapter I, KPI is an acronym for key performance indicator, and these KPIs represent a measurable value that indicates the effectiveness of an organization in achieving their objectives (Bauer, 2004; Eckerson, 2006). While there is not a standard set of KPIs to evaluate every organization, there is somewhat of a science to determining KPIs for a given business. According to Eckerson (2006), when evaluating a business process through a critical lens, the first items to look at are desired outcomes of that process, along with any outcomes that may be byproducts. These outcomes and byproducts, if quantifiable, can then become the KPIs for the business process.

Putting the idea into practice, Burkhart and Spencer (2018) investigated MLB and whether there was a difference in offensive tendencies between the regular season and postseason. For this case, by employing the work of previous scholars, the way in which an out was recorded by a defensive player, the way in which an offensive player reached base, the frequency of sacrifice plays, and frequency of stolen bases were determined to be the KPIs of offensive tendencies (Burkhart & Spencer, 2018). Utilizing these KPIs, the difference between regular season and postseason, in terms of offensive tendencies, could be assessed.

The fundamental takeaways of the above example for conducting a study incorporating organizational effectiveness are an understanding of the concept being measured (e.g., offensive tendencies), consultation of previous research to determine the appropriate KPIs, and execution of a statistical analysis that can answer the desired questions. The current study took this approach in determining KPIs suitable for measuring organizational effectiveness of the organizational goals. Furthermore, as a guide for determining the definition of effectiveness for

the current research, the study employed the goal and abundance models of organizational effectiveness (Cameron, 2015; Georgopoulos & Tannenbaum, 1957). Therefore, the working definition of organizational effectiveness in terms of MLB team strategic organizational goals was achievement of those goals in a manner that causes the organization to flourish.

The remainder of this section discusses each individual KPI included for the current study. Each of the KPIs for this study acted as a singular dependent variable. Description of these KPIs provides background and a working definition of each measure. Additionally, explanation of why each KPI is representative of a facet of organizational effectiveness of an MLB team is given.

Wins

The primary objective of any given game in an MLB season is to win. This fact is why many scholars, such as Lewis et al. (2009), have used wins as a representation of organizational effectiveness of an MLB team. Wins, as a variable, can be expressed in many forms. The simplest may be the actual number of wins by a team. Winning percentage, which is the number of wins divided by the total number of games, is also often used. The expression of wins as a percentage of total games is especially helpful in situations where the total number of games played by teams being compared are uneven. Other variable forms that winning sometimes takes are postseason appearances and championship wins, which can be representative of success depending on organizational goals (Hasan, 2008).

For the current study, wins were a somewhat obvious fit as a measure of effectiveness when the first independent variable was considered. The first independent variable was a grouping by an organizational goal of profits or wins. It could be assumed that teams who prefer wins would most likely win more games over a season than teams who prefer profits (Fort, 2015;

Zimbalist, 2003). By looking at wins, it could be determined if there was a difference between the two groups and conclude if one goal is superior to the other in terms of winning games. The variable form of wins in the current study was the total number of wins in an MLB regular season by a given team. This choice was based on a desire for inclusion and uniformity. Not all teams make the postseason. By only including regular season games, it was ensured that each team observation played the same number of games, and comparisons between teams and seasons will thus be made much easier.

Revenue

Teams in the MLB are for-profit entities. While it can be debated whether profits or wins are the primary objective of an MLB organization, it could be said the profits are, at the very least, an important component of operations. Revenue is closely related to profits, as it represents all the money made from business activities. Sport scholars regularly study determinants of revenue, as it is an indicator of a financially healthy MLB team (e.g., Alexander, 2001; Gustafson & Hadley, 2007). Furthermore, revenue is also linked with the other MLB organizational effectiveness variables of wins and attendance. As teams win games, attendance likely increases. As attendance increases so does revenue, and finally increased revenue can be reinvested back into the team to win more games (Fort & Quirk, 2004; Zimbalist, 2003).

As explained above, revenue is a central part of the operation of an MLB team. This characteristic is what makes revenue a good fit as a KPI of MLB organizational effectiveness. Applying the abundance model (Cameron, 2015), a flourishing team would most likely produce more revenue. When assessing differences in effectiveness of the two organizational goals (i.e.,

profits or wins), revenue would seem like an appropriate KPI for comparison. Revenue for the current study was recorded as an inflation-adjusted dollar amount so that revenues from different years could be fairly compared.

Attendance

Attendance is a variable that is regularly studied in sport literature and teams that are successful often have better attendance (Coates & Humphreys, 2007; Davis, 2008). In this sense, attendance is a key indicator of success, and is therefore, a suitable KPI of organizational effectiveness. One might expect that teams who actively pursue wins and spend more money on talent acquisition may attract more attendance (Davis, 2008). Similarly, teams pursuing profits might also desire to increase attendance, as increased attendance would lead to more revenues and ultimately have a positive impact on profits. Due to the fact that both the profit group and wins group should desire high attendance, comparing the differences between the two groups makes for an interesting inquiry.

For the current research, the total home attendance for a team over the entire season was analyzed. However, MLB stadiums vary in size, so the total attendance numbers could not be effectively compared from team to team. To account for the difference in stadium capacity, the average home attendance was divided by the stadium capacity for a given year, which yielded the percentage of the stadium that was filled for the season. Converting to a percentage then controlled for differences in stadium capacity and allowed the attendance KPIs of each team to be compared equitably.

Wage Dispersion

Wage dispersion, or the way in which an organization chooses to distribute their payroll budget to compensate employees, has often been linked as a contributing factor to the

performance of an organization (Winter-Ebmer & Zweimüller, 1999). The methods by which wages are distributed can be categorized into one of two groups: equality in pay (Akerlof & Yellen, 1990) or hierarchical pay (Lazear & Rosen, 1981). However, differing viewpoints exist on which of the two methods is the most effective form of wage dispersion. The opposing theories have inspired previous scholars to investigate wage dispersion in the context of MLB (e.g., Annala & Winfree, 2011; Frick et al., 2003; Hill et al., 2017). Findings of these scholars have shown that generally an equal pay structure in MLB is linked to more wins. Similarly, wage dispersion amongst players has also been referred to as partially representative of cohesion and team chemistry, as equal treatment through pay structure tends to breed a sense of fairness (Hill et al., 2017).

Gini Coefficient. When discussing wage dispersion in baseball, as well as other contexts, it is important to define how this variable is measured so that results may be interpreted correctly, and the implications have more meaning. In sport literature, wage dispersion is primarily measured using the Gini coefficient (e.g., Annala & Winfree, 2011; Frick et al., 2003). Gini coefficient is a statistical measure of distribution, developed by Corrado Gini, to gauge economic inequality among a population (Ceriani & Verme, 2012; Lambert & Aronson, 1993). According to Lambert and Aronson (1993), the coefficient can range from 0 to 1, with a value of zero (0) representing perfect wage equality and a value of one (1) representing perfect inequality. The traditional use of the Gini coefficient has been to measure income or wealth distribution within a country. A country where one person earned all the income or had all the wealth would have a Gini coefficient of one (1), and a country where all the income or wealth was distributed equally among every resident would have a Gini coefficient of zero (0). In sport research, instead of looking at the Gini coefficient for a country, scholars have used the metric to measure wage

dispersion amongst a single team (Annala & Winfree, 2011). In this context, a Gini value of zero (0) would represent all players on the team making the same amount, and a value of one (1) would mean that one player was paid all the money. By calculating Gini for each individual team, scholars are then able to make comparisons amongst teams based on their differences in the wage dispersion metric.

As seen above, the Gini coefficient can be a useful tool for wage dispersion scholars. However, in order to utilize the metric, one must first know how it is calculated. Chappelow (2019) explained:

> The Gini index is often represented graphically through the Lorenz curve, which shows income (or wealth) distribution by plotting the population percentile by income on the horizontal axis and cumulative income on the vertical axis. The Gini coefficient is equal to the area below the line of perfect equality (0.5 by definition) minus the area below the Lorenz curve, divided by the area below the line of perfect equality. In other words, it is double the area between the Lorenz curve and the line of perfect equality. (para. 5)

Another explanation of the calculation is that Gini coefficient is found by taking the average absolute difference of all pairs in a population and then dividing by the average. As the Lorenz curve deviates further from the line of perfect equality, the Gini coefficient becomes higher, representing less equal wage distribution (Ceriani & Verme, 2012; Lambert & Aronson, 1993). Therefore, the most basic explanation is that the Gini coefficient measures the deviation from perfect equality.

Wage dispersion can be a useful KPI for measuring organizational effectiveness in the MLB for a few reasons. First, for MLB teams pursuing wins, wage dispersion should represent equality and could be a suitable measure for monitoring goal attainment. Second, with equality in

pay being linked to team cohesion and team cohesion being related to on-field performance, wage dispersion is again a good KPI to detect differences in organizational goals. Finally, wage dispersion can also be linked to utility (i.e., spending efficiency) of MLB teams. Teams who spend efficiently are less likely to commit a disproportionally large amount of money to a single player, so wage dispersion can be indicative of utility. Applying wage dispersion and the Gini coefficient, the current research calculated the Gini coefficient for every MLB team in each year included in the study. The calculation was then used to analyze the groupings of profits and wins, as well as the groupings of high or low utility.

Team Experience

Team experience is a variable used exclusively in sport research. It refers to the cumulative experience that a team possesses. Measurement of team experience can come in multiple forms including actual age of players, years of service in a league, or years on a particular team (Berri, 2006; Hill et al., 2017; Krautmann, 2009). The choice of which form of experience to use is based upon the other variables being studied.

If salary is a variable of interest, age/experience level is often looked at as a determinant because players start their careers making relatively small salaries. As their experience increases and they become a proven commodity, then their salary will typically increase. Finally, on the back end of their careers, player talent and ability begin to decrease and because of the decline, salary level may decrease as well (Hill et al., 2017).

When winning is a variable in question, team experience also is typically used as a determinant. Teams with more experience, also sometimes referred to as veteran leadership, will often times have more success winning than younger teams (Berri, 2006; Hill et al., 2017). In this case, it is not player age that specifically matters, but instead how long players have been in

a league. Furthermore, Hill et al. (2017) pointed out that teams who have been together for a longer period of time have had a better chance to develop team chemistry, and in turn, may have more success winning.

The current study was concerned with team experience as it is expressed by cumulative major league service time of all players on an MLB team in a given year. This variable was calculated for each team in a given year by adding the MLB service time for every player on the payroll of that team. Teams that have a strategic organizational goal of wins may be more likely to construct a roster with a greater experience level. However, that roster may be more expensive but also more likely to win games. Conversely, teams seeking more utility or spending efficiency may try to identify younger, cheaper talent and will thus have a more inexperienced roster. In conclusion, team experience seems to be an appropriate organizational effectiveness KPI for the strategic organizational goals, as well as for the utility gained from spending efficiency.

Cost of Attendance

In sport, cost of attendance refers to how much it costs for a fan to attend a game. Not only does that include the price of a ticket, but it also includes items such as parking, concessions, and souvenirs (Coates & Humphreys, 2007; Krautmann & Berri, 2007; Marburger, 1997). If attendance level remains unchanged, a higher cost of attendance will generate more revenue which will then increase profit. In this case, teams pursuing profits would have a higher cost of attendance in order to increase their revenues. However, demand also plays a role with attendance. Attendance generally increases as a team wins more games, and with a higher demand, a team has the ability to raise their cost of attendance (Coates & Humphreys, 2007).

When calculating cost of attendance for an academic study, one could add each individual element to arrive at a figure that represents total cost. Alternatively, use of the Fan

Cost Index (FCI) was suggested by Coates and Humphreys (2007), which would promote uniformity and comparability across research studies. The FCI is a metric based upon a family of four attending a game with four average priced tickets, parking for one car, two draft beers, four soft drinks, four hot dogs, and two team caps. The current study used FCI as a KPI dependent variable representing the cost of attendance. Differences in FCI were then analyzed based on the two independent variables of strategic organizational goals and utility.

Franchise Value

The final KPI of organizational effectiveness in the current study was franchise value. Franchise value in MLB refers to the worth of each team based on the brand value, revenue streams, and assets (e.g., stadiums; Ozanian & Badenhausen, 2019). In the for-profit sector where MLB teams operate, franchise or company value acts as a cumulative sum of all business activities. Companies considered to be effective and prospering (i.e., abundance model; Cameron, 2015) would be more likely to have a higher valuation. Similarly, those for-profit companies effectively achieving their goals (i.e., goal attainment; Georgopoulos & Tannenbaum, 1957) would also have higher valuations.

In terms of the current research and MLB teams, the purpose was to look at how organizational goals for a given year impacted franchise values. Therefore, franchise value was recorded for each team directly before and after the given year of the study. These before and after values were then used to calculate percentage change in franchise value for the given year. According to Alexander and Kern (2004), a strong link exists between team success and higher franchise value. Teams with a strategic organizational goal of wins may then have a higher increase in franchise value than those pursuing profits. Similarly, spending more efficiently and receiving higher utility could be positively correlated with franchise value (Scelles et al., 2016).

CHAPTER III

METHODOLOGY

The current study focused primarily on differences in strategy and spending in MLB. As stated in Chapter I, the research questions were focused on differences between levels of multiple factors and how each level of those factors is related to MLB organizational effectiveness. The two factors represented multiple strategic goals and spending efficiency, while MLB organizational effectiveness was represented by seven different KPIs that were identified in Chapter II.

In order to clearly layout the methods in which this study was conducted, the remainder of this chapter is divided into the following sections: (1) research model, (2) data and variables, (3) hypotheses, and (4) statistical analyses. The first section presents and explains a visual representation of the research model for better understanding of the research study. The next section describes the data that were collected, along with manipulations that were used to create the necessary variables. Section three introduces the hypotheses that correspond to each research question. The final section provides background on and explains the use of the statistical analysis method.

Research Model

In building the research model, two categorical independent variables, also known as factors, were first established: (a) strategic organizational goal and (b) utility achieved. Both factors had two levels (groupings). For strategic organizational goal, the two groupings were profit and wins, while the two levels of utility achieved were high and low. Then, utilizing the

work of previous scholars as described in Chapter II, the continuous dependent variables (KPIs) which represented MLB organizational effectiveness were determined. Finally, two confounding variables (covariates) of market size and year were explored, with ultimately only the market size variable being included in the research model.

In justification for market size as a covariate, it would be considered a confounding variable because teams in larger markets have higher revenue generation potential and more resources (Alexander & Kern, 2004). An argument can easily be made that these advantages over smaller market teams could affect both the independent and dependent variables in the study. Market size measured by the total population of an area would fit the definition of a covariate because it is continuous in nature (Tabachnick & Fidell, 2013).

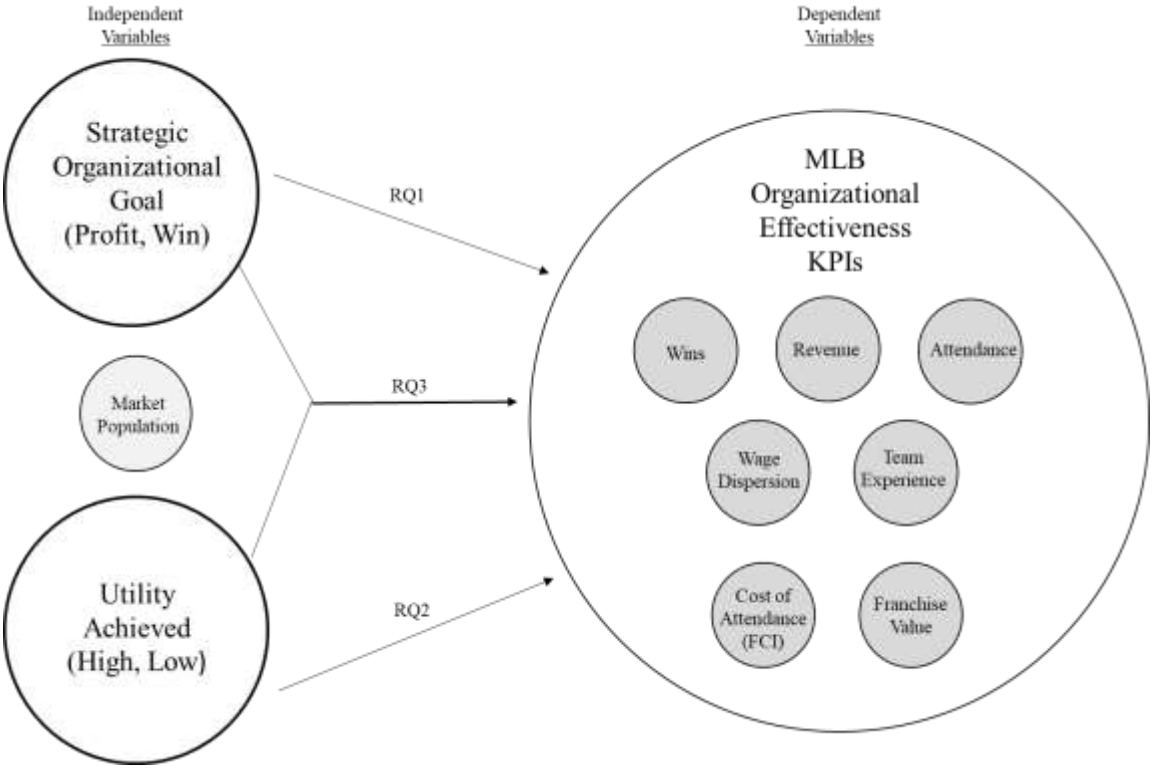
The second confounding variable that was considered and then dropped from the current study was year. Year is sometimes controlled for to account for time-specific fixed effects (e.g., Annala & Winfree, 2011; Frick et al., 2003), such as variance from abnormal shocks due to environmental factors in a given time-period (e.g., financial crisis or work stoppage). However, in the case of the current study, year as a covariate was found to violate the linearity assumption meaning that the year variable did not have a linear relationship with other covariate and dependent variables. A violation of linearity causes curvilinearity which can severely reduce the power of the significance test (Tabachnick & Fidell, 2013). Due to this violation, a minimal contribution to the further explanation of variance, and the recommendation of Tabachnick and Fidell (2013) to limit the number of covariates in order to preserve degrees of freedom, it was decided to not include year as a covariate in the research model.

Based on the above outlined variables, Figure 3.1 displays the research model. Please note that all KPIs are separate, dependent variables. While they are all included together in one

circle, this does not mean that they make up one single variable. The circle is just included to signify that the KPIs together represent the concept of organizational effectiveness for an MLB team. The circle also simplifies the model, as an arrow does not have to be drawn from each independent variable to every dependent variable.

Figure 3.1

Research Model



Data and Variables

In order to investigate the relationship illustrated in Figure 3.1, data for MLB franchises were collected and analyzed for all seasons between 2010 and 2019. Each of the 30 MLB teams in a given season of the study constituted a team-year observation. Thus, with the study spanning 10 total seasons, and every team from the timespan included in the data set, the study had a population size of 300.

For each team-year observation, the data pertaining to each variable was manually collected from multiple sources. It should be noted that, when necessary, financial data were adjusted to 2019 dollars using the *Bureau of Labor Statistics* CPI Inflation calculator (https://data.bls.gov/cgi-bin/cpicalc.pl). By adjusting the applicable values, it made for more reasonable comparisons. Furthermore, for convenience, each of the ten variables and their descriptions are listed in Table 3.1.

Table 3.1

Variable List

Variable	Description
Strategic Organizational Goal (SOG)	Two-level factor (Profit, Win) determined by profit margin. Higher margins are grouped as profits and lower margins are wins.
Utility Achieved (UA)	Two-level factor (High, Low) determined by money spent per win. Less money spent equals high utility and more spent equals low.
Wins (WIN)	Regular season wins.
Revenues (REV)	Money generated from business operations.
Attendance (ATT)	Percentage of home stadium that is filled for the year.
Wage Dispersion (WD)	Gini coefficient for a team's payroll in a season.
Team Experience (TE)	Total league service time for all players on an MLB roster.
Cost of Attendance (CA)	Fan Cost Index (FCI) for a team in a given year.
Franchise Value (FV)	Valuation of team worth.
Market Population (MP)	Covariate representing population of team's metropolitan area.

Independent Variables

Starting with the first independent variable (SOG), which was the factor concerning strategic organizational goals and the groupings of profits and wins, operating income and revenue data were collected from the *Forbes* website (https://www.forbes.com/mlb-valuations/list/). Using that data, profit margins for each team-year observation were then calculated by dividing operating incomes by revenues. Each observation was then grouped into profit (higher margin) or wins (lower margin) based on their profit margin. It should be noted that the line for determining the profit or win grouping was the mean profit margin for the data set (9.0%).

The second independent variable (UA) was a factor with two levels. This factor represented the utility achieved through spending efficiency, and the levels are designated as high and low. Data for team payroll and wins were collected from MLB team websites, which was then used to calculate a variable representing money spent per win (team payroll/wins). To determine the groupings of each team-year observation, the calculated metric was compared to the average for the dataset ($1.54 million). Those teams spending more than average per win were placed in the low utility group, and those spending less than average were categorized as high utility.

Dependent Variables

The seven dependent variables in the current study were KPIs which have been determined to represent organizational effectiveness of MLB teams. Two of the KPIs, number of wins (WIN) and amount of team experience (TE), were collected from MLB team websites. The WIN variable was strictly the number of wins for the regular season for each team-year

observation. The total service time for every player on the payroll of a team in a given year represented TE, and this was found by summing the entire service time column on an MLB roster.

The next two KPIs, amount of revenue (REV) and yearly franchise values (FV), were collected for each team-year observation from the *Forbes* website. REV was represented by an inflation-adjusted dollar amount recorded at the end of the MLB season with the intention of seeing the impacts on the independent variables on revenue for a given year. Data for the FV variable were also collected at the end of each season, and then using the FV from the previous season, the percentage change from year-to-year was calculated. Using the percentage change helped control for historical factors (e.g., length of franchise existence) when comparing dollar values that varied drastically between teams (Alexander & Kern, 2004; Davis, 2008). Similarly, the KPI cost to attend games (CA), represented by inflation-adjusted FCI, was obtained from the well-known sport database *Rodney Fort's Sports Business Data* (https://sites.google.com/site/rodswebpages/ codes).

Another KPI was a measure of the attendance for each team at home games (ATT). For the current study, ATT was expressed as the percentage of the stadium filled so that stadiums of differing capacities could be compared. For each team-year observation, average attendance in a given year were collected on the *ESPN* website (http://www.espn.com/mlb/attendance) and the capacity of a team's home stadium for a single game was determined on *Ballparks of Baseball* (https://www.ballparksofbaseball.com/). The average attendance was then divided by the stadium capacity to give the percentage of the stadium that was filled for a team in a given season.

Finally, the dispersion of wages amongst a team roster (WD) was another KPI that required some calculation. First, for each team-year observation, the salaries of every player on

the MLB team payroll were collected from MLB team websites. Then the Gini coefficient were calculated and transferred to the dataset as the WD variable.

Covariate

There was also a covariate included in the proposed study. By definition, a covariate must be either a continuous, ordinal, or dichotomous variable. Populations of MLB team markets (MP), which is a continuous variable, was the included covariate. The current study defined the market for a team as the combined metropolitan area in which the team was located. Thus, for each team-year observation the corresponding combined metropolitan area population was recorded using the website of the *United States Census Bureau* (https://www.census.gov/programs-surveys/metro-micro/data/tables.html). For areas that had two MLB teams (e.g., New York), the population was split in half based on the assumption that individuals are likely not active supporters of both teams (Mills et al., 2016).

Bringing all the variables of the study together, the following two-way MANCOVA additive model is given:

$$\begin{Bmatrix} Y_{1ijk} \\ Y_{2ijk} \\ \vdots \\ Y_{pij} \end{Bmatrix} = \begin{Bmatrix} \mu_1 \\ \mu_2 \\ \vdots \\ \mu_p \end{Bmatrix} + \begin{Bmatrix} \tau_{1i} \\ \tau_{2i} \\ \vdots \\ \tau_{pi} \end{Bmatrix} + \begin{Bmatrix} \delta_{1j} \\ \delta_{2j} \\ \vdots \\ \delta_{pj} \end{Bmatrix} + \begin{Bmatrix} \gamma_{1ij} \\ \gamma_{2ij} \\ \vdots \\ \gamma_{pij} \end{Bmatrix} + \begin{Bmatrix} \beta_1 X_{ijk} \\ \beta_2 X_{ijk} \\ \vdots \\ \beta_p X_{ijk} \end{Bmatrix} + \begin{Bmatrix} \varepsilon_{1ijk} \\ \varepsilon_{2ijk} \\ \vdots \\ \varepsilon_{pijk} \end{Bmatrix}, \quad (7)$$

where $i = 1, 2;\ j = 1, 2;\ k = 1, 2,\ldots,n_{ij},$

- Y_{pij} is the k^{th} observation of an organizational effectiveness KPI in the ijth cell, respecting to level *i* of the factor strategic organizational goal and level *j* of the utility achieved.
- μ_p is the global means of the activity of all KPIs.
- τ_{pi} is the effects of the ith treatment of the factor strategic organizational goal.
- δ_{pj} is the effects of the jth treatment of the factor utility achieved.
- γ_{pij} is the effects of the interaction between strategic organizational goal and utility received.
- X_{ijk} denotes the block effect vector of the covariate market population.
- ε_{pijk} is the random error.

*Note that the additive properties of equation 7 mean that seven equations (one for each dependent variable) are included to arrive at the cumulative total.

Delimitations

While the current study was extensive, it was not without delimitations. The first delimitation was the chosen data frame of 2010 to 2019. This data frame allowed for a large enough population size (N = 300) to conduct the desired statistical tests, while not risking including data from times where economic conditions, and therefore variable relationships, may have been quite different. However, by limiting the data frame to only as far back as 2010, the study did not gain much of a historical perspective on the issue. Furthermore, the power level supplied by the population of 300 in the data only allowed for two levels on each independent variable, when three actually may have been supported and preferred.

A second delimitation was the choice of MLB as the setting for the research. The choice was made to keep the size of the study manageable, but the findings are only applicable in baseball and are not generalizable to other sports. Similarly, the choice of KPIs to represent organizational effectiveness also limits generalizability. Those KPIs are specific to organizational effectiveness of MLB teams, so connections to other settings or even other facets of an MLB franchise cannot be made.

Finally, the manner in which the strategic organizational goal was determined for an organization was admittedly simplistic and flawed. However, with very little previous research to use as a guide, this part of the study is somewhat exploratory. The potential for the methods and findings to be incorporated in more advanced models in the future is viable and encouraged.

Hypotheses

With a model in place and the variables identified, the research questions could then be better understood and analyzed. The premise of Q1 was to examine the organizational goal of an MLB team individually, while Q2 did the same with utility achieved. Conversely, Q3 tested for

interaction effect of the two independent variables to see if the simultaneous joint effect on one or more dependent variables was significantly different than the sum of its parts. Table 3.2 lists each research question and its corresponding hypothesis, which is based on the framework and theory outlined by the review of literature in Chapter II.

Table 3.2

Research Questions and Hypotheses

Q#	Research Question	H#	Hypothesis
Q1	Is there a difference between a primary MLB organizational goal of wins versus a primary organizational goal of profits in terms of KPIs representing organizational effectiveness?	H1	There is a difference in at least one organizational effectiveness KPI for MLB teams with a primary goal of wins as opposed to MLB teams with a primary goal of profits.
Q2	Is there a difference in levels of utility achieved through spending efficiency by MLB teams as measured by the KPIs signifying organizational effectiveness?	H2	There is a difference in at least one organizational effectiveness KPI for MLB teams who achieve high utility as opposed to those with a low level.
Q3	Is there an interaction effect between primary MLB organizational goals and spending efficiency in terms of their relationship with the organizational effectiveness KPIs?	H3	An interaction effect exists between primary MLB organizational goals and spending efficiency when it comes to at least one organizational effectiveness KPI.

Statistical Analyses

To answer the above research questions and test the proposed hypotheses, the current study implemented a two-way MANCOVA. This statistical method is used to assess the differences on multiple continuous dependent variables by multiple independent variables containing levels, all while controlling for covariates (Tabachnick & Fidell, 2013). According to Ramos et al. (2012), by adding covariates to a model, their effect is eliminated from the relationship between the independent grouping variables and the continuous dependent variables.

Additionally, appropriate covariates also reduce the error term because they can help further explain variance. Another feature of MANCOVA is the ability to test for interaction between multiple independent groupings. An interaction effect occurs when the combination of two factors causes a simultaneous joint effect on one or more dependent variables that is significantly different than the sum of its parts (Tabachnick & Fidell, 2013).

MANCOVA Assumptions

After the data were collected, the first step of statistical analysis was to check the assumptions of MANCOVA. The MANCOVA assumptions are: (a) independent random sampling, (b) independent variables are categorical, (c) dependent variables and covariates are continuous, ordinal, or dichotomous, (d) independence of observations, € no outliers (f) absence of multicollinearity, (g) multivariate normality, (g) homogeneity of variance, and (h) homogeneity of covariances. For the current study, the assumption of independent random sampling would not be applicable because the dataset is actually a population. Both independent variables are categorical factors with two levels, while the dependent variables and covariate were all continuous.

As for independence of observations, this assumption was somewhat violated. However, this was not detrimental to the current study and is actually quite common in sport research. Within a given season, teams are paired together in games with one team winning and one team losing. All teams within the league have influence on others for whether games are won or lost, and thus the league average winning percentage will always be .50 (Berri, 2006). Additionally, over multiple seasons, data from the same organization will be collected multiple times. One possibility for dealing with sport research that examines organizations over time is to treat it as panel data, which allows multiple data points from the same individual to analyzed

longitudinally (e.g., Annala & Winfree, 2011). Alternatively, some would argue that a sport franchise over multiple seasons is not panel data because that team does not have the exact same make-up year after year (e.g., roster changes). Under this school of thought, the recommendation is to treat each team-year observation from the same franchise as an individual subject, and deal with the violation of lack of independence for game outcome by using careful consideration when interpreting results (Hill et al., 2017; Mondello & Maxcy, 2009). The current study chose the latter suggestion, foregoing the use of panel data, and carefully interpreting win-loss outcomes with an understanding that inter-team influence exists through direct competition.

The assumption of no outliers was another instance where a violation occurred. To detect outliers within the collected data set, Mahalanobis distance, which is based on the chi-square distribution, was used to find the distance between each point and the distribution within a multivariate space (Leys et al., 2018). For the current study, the Mahalanobis distance was assessed using $p < .001$ and degrees of freedom equal to the number of dependent variables in the model (7). This yielded a critical value of 24.32, and four cases exceeded this value which made them outliers (2013 Astros, 2013 Marlins, 2014 Giants, & 2018 Yankees). Per recommendations of Tabachnick and Fidell (2013), these four cases were removed due the sensitivity of MANCOVA to outliers.

Absence of multicollinearity was checked using correlations between dependent variables. The largest value in the correlation matrix occurred between the variables of Wins and Team Experience ($r = .60$). This correlation value was acceptable as no correlation should exceed $r = .80$ (Tabachnick & Fidell, 2013), indicating that no violations of the multicollinearity assumption occurred. Table 3.3 provides the full correlation matrix for the absence of multicollinearity assumption. Similarly, there was no violation of the multivariate normality

assumption, as multivariate normality can be assumed with a large enough sample size (>20 per level of independent variables) due to the Central Limit Theorem (Tabachnick & Fidell, 2013).

Table 3.3

Correlation Matrix

	WIN	REV	ATT	WD	TE	CA	FV
WIN	1.000						
REV	.347	1.000					
ATT	.422	.534	1.000				
WD	-.115	.201	.063	1.000			
TE	.602	.401	.489	-.076	1.000		
CA	.065	.561	.291	.217	.266	1.000	
FV	.141	-.028	.108	.021	.075	-.039	1.000

Note. Values above $r = .8$ indicate concerns for multicollinearity.

The assumption homogeneity of variance was checked with Levene's test (Table 3.4), which when returning a significant value ($\alpha = .05$) is considered to have violated the assumption. In the case of the current study the variable Franchise Value was significant ($\alpha = <.001$). Allen and Bennett (2007) suggested that when the assumption of homogeneity of variance is violated, the likelihood of type I error is increased. However, if only one dependent variable violates the assumption it is acceptable to continue and evaluate the corresponding univariate ANOVAs at a stricter alpha level (i.e., $\alpha = .01$). The current study implemented this guidance and chose to include Franchise Value as a variable, albeit with cautious evaluation.

Table 3.4

Levene's Test

	F	df1	df2	*p*-value
WIN	1.669	3	291	.174
REV	.423	3	291	.737
ATT	.718	3	291	.542
WD	.304	3	291	.822
TE	1.870	3	291	.135
CA	1.527	3	291	.208
FV	6.514	3	291	.000*

Note. *α = .05.

Finally, homogeneity of covariance was assessed using Box's M-Test (Table 3.5). This test is considered to be highly sensitive to discrepancies in cell sample sizes, and consequently, significance is often interpreted at the α = .001 level (Tabachnick & Fidell, 2013). Even with a violation of Box's M, proceeding to the MACOVA analysis is considered acceptable. The only recommendation is that Pillai's Trace should be the chosen test statistic to interpret, as it is the most conservative when compared to the alternatives (Tabachnick & Fidell, 2013). In the case of the current study, a significance value of p = .005 was calculated for Box's M, signifying there was no violation and all MANCOVA test statistics could be considered.

Table 3.5

Box's M-Test

	F
Box's M	135.349
F	1.437
df1	84
df2	128815.1
p-value	.005

Note. α = .001.

Power Analysis

The next step after checking assumptions was to assess the power of the analysis. Utilizing *G*Power* 3.1.9.2, a post hoc power analysis for the main effects of the proposed two-way MANCOVA was conducted. With specifications set at a medium effect size and a sample size of 300, an estimated power of .94 was yielded. A power of .94 is acceptable as it exceeds the desired threshold of .80 in most research (Tabachnick & Fidell, 2013). Once the power analysis was complete, descriptive statistics were calculated using *R* version 3.6.3 to provide a better visualization of the dataset.

MANCOVA Analysis

The final step of statistical analysis in the proposed study was to perform the MANCOVA to address the research questions. Again, employing *R* version 3.6.3, the MANCOVA function was run to produce Pillai's trace statistic, Wilks Lambda, Lawley-Hotelling trace statistic, and Roy's largest root for comparison of between-group and within-group variance. All four test statistics are intended for the same general purpose with all of them

being similarly tested against the *F*-distribution for significance. However, Olson (1976) delineated between the test statistics with the explanation that Pillai's trace may be best for general use due to its comparatively conservative and robust nature, Wilk's Lambda and Lawley-Hotelling can be sensitive to violations of homogeneity of covariance in smaller samples, and Roy's largest root may be the most likely to produce Type I errors. For the current study, Pillai's trace was chosen for interpretation of significance based on its robust and conservative nature regarding assumption violations, which fit well with the exploratory nature of the research (Olson, 1974, 1976). The remaining three test statistics were also reported to provide further insight into the results.

CHAPTER IV

RESULTS

The purpose of the current research was to investigate MLB team organizational goals (i.e., Profit or Wins), spending efficiency (i.e., utility achieved), and various organizational KPIs. As stated in Chapter III, a MANCOVA was used to analyze the relationship of the two independent factors with the dependent KPI variables. The intention was to create a better understanding of the possible ancillary effects of the varying organizational strategies.

The results of the statistical analyses are presented in Chapter IV and are split into the following sections: (1) descriptive statistics, (2) MANCOVA, and (3) univariate ANOVAs. The descriptive statistics are meant to provide a summary of the nature and structure of the data (Fisher & Marshall, 2009). Output for the MANCOVA shows the effect of independent factor variables on the entire combination of dependent variables, when controlling for the covariate. Finally, the univariate ANOVAs show the effect of each factor on the individual dependent variables, also while adjusting for the covariate (Ramos et al., 2012).

Descriptive Statistics

The first portion of the descriptive statistics was an analysis of the independent variables (factors). As explained in Chapter II, the first factor (SOG) had two levels, profit and win. Teams were assigned to the win category when their profit margin was <9% and assigned to the profit category when their margin was >9%. The second factor (UA) also had two levels (low & high), and teams were assigned to the categories based on their relative position to the average dollars spent per win ($1,540,296.50) for the data set. Teams spending over the average were assigned

to the low category and teams spending under were assigned to high. After using Mahalanobis distance to identify and remove outliers (Leys et al., 2018), there were 296 team-year observations left in the data set. Table 4.1 displays the distribution of the 296 observations on each of the two independent factors.

Table 4.1

Between-Subjects Factors

Factor	Level	*N*
SOG	Win	144
	Profit	152
UA	Low	132
	High	164

Note. $N = 296$.

The next step in summarizing the data was to calculate the mean (*M*), standard deviation (*SD*), and sample size (*N*) for each dependent variable (KPI) and its combinations with the two independent factors. Table 4.2 shows the summary data, with column one indicating the dependent variable, columns two and three showing the factors (i.e., SOG & UA), and columns three through five presenting the summary statistics. Along with providing a description of the data, the means of the various combinations of factors and dependent variables can be used to assist with the determination of effect direction when significance is found within the MANCOVA and univariate ANOVA analyses (Bedeian, 2014). The *N* column also reiterates the application of the Central Limit Theorem to the assumption of multivariate normality for MANCOVA, which was discussed in Chapter III, as every combination of dependent and independent variables exceeded the threshold of 20 (Tabachnick & Fidell, 2013).

Table 4.2

Descriptive Statistics

DV	SOG	UA	*M*	*SD*	*N*
WIN	Win	Low	80.65	12.00	81
		High	83.43	11.93	63
		Total	82.49	11.97	144
	Profit	Low	80.40	9.35	51
		High	78.48	12.24	101
		Total	79.56	11.39	152
	Total	Low	80.49	11.01	132
		High	81.52	12.32	164
		Total	81.06	11.75	296
REV (in millions)	Win	Low	295.72	90.45	81
		High	297.17	87.28	63
		Total	296.35	89.08	144
	Profit	Low	283.16	81.66	51
		High	280.61	90.44	101
		Total	281.47	87.60	152
	Total	Low	290.87	87.37	132
		High	286.97	89.60	164
		Total	288.71	88.64	296
ATT	Win	Low	.70	.18	81
		High	.68	.15	63
		Total	.69	.17	144
	Profit	Low	.67	.18	51
		High	.69	.18	101
		Total	.68	.18	152
	Total	Low	.69	.18	132
		High	.68	.17	164
		Total	.69	.18	296
WD	Win	Low	.58	.06	81
		High	.59	.06	63
		Total	.59	.06	144
	Profit	Low	.57	.05	51
		High	.57	.06	101
		Total	.57	.06	152
	Total	Low	.58	.06	132
		High	.58	.06	164
		Total	.58	.06	296

Table 4.2, continued

DV	SOG	UA	*M*	*SD*	*N*
TE	Win	Low	159.25	22.75	81
		High	159.24	23.04	63
		Total	159.24	22.87	144
	Profit	Low	153.68	27.45	51
		High	152.57	28.06	101
		Total	153.19	27.63	152
	Total	Low	155.83	25.79	132
		High	156.68	25.26	164
		Total	156.30	25.43	296
CA	Win	Low	216.06	46.78	81
		High	220.88	60.60	63
		Total	218.18	53.13	144
	Profit	Low	219.97	51.58	51
		High	205.07	50.34	101
		Total	210.07	51.08	152
	Total	Low	217.57	48.53	132
		High	211.14	54.87	164
		Total	214.01	52.15	296
FV	Win	Low	.21	.20	81
		High	.15	.16	63
		Total	.17	.18	144
	Profit	Low	.11	.13	51
		High	.15	.15	101
		Total	.13	.14	152
	Total	Low	.15	.17	132
		High	.15	.16	164
		Total	.15	.16	296

Note. The *M* and *SD* of REV are interpreted in millions of dollars.

Multivariate Analysis of Covariance

The main purpose of conducting a MANCOVA analysis is to analyze the relationships of independent factors with dependent variables, all while controlling for covariates (Tabachnick & Fidell, 2013). In the case of the current study, market population (MP) was used as the lone covariate in the model in order to see if the factors (SOG & UA) had effects on the dependent variables beyond the effect of MP. Sweet and Grace-Martin (2012) suggested that when the covariate is a measured variable (e.g., MP), it is good practice to also report estimated marginal means along with the standard descriptive statistics. Estimated marginal means are produced via

the model and offer insight into the effect of the covariate that can be helpful with interpretation of results. The difference with estimated marginal means is that they are calculated using the mean value of the covariate which can cause a slight adjustment from the raw means (Sweet & Grace-Martin, 2012). Table 4.3 provides the estimated marginal means calculated at the mean value of MP, which was 3,993,725.78.

Table 4.3

Estimated Marginal Means

					95% Confidence Int.	
Factor	DV	Level	*M* [a]	*SE*	Lower	Upper
SOG	WIN	Win	81.99	0.99	80.03	83.96
		Profit	79.42	0.97	77.51	81.34
	REV (in millions)	Win	296.02	6.54	283.14	308.90
		Profit	280.54	6.69	267.37	293.72
	ATT	Win	.69	.02	.660	.72
		Profit	.68	.02	.648	.71
	WD	Win	.59	.01	.58	.60
		Profit	.57	.01	.56	.58
	TE	Win	159.00	2.08	154.92	163.09
		Profit	153.05	2.03	149.05	157.04
	CA	Win	218.27	4.03	210.35	226.19
		Profit	211.88	4.12	203.78	219.98
	FV	Win	.18	.01	.15	.21
		Profit	.13	.01	.11	.16
UA	WIN	Low	80.46	1.04	78.42	82.50
		High	80.95	0.93	79.12	82.79
	REV (in millions)	Low	287.59	6.97	273.88	301.30
		High	288.98	6.25	276.67	301.29
	ATT	Low	.68	.02	.65	.71
		High	.68	.01	.66	.71
	WD	Low	.58	.01	.57	.59
		High	.58	.00	.57	.59
	TE	Low	156.13	2.16	151.88	160.38
		High	155.92	1.94	152.10	159.74
	CA	Low	217.14	4.29	208.71	225.57
		High	213.01	3.85	205.44	220.59
	FV	Low	.16	.01	.13	.19
		High	.15	.01	.13	.18

Note. *M* [a] is adjusted for the covariate value of MP = 3,993,725.78.

After compiling descriptive statistics to provide context for the results, the next step was to perform the MANCOVA to investigate the multivariate effects of the research model. The results from this analysis are listed in Table 4.4. For each of the of the independent variables, covariate, and interaction, four test statistics (Pillai's trace, Wilk's Lambda, Hotelling's trace, & Roy's largest root) were reported, with Pillai's trace being used for interpretation of significance.

Table 4.4

MANCOVA

Effect	Test	*F*	*df*	Error *df*	*p*-value	ηp2
Intercept	Pillai's Trace	.98	7	285	<.001**	.98
	Wilks' Lambda	.02	7	285	<.001**	.98
	Hotelling's Trace	45.65	7	285	<.001**	.98
	Roy's Largest Root	45.65	7	285	<.001**	.98
MP	Pillai's Trace	.30	7	285	<.001**	.30
	Wilks' Lambda	.70	7	285	<.001**	.30
	Hotelling's Trace	.43	7	285	<.001**	.30
	Roy's Largest Root	.43	7	285	<.001**	.30
SOG	Pillai's Trace	.06	7	285	.012*	.06
	Wilks' Lambda	.94	7	285	.012*	.06
	Hotelling's Trace	.07	7	285	.012*	.06
	Roy's Largest Root	.07	7	285	.012*	.06
UA	Pillai's Trace	.01	7	285	.98	.01
	Wilks' Lambda	.99	7	285	.98	.01
	Hotelling's Trace	.01	7	285	.98	.01
	Roy's Largest Root	.01	7	285	.98	.01
SOG*UA	Pillai's Trace	.05	7	285	.049*	.05
	Wilks' Lambda	.95	7	285	.049*	.05
	Hotelling's Trace	.05	7	285	.049*	.05
	Roy's Largest Root	.05	7	285	.049*	.05

Note. α levels: ** .001; * .05.

The multivariate results displayed above show significant values for the SOG factor, the SOG*UA interaction, and the MP covariate. In terms of SOG, this significant finding indicates that, after controlling for the covariate, there was a significant difference between the MLB team organizational goals (i.e., profit & win) for the group of dependent variables (KPIs) as a whole. Furthermore, the relatively equivalent values of Hotelling's trace and Roy's largest root for SOG

most likely imply that the effect is predominantly associated with just a few of the dependent variables (Olson, 1974). The significance of the interaction variable denotes that the effects of each factor were different at each level of the other factor across the combination of dependent variables in the model. Finally, the significance of MP suggests that market population was a significant predictor of the organizational effectiveness KPIs, and that those KPIs were adjusted accordingly (reflected by estimated marginal means).

Applying these results to the research questions and hypotheses outlined in Chapter III, H1 was supported as there was evidence of a significant difference between an MLB strategic organizational goal of wins versus a strategic organizational goal of profit. In terms of H2, no significant difference in level of utility achieved (high, low) was found, which would not support the research hypothesis. Last, H3 was supported as a significant interaction effect occurred in the research model.

Univariate Analysis of Variances

While a MANCOVA analysis provides multivariate results and understanding of a research model, it is often also necessary to calculate univariate ANOVAs to gain a more intuitive understanding of individual relationships within the data (Sweet & Grace-Martin, 2012; Tabachnick & Fidell, 2013). The current research took this approach by calculating univariate ANOVAs for each of the two factors (SOG & UA), the interaction of the factors (SOG*UA), and the covariate (MP) to investigate their effects on each of the individual dependent variables. Supplementing this analysis with the descriptive statistics and estimated marginal means, significant differences between groups and the directionality of those differences was determined. Table 4.5 contains the analyses of the univariate ANOVAs.

Table 4.5

Univariate ANOVAs

Source	DV	Type-III *SS*	*df*	*MS*	*F*	*p*-value	ηp2
Corrected	WIN	1564.17[a]	4	391.04	2.91	.022*	.04
Model	REV	5.59*E*17[b]	4	1.40*E*17	23.04	<.001***	.24
	ATT	.34[c]	4	.09	2.87	.024*	.04
	WD	.04[d]	4	.01	3.26	.012*	.04
	TE	20879.12[e]	4	5219.78	8.94	<.001***	.11
	CA	134160.04[f]	4	33540.01	14.61	<.001***	.17
	FV	.32[g]	4	.08	3.16	.015	.04
Intercept	WIN	381508.80	1	381508.80	2835.76	<.001***	.91
	REV	2.68*E*18	1	2.68*E*18	441.34	<.001***	.60
	ATT	24.03	1	24.03	802.61	<.001***	.73
	WD	19.70	1	19.70	6571.82	<.001***	.96
	TE	1244815.29	1	1244815.29	2131.59	<.001***	.88
	CA	1950956.48	1	1950956.48	849.62	<.001***	.75
	FV	1.56	1	1.56	62.16	<.001***	.18
MP	WIN	533.80	1	533.80	3.97	.047*	.01
	REV	5.43*E*17	1	5.43*E*17	89.42	<.001***	.24
	ATT	.32	1	.32	10.82	.001***	.04
	WD	.03	1	.03	8.97	.003**	.03
	TE	18129.95	1	18129.95	31.05	<.001***	.10
	CA	120960.08	1	120960.08	52.68	<.001***	.15
	FV	.00	1	.00	.01	.91	.00
SOG	WIN	510.26	1	510.26	3.88	.049*	.01
	REV	1.66*E*16	1	1.66*E*16	3.89	.049*	.01
	ATT	.01	1	.01	.33	.57	.00
	WD	.01	1	.01	3.86	.050*	.01
	TE	2454.75	1	2454.75	4.20	.041*	.01
	CA	2827.62	1	2827.62	1.23	.27	.00
	FV	.17	1	.17	6.81	.010**	.02
UA	WIN	16.67	1	16.67	.12	.725	.00
	REV	1.34*E*14	1	1.34*E*14	.02	.882	.00
	ATT	.00	1	.00	.01	.908	.00
	WD	.00	1	.00	.45	.503	.00
	TE	3.01	1	3.01	.01	.943	.00
	CA	1177.49	1	1177.49	.51	.475	.00
	FV	.00	1	.00	.09	.771	.00

Table 4.5, continued

Source	DV	Type-III *SS*	*df*	*MS*	*F*	*p*-value	ηp2
SOG*UA	WIN	546.95	1	546.95	3.99	.047*	.03
	REV	1.64*E*15	1	1.64*E*15	.27	.60	.001
	ATT	.02	1	.02	.80	.37	.00
	WD	3.49*E*-5	1	3.49*E*-5	.01	.91	.000
	TE	223.64	1	223.64	.38	.54	.00
	CA	3013.60	1	3013.60	1.31	.25	.00
	FV	.18	1	.18	7.07	.008**	.02
Total	WIN	39149.61	291	134.54			
	REV	1.77*E*18	291	6.07*E*15			
	ATT	8.71	291	.03			
	WD	.87	291	.00			
	TE	169939.12	291	583.98			
	CA	668214.66	291	2296.27			
	FV	7.30	291	.03			
Corrected Total	WIN	1985849.00	296				
	REV	2.70*E*18	296				
	ATT	147.98	296				
	WD	100.39	296				
	TE	7422069.00	296				
	CA	1.44e7	296				
	FV	14.33	296				

Note. *α* levels: ***.001; ** .01; * .05.
FV is interpreted at α = .01 due to significant result from Levene's Test
a. R Squared = .038 (Adjusted R Squared = .025)
b. R Squared = .241 (Adjusted R Squared = .230)
c. R Squared = .038 (Adjusted R Squared = .025)
d. R Squared = .043 (Adjusted R Squared = .030)
e. R Squared = .109 (Adjusted R Squared = .097)
f. R Squared = .167 (Adjusted R Squared = .156)
g. R Squared = .042 (Adjusted R Squared = .028)

Similar to the MANCOVA results, the univariate ANOVAs produced significant values for the SOG, SOG*UA, and MP variables. The significance of the covariate, MP, indicates that market population is significantly associated with changes in values of all the KPIs except franchise value. In regard to SOG, five dependent variables (WIN, REV, WD, TE, & FV) were found to be significant, and in all cases, the strategic organizational goal of wins (vs. profits) had significantly higher values for those KPIs. For the interaction (SOG*UA), there were significant

values for WIN and FV. Utilizing Table 4.2, it can be observed that teams with a strategic organizational goal of wins and high utility achieved (Win-High) had the most average wins at 83.43, which was followed by the Win-Low (80.65), Profit-Low (80.40), and Profit-High (78.48) groups. As for franchise value, teams that employed the strategic organizational goal of wins, coupled with low utility, experience the largest average increase in franchise value (.21). This was followed by Win-High (.15), Profit-High (.15), and then Profit-Low (.11).

CHAPTER V

DISCUSSION AND CONCLUSIONS

Major League Baseball provides a unique setting for investigating the impact of varying strategic organizational goals and levels of utility maximization on team KPIs. Insight into these relationships can aid in understanding differing organizational management strategies and their associated implications. The results of the statistical analyses in Chapter IV, when combined with the theoretical framework of Chapter II, indicate generalizable expectations for MLB organizations when certain strategies are employed.

The purpose of Chapter V is to explore the results of the current study, while applying the context of previous scholars, to help explain the relationships of strategic organizational goals and utility maximization to the operation of an MLB franchise. The breakdown of this chapter begins with an in-depth analysis of individual KPIs based on each factor, followed by a presentation of overall conclusions and implications. Finally, the chapter concludes with suggestions of avenues for future research.

Organizational Factors and Outcomes

Wins

The first KPI dependent variable in the current research was the number of regular-season wins by a team in a given year. According to Késenne (2006) a team that is attempting to maximize their wins in a season would spend a larger portion of their available budget than those attempting to maximize their profits. Under that assertion, the current research used profit

margin to separate win-maximizing teams from their profit-maximizing counterparts. Similarly, teams were also divided by their spending efficiency into low and high utility groups.

Strategic Organizational Goal

Teams that were categorized as part of the WM group averaged almost three more wins per season than teams in the PM group (82.49 to 79.56). As indicated by the univariate ANOVA (Table 4.5), this difference was statistically significant. Therefore, it could be said that a WM strategy, as opposed to a PM strategy, is likely to result in more regular season wins. Analyzing this result from a purely logical standpoint, the finding that a team spending more money with a purpose of winning would, in fact, win more games than a team spending less in order to maximize profits seems to make sense. Previous scholars and their findings corroborate this conclusion, as Clopton (2013) reported that teams with WM spending habits are likely to win more games than their counterparts. Similarly, Késenne (2006) suggested that teams pursuing wins will spend more money to maximize the amount of talent on their roster.

Conversely, the finding that a PM strategy would likely yield less regular season wins than WM also appears to be supported. Teams concerned with profits tend to exhibit tendencies that are conducive to saving money (El-Hodiri & Quirk, 1971). With team payroll being one of the largest and most varied expenses for MLB organizations, some teams will attempt to limit payroll, even at the expense of wins, in order to increase profit and stay within budget (Annala & Winfree, 2011; Késenne, 2010). By limiting expenses, profit margin is increased. However, with less money spent on payroll, it is likely that a team's talent level would be relatively lower, which would probably result in a fewer number of wins.

Utility

In the current study, utility achieved (i.e., high or low), by itself, was not a significant predictor of regular season wins. In other words, the amount spent per win did not have a significant effect on the overall number of games won. Utility achieved is relative to the amount of money spent and the number of wins achieved. Two teams could have the same level of utility, while one of those teams spent less and won less and the other team spent more but won more. An example of this would be the 2019 Minnesota Twins and the 2019 Cincinnati Reds. The Twins had a $121.3 million payroll and won 101 games, while the Reds had an $89.3 million payroll and won 75 games. Both teams spent about $1.2 million per win, putting them in the high utility group of the current study. However, the Twins won 26 more games than the Reds. This scenario illustrates why utility, in terms of wins and payroll, would not necessarily dictate the number of regular season games a team won in that season.

Another possible explanation for the non-significant relationship between utility achieved and regular season wins in the current study can be attributed to cost of players based on track record. Younger players typically cost less than more experienced players due to development and merit of achievements (Hill et al., 2017). As players on a team develop, the team could begin to have success winning with younger, cheaper players (e.g., higher utility). However, with more success and development, those players will then command higher salaries as they are eligible for new contracts. Then, even if they win many games, it will come at a higher cost for the team, and therefore less utility (Dietl et al., 2011). An example could be the 2015 and 2016 Chicago Cubs. Adjusted for inflation to 2019 dollars, the 2015 Cubs won 97 games and spent $125.4 million ($1.3 million per win), while the 2016 Cubs won 103 games and spent $177.9 million ($1.7 million per win). With many of the same players on the roster and a similar win total, the

Cubs still had a significant increase in money spent per win from 2015 to 2016 and consequently moved from the high to low group in utility achieved for the current study.

While utility (payroll per win) alone had no discernable effect on regular season wins, when combined with strategic organizational goal, the current research found a significant relationship. This is evidenced by the significant value reported for the interaction variable (SOG*UA) and the WIN dependent variable in the univariate ANOVA. As mentioned in Chapter IV, the strategic organizational goal of wins paired with the high utility achieved (Win-High) had the highest average wins, while the combination of Profit-High had the lowest average. Win-High teams pursue wins while spending their available budget efficiently, which could be positioning them for both present and future success in winning games (Fort, 2015; Zimbalist, 2003). MLB teams with larger budgets, who are willing to spend large portions of those budgets (i.e., less profit margin), and spend that money efficiently (i.e., high utility) are therefore most likely going to be the most successful teams in terms of winning games. This finding seems to fit well with the data set, as many of the teams with repeated winning success throughout the 2010s appear in the current study categorized as Win-High (e.g., Boston Red Sox, Houston Astros, & Los Angeles Dodgers). Organizations attempting to duplicate the blueprint for positioning a team to have the best chance to win as many games as possible would therefore spend most of, if not all their available budget, leaving them with little to zero profit margin. Concurrently, the team would also want to spend that money as efficiently as possible by strategically selecting players that could best help their team win.

In contrast, Profit-High teams pursue profits while spending their available budget highly efficiently. This profile fits teams with lower budgets who may not always have the luxury of pursuing wins due to financial constraints (Fort & Quirk, 2004; Terrien et al., 2017).

Organizations in the current study who regularly appeared in the Profit-High category (e.g., Baltimore Orioles, Miami Marlins, & Tampa Bay Rays) are teams who, during the 2010s, would seem to fit the lower budget and less games won description.

Revenue

Strategic Organizational Goal

When analyzing the relationship of strategic organizational goal and revenue, the current study attempted to answer the question of whether WM or PM would yield more revenue for an MLB organization. The significant result reported from the univariate ANOVA between SOG and REV indicated that there was a significant difference between the WM group ($296.4 million) and PM group ($281.5 million) in terms of revenue. It is probable that future teams would generate more revenue by implementing a WM strategy versus PM.

The idea that a WM strategy would likely produce more revenue is supported by previous scholars. Fort and Quirk (2004) indicated that differentiation in revenue among teams can at least partially be linked to varying amounts of interest that teams generate. Interest in a team can be generated in multiple ways including acquiring talented and noteworthy players, putting a quality team on the field, and offering an attractive fan experience (Alexander, 2001; Coates & Humphreys, 2007). With more interest, fans are more likely to attend games and spend money, which will then have a positive impact on revenue (Gustafson & Hadley, 2007; Marburger, 1997). As established earlier in Chapter V, teams in the WM group of the current study were likely to win more games than those teams in the PM group. Teams that win more games also generally garner more interest (Alexander, 2001), and therefore would be expected to generate more revenue. An example from the data set of the current study that would likely fit this scenario would be the 2017 and 2018 Seattle Mariners. The 2017 Mariners were categorized in

the profit group of the SOG variable, won 78 games, and generated $299.7 million (adjusted for inflation to 2019 dollars) in revenue. The 2018 Mariners were in the win group, won 89 games, and generated $326.1 million (adjusted for inflation to 2019 dollars) in revenue.

Utility

In relation to revenue, the utility achieved factor (UA) was found to be a non-significant predictor. This indicated that payroll spending efficiency for a team did not influence the amount of revenue generated. In an initial comparison with the work of previous scholars, the non-significant finding would not be expected. Dietl et al. (2011) suggested that those organizations that spend more efficiently are generally more successful. The added success comes as utility is gained from a team getting more value out of their money spent. Higher utility, coupled with avoidance of over-spending, allows money saved to then be allocated toward acquiring additional resources (Vrooman, 1997). Then, theoretically, acquiring more resources for improving the team will make the team more successful and therefore increase ability to generate revenue (Rascher, 1997; Zimbalist, 2003).

While the above explanation provides logical reasoning for why level of utility should impact revenue, it does not account for unequal budgets. A team with an extremely large budget could spend inefficiently and garner low utility, yet still generate far more revenue than a small-budget team with high utility. This circumstance is likely the case in the current study, and the primary cause for the non-significant relationship between the UA and REV variables. An example of this scenario from the current data set would be the big-budget 2019 San Francisco Giants who were categorized as low utility, won 77 games, and generated about $452 million in revenue. Conversely, the small-budget 2019 Oakland Athletics were categorized as high utility, won 97 games, and yet only generated $225 million in revenue.

Attendance

The next dependent variable in the current study was attendance. In the cases of both independent factors (SOG & UA), their relationships with the ATT variable were not significant. This finding indicates that there was no significant difference in attendance, regardless of the level on either factor.

Strategic Organizational Goal

Based on the current findings, it could be said that attendance, represented by the percentage of a home stadium filled, most likely would not vary based on the strategy (WM or PM) employed by a given team. Previous scholars have shown a link between winning and attendance (e.g., Alexander & Kern, 2004; Annala & Winfree, 2011; Davis, 2008). Though a WM team is expected to win more games than a PM team, the effect of winning on attendance will likely only be realized during relatively few games, closer to the end of the season, that might be considered to have higher stakes (Davis, 2008). With such a small percentage of games experiencing an attendance spike, it is likely that the spike is not enough to drastically shift the attendance for the entire season and result in a significant difference between the two opposing strategic organizational goals.

While there is not a variation in attendance, there is conceivably a significant difference in ticket pricing for those attending that has been identified in previous research. As a team wins more games, the demand to attend could rise. Utilizing variable ticket pricing, the team could then charge more for their tickets (Coates & Humphreys, 2007). Teams utilizing a PM strategy, who may not be winning as many games, could intentionally price their tickets lower to get customers to the game. Once at the game, the organization could then make more money off the sale of complementary goods such as concessions and merchandise (Krautmann & Berri, 2007;

Marburger, 1997). Future teams contemplating the choice between WM and PM should realize that there is a high probability that the choice will have no significant influence on attendance. Nevertheless, based on their choice of strategy, the organizations should have ticket pricing strategies ready for implementation to best fit the possible levels of consumer demand to attend games.

Utility

In the current study, utility achieved from payroll spending efficiency was found to not have a significant effect on attendance within a given season. From a logical standpoint, this result seems reasonable: Fans choosing whether to attend a game would likely not make their decision based on how efficiently a team has spent their payroll budget. Furthermore, there is a good chance that the casual fan would not even know this information in the first place to be able to use it as a factor in their attendance decision.

However, the possibility exists that there may be a longitudinal impact of spending efficiency on attendance. Teams that consistently spend in an inefficient manner can risk putting themselves in a precarious future position with an exhausted budget, and players who are declining in talent, but still have long-term deals (Berri, 2006; Hill et al., 2017). Organizations facing these types of scenarios could be subjected to multiple seasons where not much winning occurs. Prolonged periods of losing seasons can then possibly have negative impact on attendance that could be difficult to recover from (Coates & Humphreys, 2007; Davis, 2008). While analysis of the longitudinal nature of the utility and attendance relationship was a bit outside the scope of this study, future teams should still be aware that prolonged periods of payroll spending inefficiency could have an adverse impact on attendance. Shorter stints (one year or less), on the other hand, will likely have no effect.

Wage Dispersion

Intra-team wage dispersion, represented by a Gini coefficient, was another dependent variable in the current research (WD). The first question surrounding this variable was whether the contrasting strategic organizational goals had differing effects on wage dispersion. Similarly, the second question investigated low and high levels of payroll spending efficiency and their relationships with the dependent variable.

Strategic Organizational Goal

Strategic organizational goal, represented by the SOG variable, was found to have a significant relationship with the Gini coefficient of a team. MLB organizations categorized in the win group of the SOG variable had a significantly higher WD (.59) than teams categorized in the profit group (.57). Organizations that adopt a WM strategy are likely to spend a larger amount of money than teams adopting a PM strategy (Clopton, 2013; Késenne, 2006, 2010). According to Krautmann (2009), that willingness to spend more money will often result in larger amounts dedicated to team payroll. With team payroll being roughly divided among the same number of players, the larger payroll budget provides a good chance that the range in pay among players is substantial and more spread out. The larger range then allows for more wage dispersion and is a likely reason WM was significantly higher.

Though the relationship between SOG and WD was considered significant, the difference in dispersion among the profit and win groups was only .02. This disparity could possibly be larger if there were no other factors in play. However, previous scholars showed that baseball teams who are pursuing wins are better off with a smaller Gini coefficient, as that would represent equality in pay, and possibly translate into cohesion, camaraderie, and teamwork on the field (Annala & Winfree, 2011; Frick et al., 2003; Hill et al., 2017). This idea that somewhat

equal pay is more conducive to winning could be encouraging the larger-budget, win-maximizing teams to keep individual player salaries relatively close (smaller Gini coefficient), instead of committing a large amount to just a few players (larger Gini coefficient). Consequently, the WM teams may have a higher average salary than PM teams, but they may also be controlling wage dispersion by paying relatively higher salaries across the board. Future teams considering a WM or PM strategy should be aware that higher wage dispersion may accompany higher spending on payroll, and it may be wise to control the higher dispersion at least somewhat by ensuring salaries are equitable relative to player worth (Hill et al., 2017).

Utility

Utility from payroll spending efficiency (UA) was found to have a non-significant relationship with WD for the current study. Similar to the ATT variable, the non-significant finding could partially be due to the delimitation of treating each team-year observation as independent, and therefore not including any longitudinal intra-team analysis. Previous scholars alluded to a link between spending efficiency and wage dispersion, as teams who spend efficiently are less likely to commit a disproportionally large amount of money to a single player (Berri, 2006; Hasan, 2008). Inefficient spending is something that builds over time, and the consequences may not be fully realized until years later (Fort, 2015; Zimbalist, 2003). The long-term, multi-year nature of MLB contracts, therefore, do not allow what may be an inefficient spending decision to be felt within the same year. In terms of the current research, the non-significant finding shows that teams with low utility in a given year, probably will not see an impact on wage dispersion within that year. However, previous scholars would suggest that low utility, especially if continued, could impact a team's financial situation in future seasons.

Team Experience

Strategic Organizational Goal

In the current study, team experience was defined as the cumulative major league service time of an MLB team roster in a given year. This form of team experience (TE) was found to have a significant relationship with SOG. Teams categorized as having a strategy of wins had a significantly higher average service time at 159.2 years, or about 4 years per player on the 40-man roster. The profit group's average cumulative TE was 153.2 years, or 3.8 years per player. The difference between the two groups indicated that an organization with a WM strategy would likely assemble a team with more MLB service year experience than a team with a PM strategy.

Previous scholars support the notion that WM teams would likely have more cumulative experience than PM teams, as Berri (2006) suggested that players who have been around longer can generally command higher salaries because they are more of a proven commodity. Similarly, rookies and other younger players may be more of a bargain because their talent is unproven, and thus, there is more uncertainty surrounding their expected performance (Berri, 2006; Hill et al., 2017). Teams with a primary goal of winning games are more likely to pay more for players with proven track records (Késenne, 2006, 2010), and therefore, they may be more likely to sign players with more experience. Profit-maximizers are looking to save money to help their bottom line (Zimbalist, 2003). This goal often leads franchises to let more experienced players, who become more expensive due to their past successes, leave their team via free agency. They then often fill those vacant spots with younger, lower-priced talent (Hasan, 2008). A real-life example of this phenomenon that occurred during the timespan of the current study was the acquisition of right fielder Giancarlo Stanton, and his $325 million salary, by the New York Yankees from the Miami Marlins. Stanton, who was considered one of the top players in the game at the time, went

to the Yankees, a notorious large-budget win-seeker, leaving behind the smaller-budget Marlins, who replaced Stanton in right field with a comparatively inexpensive and inexperienced alternative, Brian Anderson (Oswald, 2016).

Utility

There was no significant difference between the low and high utility groups regarding the cumulative experience of an MLB team. The non-significant relationship between payroll spending efficiency (UA) and team experience is somewhat logical. High utility teams could easily have either higher or lower experience levels. To achieve high utility, that team would just need to win enough games relative to the team payroll, regardless of experience (Rascher, 1997). Similarly, a low utility team could also have either high or low experience, as the low utility would be determined by winning fewer games relative to payroll. In the case of the current research, spending efficiency is not a predictor, or factor, in determining team experience. In fact, the opposite could even be argued: Team experience contributes to payroll (Hasan, 2008; Zimbalist, 2003), and therefore, could be an indirect contributor to utility. Assuming this is true, then the non-significant finding for the current research model would be sensible.

Cost of Attendance

Cost of attendance (CA), represented by the FCI, was another dependent variable in the current study. The CA variable was found to have non-significant relationships with both independent factor variables (SOG & UA). Therefore, it could be said that the findings indicate the cost to attend an MLB game does not vary based on strategic organizational goal, or level of payroll utility. Previous scholars, when addressing cost of attendance, have mostly focused on ticket pricing. Rascher et al. (2007) suggested that the use of variable ticket pricing can yield more revenue for those teams looking to maximize profits. Furthermore, the use of dynamic

ticket pricing can allow an organization to take a demand-based focus and fluctuate ticket prices based on changes in market factors (Shapiro & Drayer, 2014). Both variable and dynamic pricing strategies could be useful to teams taking a WM approach, as teams winning more games could have a higher demand and thus be able to command a higher price for their tickets. Similarly, organizations taking a PM approach could also use these strategies to increase their bottom line, by exploiting high-demand factors such as rivalry games and when popular opponents come to play their team (Rascher et al., 2007; Shapiro & Drayer, 2014).

In terms of the current study, it could be plausible that teams with differing organizational goals could dictate demand and ticket pricing. However, the non-significant relationship between the independent variables and CA would imply otherwise. A possible explanation is the nature of the CA variable. First, ticket prices, which can fluctuate, only constitute a fraction of cost of attendance. Other items that contribute to attendance cost, such as merchandise, concessions, and parking, are largely fixed within a season (Coates & Humphreys, 2007). As variability only occurs in a portion of the cost of attendance (i.e., ticket pricing), it is possible that the difference in that variability by either of the two factors in the current study does not have a substantial enough effect size to detect a difference in the overall CA variable.

Second, FCI is an average cost for an entire season. By taking an average, any variation in CA from the effects of differing strategies throughout the progression of a season, could be indistinguishable due to smoothing (Simonoff, 1996). In other words, cost of attendance differences may exist based on strategic organizational goal, or utility achieved. Those differences just may not be perceivable in the current research model due to the flatter nature of a mean versus an incremental time series graph.

Finally, other factors, such as market size, could be larger determinants of cost of attendance than the two independent variables of interest (SOG & UA). This is illustrated by the significant *p*-value for the relationship between the covariate (MP) and the CA variable. The partial eta-squared value of .15 indicates a large proportion of variability in cost of attendance to be associated with market population (Sweet & Grace-Martin, 2012). Teams in larger markets tend to have a higher cost of attendance than those teams in smaller markets, which would be aligned with cost of living. An example from the data set of the current study is the 2019 New York Yankees and the 2019 Kansas City Royals. The large-market Yankees had a market population of about 9.4 million and cost of attendance was $293.96. The small-market Royals had a market population of about 1.7 million and a cost of attendance of $175.68.

Franchise Value

The last dependent variable in the current study, FV, represented the change in franchise value over a given season. The idea behind this variable was that the usage of percentage change in franchise value captured the effect of varying levels of the independent factors, while also controlling for the large variation of actual valuations amongst different teams. An example of the large variation from the current data set is illustrated by the 2019 Los Angeles Dodgers ($3.3 billion) who were worth more than three times the 2019 Miami Marlins ($1.0 billion).

Strategic Organizational Goal

In terms of the SOG variable, there was a significant relationship found with FV. Organizations who were categorized as WM for a particular season experienced an average gain of 17% from the beginning of that season to the next. Those categorized as PM also generally experienced growth, however at a lesser average rate of 13%. Consequently, it could be stated that teams who were categorized as having a strategic organizational goal of wins most likely

experienced a larger growth in franchise value than those categorized as pursuing profits. The findings of the current study would seem to correspond with the work of previous scholars: Alexander and Kern (2004) reported a strong positive relationship between winning and franchise values in professional sports. In application to the current research, it was established above that WM organizations tend to win more games than their PM counterparts, and thus it would stand to reason that those WM teams would also see a larger increase in franchise value. Future MLB organizations looking to increase franchise value could focus on winning games, which may be aided by the implementation of a WM strategy.

Utility

Payroll utility (UA), by itself, was found to have a non-significant relationship with FV. Teams categorized as high utility for spending less per win had no discernable difference in franchise value than those categorized as low utility. A possible reason for the non-significance is that spending efficiency is only a small supplemental factor to other major determinants of franchise value (Alexander & Kern, 2004). Evidence for that conjecture comes from when the interaction variable (SOG*UA) was found to have a significant relationship with FV. The combination of Win-Low had the highest percentage increase of FV (21%), followed by Win-High and Profit-High (15%), and finally Profit-Low (11%).

The combination of Profit-Low resulting in the lowest average increase in FV is likely due to two components. First, organizations in the profit category will likely lose more games, which would generally result in a lower franchise valuation (Alexander & Kern, 2004; Scelles et al., 2016). Second, spending inefficiency resulting in low utility, especially in the long term, could be a sign of poor ownership and management, which also may have a negative impact on franchise value (Scelles et al., 2016).

Following the same logic as above, we would assume that the combination of Win-High would result in the highest average increase of FV. In the reality of the current study, this was not the case. Instead, the Win-Low combination contained the teams with the largest average increase. The logic of teams in the win category likely winning more games, and therefore, experiencing a larger boost to franchise value remains constant (Alexander & Kern, 2004; Scelles et al., 2016). The difference, however, is potentially a product of the elements that constitute low utility. Utility is a byproduct of payroll budget and team wins. As the budget of a team increases, the number of wins also need to increase to maintain a high utility. Teams with a very large budget must then win a substantial number of games to achieve high utility, yet at a certain point, there is likely a diminishing return on budget spent versus games won (Fort & Quirk, 2004; Késenne, 2006). Therefore, those large budget teams may have a more difficult time achieving high utility, and thus may fall into the low category. Budget size is then a key, positive contributor to franchise value (Scelles et al., 2016). For the current research, this would then indicate that larger budget teams, who consequently achieve low utility, and employ a WM strategy are likely to see the largest increase in franchise value over a given season. An example from the current data set is the 2012 New York Yankees who won 95 games, achieved low utility by spending approximately $2.4 million per win, and saw their franchise value increase 24.3% from the beginning of 2012 to the beginning of 2013.

Market Population

The research model for the current study incorporated one covariate, MP, which represented the population of the metropolitan area where a team was located. Note that, as explained in Chapter III, metro areas containing two MLB teams had their populations divided in half (Mills et al., 2016). As foreshadowed by the work of previous scholars, the current study

found MP to be a significant predictor of almost all the dependent variables, and therefore, the inclusion as a covariate was merited.

In relation to WIN, WD, and TE, the MP variable resulted in significant positive relationships with each, which indicated that teams in larger metro areas were more likely to win more games, have larger intra-team payroll dispersion, and have more team experience. The positive relationships with those three KPIs can likely be attributed to the same factor: Larger market teams typically have bigger budgets and more resources (Alexander & Kern, 2004). The larger budgets and more resources then allow teams a better opportunity to acquire experienced talent, offer a wider range of salaries, and consequently, win more games (Annala & Winfree, 2011; Hill et al., 2017).

The relationships of MP with REV and ATT were also significant and positive, as larger market teams had a higher average revenue and attendance. MLB organizations in these larger populated areas generally have a greater revenue generation potential due to the sheer number of people they can reach through marketing and media (Mills et al., 2016). Similarly, there are also more potential consumers in those larger markets to continually attend games, which should theoretically make it easier to keep the stadium filled for home games (Davis, 2008).

Finally, the last significant positive relationship containing the covariate was with CA. Larger market teams generally had a higher cost of attendance (per the FCI) than their small market counterparts. The FCI is positively correlated with the cost of living, and larger metropolitan areas normally have a higher cost of living (Coates & Humphreys, 2007). Therefore, the cost to attend an MLB baseball game is stereotypically higher in larger markets.

The only non-significant relationship for the covariate, MP, and a dependent variable was with FV. This is not to say that metropolitan population does not play a role in overall franchise

value. For the current study, FV represented the growth from one year to the next. Therefore, the current finding only indicates that the size of the market did not have any influence on the percentage growth in franchise valuation for an organization over the span of a season. Conversely, Alexander and Kern (2004) reported market size as a significant determinant of overall franchise value, with those teams in larger markets regularly receiving a higher valuation.

Multivariate Research Model

A portion of statistical analysis used in the current research (i.e., MANCOVA) analyzed the effect of the independent factors, after controlling for the covariate, on the group of dependent variable KPIs. In other words, the analysis answered the question of whether the group of dependent variables, as one entity, differed based on the established level of SOG and UA. In the multivariate analysis, SOG and the interaction variable (SOG*UA) were found to be significant, while UA was non-significant.

Strategic Organizational Goal

From a multivariate perspective, the strategic goal of an organization (i.e., profit & win) had a significant effect on the KPIs of MLB organizations that were included in the current study. In terms of those KPIs, a team categorized as a profit-seeker would likely have distinct characteristics compared to a team categorized as pursuing wins. The overall finding of multivariate significance would be expected given the variation in each of the individual dependent variable KPIs reported from the univariate ANOVAs that were outlined earlier in this chapter.

Previous scholars investigated WM and PM from a theoretical perspective and empirically on a macro level. As described in Chapter II, the impact of WM versus PM has been studied in conjunction with league-level elements including ticket-pricing (Krautmann & Berri,

2007; Marburger, 1997), social welfare (Dietl et al., 2009), competitive balance (El-Hodiri & Quirk, 1971; Fort & Quirk, 2004), and profit versus win orientation of varying sports and countries (Késenne, 2006; Késenne & Pauwels, 2006). The findings of the current research supplement the existing body of literature, as they add empirical evidence concerning ramifications on the micro level (i.e., individual teams) of differing organizational strategies.

Utility

Utility from payroll spending efficiency (UA) was non-significant in the multivariate analysis. Based on the univariate ANOVAs, where UA did not have a significant relationship with any of the KPIs, the multivariate non-significance was expected. However, UA, when combined with SOG to form the interaction variable (SOG*UA), was found to be significant in a multivariate sense. Therefore, the dependent variables, as a singular entity, varied based on each of the four combinations of the two independent factors. In the MANCOVA results for SOG*UA, the *F*-statistic for Hotelling's trace and Roy's largest root were virtually equivalent at .05. The equality of the two values would insinuate that the multivariate significant effect is primarily due to only a few of the dependent variables (Olson, 1974). Based on the univariate ANOVAs, that assertion can be confirmed, as only WIN and FV had a significant relationship with the interaction variable.

Generalizability

The generalizability of these findings to other sports is limited. While the theoretical concepts of PM, WM, and UM apply in these other contexts, the rules by which other professional sports operate differ dramatically. Salary caps and salary floors, that are present in leagues such as the NBA and NFL, limit an organization's ability to truly pursue their desired strategy, especially a maximization strategy that would put the team on an extreme end of the

spending spectrum. Due to the relatively lenient payroll rules of MLB, desired strategies can be enacted to a higher degree, and thus relationship and effects related to those strategies are more evident.

Among MLB, the findings can be a bit more generalized. The study did encompass a ten-year period and included all MLB teams within that timeframe. Future teams should expect similar effects on their KPIs according to the combination of decisions that reflect their strategic organizational plans. The caveat to this generalizability would be a significant shift in MLB economics. An example would be the 2020 season, which was severely impacted by the COVID-19 Pandemic. With limited attendance and changes in consumption, business operations of MLB teams were radically altered, and the pre-pandemic results are no longer generalizable amongst MLB teams. It remains to be seen if operations will recover to pre-pandemic status, which would again validate inter-MLB generalizability.

Finally, the findings of this research are generalizable in the sense that they support the theoretical frameworks of the PM, WM, and UM constructs. Despite the current research focusing on the relatively micro, individual team level, the results largely corroborated the macro, league-level findings of previous scholars. Through the addition of a new context to the body of research, generalizability is therefore increased.

Limitations

While the current research comprised a thorough study of organizational management and effectiveness, it was not without limitations. The first limitation was the inability to be absolutely sure of the actual organizational goal (i.e., profit or wins) of an MLB team. Without having access to strategic planning of ownership and senior management, an educated guess could only be made of the actual goal in each team-year observation. In order to determine the

strategic organizational goal, assumptions were made based upon profit margin, which is considered a strong indicator of win-maximizing or profit-maximizing behavior (Clopton, 2013; Késenne, 2006; Rascher, 1997).

The second limitation involved the time-constrained attribute of the team-year observations and its impact on the findings surrounding utility. Each team-year observation only involved the span of one season, with no real link to the prior or subsequent seasons. Within the frame of the current study, UA (i.e., payroll utility) was found to have a largely immaterial effect on the dependent variable KPIs. However, the impact of inefficient spending is something that builds over time (Fort, 2015; Zimbalist, 2003). Consistent, and prolonged, inefficient spending has the potential to cause many future issues with an MLB team's KPIs (Coates & Humphreys, 2007; Davis, 2008). As team-year observations only covered a single season, the longitudinal effect of UA and SOG was not able to be investigated.

Finally, in the collection and interpretation of the data, the choice was made to treat each team-year observation within the same franchise as an independent subject. The choice was based on examples from previous scholars and the notion that there is often substantial change from one year to the next within a franchise (e.g., roster turnover & management changes), and consequently each team-year should be viewed independently (Hill et al., 2017; Mondello & Maxcy, 2009). However, another possibility was to treat the research as panel data (Annala & Winfree, 2011), which could have allowed for within-team analysis and overall franchise comparisons.

Future Research

This study examined the varying organizational strategies of MLB teams and their resulting effects on KPIs. While research related to win-maximization and profit-maximization

strategies is far from novel, little research has directly assessed their impact on the individual team level. This section will outline three possibilities for future research to build upon the findings.

First, the current study demonstrated a need for a longitudinal element of analysis, especially with spending efficiency. Within the window of a single season, little difference was observed from various levels of utility. However, there is at least some indication from previous research that prolonged periods (i.e., multiple seasons) of spending efficiency, or inefficiency, could have a more dramatic impact on KPIs. Understanding of the longitudinal nature of this relationship could be important to budget management, pursuit of free agents, and structuring on long-term contracts.

Second, an element of player acquisition and roster construction could be added to the research model. The ways in which teams acquire talent for their MLB roster can range from drafting and developing their own homegrown players through their minor league system to signing big-name players through free agency. The financial implications also vary dramatically based on how organizations opt to build their team. These varying strategies could be linked to win-maximizing or profit-maximizing behavior. Furthermore, roster construction has the potential to be another independent variable, as it could feasibly be linked to many of the MLB team KPIs.

Lastly, a shift in methodological approach to profit-maximization, win-maximization, and/or utility-maximization research could provide some interesting findings from a new perspective. The majority of maximization research is quantitative due to its basis in economics and finance, as numbers and statistics seem to be a natural fit to describe phenomena in that realm. However, taking a qualitative, and possibly case study approach, would allow for thick

and rich description of specific situations, while also allowing for new framing of research questions that could elicit deeper responses (Morse & McEvoy, 2014). Applying this methodology to the current research, questions could be asked such as: How do teams decide on their strategic organizational goal? What roles do KPIs play in the management of MLB organizations? Such questions would result in new findings to supplement the abundance of quantitative research that already exists.

Conclusion

The strategic organizational decisions that are made by MLB teams play elemental roles in the determination of measurable team outcomes (i.e., KPIs). The importance of these organizational strategies has created a distinct line of research centered on the effects of these varying decisions. To date, the majority of sport management studies in this area have analyzed management strategies on an overall league, as the individual strategies of each team can be somewhat difficult to identify. The current study acted as one of the first attempts to move analysis to the more specific, individual team-level and offered the beginnings of a methodology to determine profit- or win-maximization tendencies relative to other organizations within a league. By employing empirical research in the more specific context, this research sought to provide insight into what a team can expect based on their goals and spending decisions.

MANCOVA analysis yielded results that implied a win-maximizing strategy, relative to profit-maximizing, generally brought about more regular season wins and revenue. Furthermore, the roster of a win-maximizing team likely had more dispersion of wages and cumulative team experience. Finally, these teams would also be expected to experience a larger percentage increase in franchise value over the duration of the season. Profit-maximizing teams tended to spend a relatively less amount of their available resources. In order to stay competitive, these PM

teams typically relied on spending efficiency to stay competitive, while also saving money to help their bottom line.

Under similar economic conditions, the results provide expectations for future MLB teams who may be consider varying strategies. Teams with a primary goal of wins can expect a relative increase in many of their organizational KPIs, while also experiencing an increase in associated expenses. Conversely, MLB organizations who pursue profits, would likely decrease expenses, but could also experience decreases in other related KPIs. A better understanding of the nature of organizational management can be invaluable to current and future sport managers. Furthermore, the ever-changing economic landscape, coupled with the complex nature of sport business operations, offers many avenues for future research in the area.

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