



저작자표시-비영리-변경금지 2.0 대한민국

이용자는 아래의 조건을 따르는 경우에 한하여 자유롭게

- 이 저작물을 복제, 배포, 전송, 전시, 공연 및 방송할 수 있습니다.

다음과 같은 조건을 따라야 합니다:



저작자표시. 귀하는 원저작자를 표시하여야 합니다.



비영리. 귀하는 이 저작물을 영리 목적으로 이용할 수 없습니다.



변경금지. 귀하는 이 저작물을 개작, 변형 또는 가공할 수 없습니다.

- 귀하는, 이 저작물의 재이용이나 배포의 경우, 이 저작물에 적용된 이용허락조건을 명확하게 나타내어야 합니다.
- 저작권자로부터 별도의 허가를 받으면 이러한 조건들은 적용되지 않습니다.

저작권법에 따른 이용자의 권리는 위의 내용에 의하여 영향을 받지 않습니다.

이것은 [이용허락규약\(Legal Code\)](#)을 이해하기 쉽게 요약한 것입니다.

[Disclaimer](#)

Ph.D. Dissertation of Sport Management

**Effects of Multicultural Team
Composition on Professional Sports
Team Outcome**

**팀 구성의 문화 다양성이 프로스포츠 팀
시즌 결과에 미치는 효과**

February 2021

서울대학교 대학원

체육교육과 글로벌스포츠매니지먼트

성 호 준

Effects of Multicultural Team Composition on Professional Sports Team Outcome

지도교수 강 준 호

Submitting a Ph.D. Dissertation of Philosophy
Sport Management

December 2020

서울대학교 대학원

체육교육과 글로벌스포츠매니지먼트

성 호 준

Confirming the Ph.D. Dissertation by Hojun Sung

December 2020

위원장 : _____ 임 충 훈



부위원장 : _____ 이 영 훈



위원 : _____ 권 형 일



위원 : _____ 김 유 점



위원 : _____ 강 준 호



스포츠경영학박사학위논문

**Effects of Multicultural Team
Composition on Professional Sports
Team Outcome**

**팀 구성의 문화 다양성이 프로스포츠 팀
시즌 결과에 미치는 효과**

2021년 2월

서울대학교 대학원

체육교육과 글로벌스포츠매니지먼트

성 호 준

Abstract

Professional sports team outcome in any given season is a function of the collective skills of the team's players, the abilities of the team's coaches to effectively assemble and direct the players, and the degree of team diversity and cultural distance. Team diversity may affect both performance and demand based on past findings. Although Major League Baseball (MLB) has established methods to engage individuals from diverse backgrounds, team rosters and fan bases remain overwhelmingly white. The effects of multicultural team diversity on team performance were assessed in MLB teams during the regular seasons from 2013 to 2019. This empirical study evaluated cultural diversity, cultural distance, ethnicity, and collectivism. Subsequently, the current empirical study examined how matching market population demographics and team demographics in terms of race affects fan demand. After controlling for team ability, national diversity was found to be negatively associated with team performance, with MLB teams having a higher proportion of American players performing better than teams with lower proportions of American players. These results indicate that teams with players from the same country perform better than teams with players from several countries. However, ethnicity was found to be positively associated with team performance considering the distinct U.S. culture. Cultural distance from the United States of America and collectivism were also negatively associated with team performance due to the high tendency of individualism in American culture. Regarding the demand effects, the current study found that the matching of team and market population demographics was positively significant. In addition, the

current study used the number of MLB player's Instagram and Twitter followers for the first time, which were positively associated with attendance. Practical implications, future directions for researchers, and conclusions are discussed.

Keywords : *Team composition, Cultural diversity, Major League Baseball, Team performance, Fan demand*

Student Number : 2013-31108

Contents

Abstract	i
Contents	iii
List of Figures	v
List of Tables	vi
List of Appendices	vii

Introduction

Study Background	1
Problem Statement.....	7
Research Purpose.....	10
Research Questions	11
Definition of Terms.....	12
Summary.....	13

Literature Review

Past and Recent Aspects of Global Marketplace	15
Diversity Outreach in MLB	18
Multicultural Team Composition in Sports	20
Diversity and Team Performance	23
Cultural Congruence and Demand	28

Hypothesis Development

Cultural Heterogeneity and Team Performance	32
National and Ethnic Diversity	32
Cultural Distance	35
Collectivism/Individualism	37
Cultural Congruence between Team and Market	38

Methods	
Sample and Descriptive Statistics.....	40
Overview of Analyses.....	46
Data and Empirical Specification.....	55
Results	
Team Diversity on Performance.....	63
Cultural Distance and Degree of Interdependence.....	66
Cultural Congruence between Team and Market.....	67
Robustness Check.....	70
Discussion and Conclusions	
Discussion.....	73
Limitations.....	77
Future Directions.....	79
Conclusions.....	81
References.....	84
Appendices.....	99
Abstract in Korean.....	107
Acknowledgments.....	110

List of Figures

Figure 1. Number of American and International Players in NL	43
Figure 2. Number of American and International Players in AL	43
Figure 3. Racial Distribution of NL Teams in 2013-2019.....	44
Figure 4. Racial Distribution of AL Teams in 2013-2019	44
Figure 5. Instagram Followers of NL Players by Team in 2019-2020 ..	53
Figure 6. Instagram Followers of AL Players by Team in 2019-2020 ..	53
Figure 7. Twitter Followers of NL Players by Team in 2019-2020.....	54
Figure 8. Twitter Followers of AL Players by Team in 2019-2020.....	54

List of Tables

Table 1. Variable Descriptions	45
Table 2. Calculation of Cultural Heterogeneity of LA Dodgers.....	50
Table 3. Calculation of Cultural Distance for Washington Nationals....	51
Table 4. Descriptive Statistics	60
Table 5. Matrix of Correlations for Cultural Heterogeneity Variables ..	61
Table 6. Matrix of Correlations for Cultural Congruence Variables	62
Table 7. OLS regressions of Cultural Diversity	65
Table 8. OLS regressions of Race Matching on Attendance	69
Table 9. OLS regressions of Cultural Diversity using Year Dummy	71
Table 10. Race Matching with Win Percent from the Previous Year	72

List of Appendices

Appendix A: Number of 30 MLB Team Full Rosters	99
Appendix B: Number of Countries for the MLB Teams	100
Appendix C: Foreign-Born Players, 1950, 1970, 2002, 2019	102
Appendix D: Metropolitan Statistical Area Matching List.....	103
Appendix E: Number of Professional Sports Teams by League	104
Appendix F: Ethnic Makeup of Sports Leagues TV Audiences.....	105
Appendix G: MLB Fields/Parks/Stadiums	106

Introduction

Study Background

“Baseball is a white man’s sport,” the Baltimore Orioles All-Star outfielder Adam Jones, who is an African American, told USA Today Sports (2016), regarding the growing movement of National Anthem protests and Major League Baseball (MLB)’s lack of Kaepernick protest. He stated the higher risk of baseball players kneeling for national anthem because baseball do not need black player as much as American football or basketball. This interview shows that there is still lack of diversity issue although it looks like baseball has become far more diverse. Not only racial diversity, but national diversity shows an increase with more than 33 percent of MLB players born outside of the United States of America (USA) from 20 countries in 2019. MLB have a philosophy to promote diversity to enhance their businesses and brand around the world. Currently, they feature players whose backgrounds differ tremendously.

In almost every industry, the technological revolution and increasing globalization have been major parts of firms' ability to maintain their competitiveness (Hitt, Keats, & Demarie, 1998). Team heterogeneity within a micro-organizational context is important because of understanding the operating process and structural conditions (Earley & Mosakowski, 2000). Since the mid-1980s, diversity and inclusion have been the core theme of contemporary times.

Group endeavors, including team sports, attract individuals from a variety of backgrounds and countries. In the international business world, organizations try to hire the best employees to increase their revenue and performance, with outperforming other, similar organizations being a central goal of strategic management. Firms frequently and actively seek cross-border business opportunities and become multinational (Johnson, Choi, Kim, Pitts, & Zhang, 2019). Relatively little is known, however, about the effects of culture and language on firm output (Kahane, Longley, & Simmons, 2013). Similar to other contemporary corporations, sports teams have sought to develop cultural diversity.

“Sports has not always had such an international flavor. Sports first spread across international borders through imperialistic efforts. As countries such as Great Britain colonized various areas throughout the world, sport was used to impose the conquerors culture on the colonized land” (Masteralexis, Barr, & Hums, 2011, p.210). One of the reasons why the sport industry has entered the global marketplace is the competitive nature of leagues and organizations that employ players from different countries of the world in order to have the best talents they can find. With global sport events like the Fédération Internationale de Football Association (FIFA) World Cup of soccer or the Olympic Games capturing worldwide audiences, sports events have become highly sought-after commodities for the globalization of business (Zhang et al., 2018). The international mega sport events such as Olympics and World Cup were the very start of the sport industry expanding across borders and gaining enormous attention from the international society. Similarly, many professional sports became popular and prevalent within the country of origin of a sport while gaining a global attention as today.

Today in sport business, it is common to hear that more teams, brands, venues

are constantly expanding. The sports market not only involves attendance at spectator sporting events, but activities of following spectator sporting events through different types of media became a norm. So the decision making of where and how to spend has become a key question. Many global studies over the past two centuries have focused on sport, with globalization increasing interest in international research on diversity (Lattimer, 1998), partly because the emergence of 'sports studies' has become a thriving, differentiated zone of multi-disciplinary academic study. Studies performed to date have emphasized that the sports business world does not have sufficient unified, consistent data, sources of data, and analytic methods to make effective decisions. The sports industry is more transparent than other types of industries because it provides complete data on the input mixture (Kahn, 2000). The numerous prior empirical studies in the field of sports, especially baseball, are due to the abundance of quantitative data. On Opening Day of the 2019 MLB regular season, 251 (28.5%) players were from 20 different countries outside of the United States. However, the popularity of baseball in the United States has decreased over time, as a Gallup poll in 2019 found that the percentage of people who regarded baseball as their favorite sport was lower than during any previous year.

Within sports, soccer is known as the 'global game' or the world's most popular sport. Since the late nineteenth century, its international diffusion started by the British. Soccer enjoys the most number of fans in almost all regions of the world and plays an important part of the global economy illuminating domains of globalization sociologically and dynamically for the last decades (Royuela & Gasquez, 2019). Today, the English Premier League (EPL) displays the global soccer popularity by recording an average number of 12 million viewers per each

match. EPL matches generated over \$5 billion on its international TV deals, not including its \$8 billion domestic TV deals for 2016-2019 seasons, from broadcasting for 80 stations in 212 territories globally in a regular season (Johnson et al. 2019). Due to the large number of global participants, historical TV viewership for soccer has grown rapidly. Now, it also holds its place among the richest sports in the world today.

The international growth of baseball showed that it could emulate the global reach of soccer. Unlike soccer and others, baseball in the USA developed outside elite schools. Therefore, it was fully commercialized and professionalized much earlier than soccer instead. From 1938 to 2011, Baseball World Cup was an official annual event, but it was nowhere close to the success of FIFA World Cup. Even rugby, a sport that is not as popular as baseball nor anywhere near the global reach of soccer, hosts a successful World Cup every four years. These examples show that baseball still has more room to grow by promoting the popularity of the sport internationally. On a global scale, the game of baseball is being played in over 109 countries under 5 affiliated associations with the International Baseball Federation (IBAF) that cover the entire inhabited globe, with the Pan Americana region being the Major League Baseball (MLB)'s number one labor supplier (Klein, 2006). Eventually, the diffusion of baseball has been prevalent around the world.

There has been a transnational world of baseball for almost a century and a half. From the 1860s, and over time this has linked several circuits of the game within the USA (including MLB, the Negro Leagues, and various minor league systems), across the Caribbean and Central America (especially the Cuban, Dominican Republic and Mexican leagues), and through East Asia (especially Japan, Taiwan

and South Korea). According to the Sport Business Consulting Global Report, the MLB is the fourth-most valuable sports property globally, with nearly \$3.6 billion of media-rights revenues in 2019. Japan and Korea are the countries where their baseball league is extremely popular. The Nippon Professional Baseball League (NPB) in Japan and the Korea Baseball Organization (KBO) are the second and third largest professional baseball leagues in the world in terms of revenue-generating ability, after MLB.

Traditionally, only top baseball talent has flowed from Japan and South Korea to MLB when KBO and NPB only signed players who are not top prospects from the USA. However, that trend may be changing as more ex-major or minor league players sign to play in KBO and NPB because they could make significantly more money overseas. The fundamental difference between MLB and NPB/KBO is in the governance system, which causes a difference in their objectives. Hence, MLB tries to maximize profits as much as possible and share them among its member teams, whereas NPB/KBO emphasize the importance of winning in order to satisfy the parent company (brand image) for their financial support in return. In the USA, MLB is the only professional sport that is a legal monopoly by act of Congress. However, basketball recently eclipsed baseball for the first time in more than a decade, and the percentage of people who preferred baseball was the lowest in a Gallup poll history.

Team sports is a big business, and the financial success of sports team depends heavily on their ability to win. For modern professional sport franchises, strategic management off the field is as important as that of on the field because they spend

too much money on them.^① In business and finance literature, both risk management and investment efficiency are traditional topics. Unpredictable fluctuations in the market and institutional uncertainties associated with regulation changes are some examples that cause business uncertainty (Gluch & Baumann, 2004). In other words, there are two categories of firm risks and business uncertainty: internal risk and external risk. The internal risk comes from the firm-specific characteristics, and external risk starts from the external shocks such as the uncertainty of exchange rate, interest rate, and GDP growth. One of the solutions for reducing uncertainty is to create a portfolio with variation. Portfolio optimization is diversification, which is the measurement and control of portfolio risk and expected return (Speidell, Miller, & Ullman, 1989). Firms and investors use diversification strategy in order to reduce uncertainty because of the desire to increase resources' efficiency. Considering each professional athletes as business units of a sport team, this study has assumed that strategic multicultural team composition would apply a leverage for professional sport teams' uncertainty and unpredictability.

^① *In 2005, Milano & Chelladurai (2011) suggest the estimated size of Gross Domestic Sports Product (GDPS) of the United States of America – conservative \$168.469 billion, moderate estimate of \$189.338 billion, and the liberal estimate of \$207.503 billion. The size of GDPS is similar to that of Food services and drinking places (\$225.8 billion) and Manufacturing-Chemical products (\$199.8 billion). Especially, because of increasing size of sports industry, sports clubs spend too much money to improve their own performance. For example, the sum of 2018 MLB clubs' payroll is \$41.4 billion to pay their players. \$41.4 billion is 1.37 times the sum of 2011 MLB clubs' payroll (\$30.3 billion).*

Problem Statement

"It's the most boring game I've ever been to, and it's every night," says one scout who has been in the game for 50 years (Miller, 2018). "You know exactly what's going to happen before it starts." MLB ended its 2019 regular season with a total attendance of 68.49 million, down 1.7 percent from a year ago and the league's sixth decline at the gate in the last seven seasons (Fisher, 2019). Many people are aware that the overall attendance in MLB stadiums has been in decline since 2013 despite some teams that recorded higher total attendance such as the 2017 Dodgers with the highest total attendance (3,765,856) since 2014 (Baseball-reference). Other than the decreasing interest in baseball, people are no longer going to major league games due to the rising ticket prices after a recession, extreme season of weather, individual market support while there are many options to watch television since the explosion of streaming services. In fact, there are more games per season than the teams in any of the other major professional sports leagues in the USA, providing baseball fans with a large selection of games and frequently resulting in large fluctuations in attendance. MLB executives believe that external changes in how well all live sports are being attended, along with a change in the secondary market are the biggest reasons (Brown, 2019).

The National Basketball Association (NBA) Commissioner Adam Silver once said "With all due respect to the other U.S. based sports, there are really two global sports: There's soccer and there's basketball." As the NBA Commissioner stated, there has been a paradigm shift in the popularity order of North American professional sports. Basketball surpassed baseball for the first time in more than a decade followed by some fluctuations between the MLB and NBA during the 90s

and the early new 2000s. In addition, baseball's popularity has declined steadily since surpassed by American football in the mid-1960s (Gallup, 2018). The sport is experiencing its lowest levels of support since 1937 as the sport media in the USA have raised alarms in recent years over a perceived decline in the popularity. In a recent Gallup poll from 2018, baseball is the third favorite sport to watch, favored by 9%, followed by football (37%) and basketball (11%). The record of 9% who mention baseball as their favorite sport to watch is the lowest percentage recorded since Gallup first asked the question in 1937. A past study found that MLB receives far less media exposure than NFL and NBA (Fortunato & Williams, 2010), which can make baseball less attractive for minorities to become involved with the game.

“Major League Baseball's efforts at globalization are not only provident for the future of the sport but also critical to its prosperity. The ability of the game to rely upon its domestic base of fans and players has receded to the point where globalizing is imperative.” Loss of interest from the African American community, both as players and fans, is regarded as the biggest marketing failure and cultural oversight of MLB to date (Klein, 2006). One major challenge is the need to attract African Americans to attend MLB games (Fortunato & Williams, 2014), which is hampered by African-Americans constituting only 7.8% of current players (Anderson & Martin, 2019). In 1981, 18.7% of MLB players were African-American, which was the highest number of participation since Jackie Robinson broke baseball's color barrier in 1947. But, the percentage has been decreasing ever since and eventually dropped to 6.7% in 2016. The racial and ethnic composition of a team's players is among the many factors that African-Americans take into consideration when deciding to attend sporting events (Fortunado & Williams, 2014). While the number of African-Americans has decreased, the number of

Latino players began to increase and replaced African American players as the second most dominant race/ethnicity in the league by 1996.

The MLB attracts more interest from older age groups, with Nielsen Scarborough research showing 32 percent of people ages 50-69 saying that they are “very” or “somewhat” interested in baseball. Timing is everything as people can watch EPL before the NFL starts on Sunday on the NBC Sports Network and NBC Network (the former home of MLB games of the week for 40 years). Warning alarms have sounded across the board about attendance (down about 1,500 fans per game of last year’s total), polling that shows fewer than 10% of Americans call baseball their favorite sport. In addition, a league-wide batting average of .247 (lowest since 1968) has made the game less oriented toward balls in play. Despite all the problematic issues surrounding the future prosperity of the sport, many including the MLB Commissioner’s Office is convinced that they are actually becoming global and all is well with economic success when they need to grow abroad in developed nations. Thus, the league or the commissioner has to expand the sport more innovatively and aggressively; a move, which requires a globalized view of baseball (Martinez & Mukharji, 2013).

In general, there is a lack of literature examining the effects of culture and language on firm output mainly due to data limitations (Kahane, Longley, & Simmons, 2013). Modern industries with technological revolution and globalization emphasize the importance of dealing with uncertainty & unpredictability for their success, which requires dynamism to be successful (Hitt, Keats, & DeMarie, 1998). But, it is not clear how the level of diversification affects a firm’s performance advantage. A significant resource-performance relationship exists across many organizations and numerous published studies (Crook, Ketchen,

Combs, & Todd, 2008) because resources are prophetic of performance to build blocks of competitive advantage (Wernerfelt, 1984). However, scholars have proposed increasingly complex frameworks in order to explain how resources generate competitive advantages (Amit & Shoemaker, 1993; Barney, 2001; Dierickx & Cool, 1989; Teece, Pisano, & Shuen, 1997; Trigeorgis, 1996). Especially, human resource management is a critical success factor for every organization and also one of the most challenging and difficult tasks (Bloom et al., 2012). Thus, the author is particularly interested in workforce characteristics rather than other management practice categories. This study considers management practices and their effects on productivity by analyzing panel data for MLB teams.

Research Purpose

Although MLB is generally regarded as the best baseball league in the world, we need to remember that it is not the governing body of baseball. The franchise clubs strive for their commercial interests, not necessarily the good of the game globally. One of the best options is for the MLB to support the World Baseball Softball Confederation (WBSC) promoting international tournaments in which countries can actually compete as a national team. Similar to the popularity of FIFA World Cup, it would give global fans a reason to invest in the match outcomes and be more attracted to baseball. Hence, MLB needs to recognize the need of global prosperity because there are many other countries playing the sport baseball but without needed exposure.

One reason why the current study focused on MLB is because this league has established efforts for engaging individuals from diverse communities, but is still

failing despite the increased number of Latino players and fans. In 1989, MLB implemented programs such as Reviving Baseball in Inner Cities (BRI) and Urban Youth Academy (UYA) to help diversify their team roster and fan base. Despite these efforts, however, team rosters and fan bases are majority white, making the United States, especially MLB, appropriate for study of cross-cultural diversity involving various national and cultural borders.

The primary purpose of this study is to explore the relationship between a group of multinational human resource and professional baseball team outcomes (winning percentage and team attendance) in order to contribute to the literature on the effects of culture on firm output, and to analyze whether multicultural team composition has an impact on professional baseball team outcomes by producing insights that are relevant to team operation. The model's intention is to help MLB organizations prepare for the decreasing popularity crisis by reflecting the U.S. demographic information on attendance and winning percentage.

Research Questions

1. How can professional baseball teams assemble their teams in terms of multicultural team composition? What are the significant subgroups of team diversity on team outcome during an MLB regular season?
2. What are professional baseball teams missing that other successful sports leagues have possessed to grow its popularity?

Definition of Terms

Culture: Defined as shared perceptions of having an overlap of expectations, roles, and rules in a group context; a result of categorization, by both in-group & out-group members based on nationality, race, and ethnicity (Earley & Mosakowski, 2000; Earley & Gibson, 2002; Roberge & Van Dick, 2010; Tajfel, 1982).

Diversity/Heterogeneity: “Any attribute that another person may use to detect individual differences” (Williams & O’Reilly, 1998, p. 81) - while accurate, is quite broad. “Various categorization schemes based on factors such as birthplace or race, or based on proportions such as the size of the minority, have been used to further refine the definition of diversity in teams” (Mannix & Neale, 2005). Heterogeneity has also been used in previous research as a synonym for diversity (Wiersema & Bird, 2017). In this study, the cultural diversity refers to comparing players with different nationalities within the same team; racial diversity refers to using players with different races between White, Latino, Black, Asian, and Mixed to detect any different outcome.

Cultural diversity: The probability that two randomly selected members of a group have different countries of birth (Alesina et al., 2016; Brox & Krieger, 2019). One whose employees originate from a variety of cultures or countries (Kahane et al., 2013).

Cultural heterogeneity: Cultural heterogeneous teams are known to have the variety of perspectives and experiences contributing to creativity, adaptability, innovation, and higher quality problem solutions (McLeod et al., 1996; Maderer et al., 2014). In the field of professional baseball teams, the players from different

origins are said to have distinctive strengths, as the education or training in particular countries is focused on different aspects.

Cultural distance (Euclidean cultural distance): It is calculated as the distance to a single country, i.e., the extent to which countries differ in cultural values, remains the most widely used type of distance in international business (Hofstede, 1984; Maderer et al., 2014)

Ethnic identity: Using the demographics of the United State, research on ethnicity or race has dealt increasingly with ethnic minorities of color, particularly African Americans, Asian Americans, and Hispanics/Latinos (Phinney, 1996).

Summary

This chapter includes the study's background and the statement of the problem. The research purpose and questions provide the reader a sense of direction for understanding development of the theoretical framework. These will be discussed in greater detail in the next chapter as this study will provide a brief overview of global marketplace, MLB diversity, multicultural sports team composition, and the relationships between diversity and team performance as well as cultural congruence and demand.

The current study introduces different cases of cultural diversity in various marketplaces and the importance of team composition on team outcomes of performance and demand as a theoretical framework. Based on past cross-cultural studies, empirical models were constructed to measure the effects of cultural diversity on team performance and fan demand of multicultural teams with research hypotheses. Thus, using secondary data on MLB players, this study

examined the effects of focus variables for cultural determinants, such as the number of foreign players and the numbers of Whites, Latinos, Blacks, Asians, and players of mixed background. This study also measured the cultural distances among players to determine how cultural differences affect team performance as well as the individual/collective dimension, which is the core dimension of culture by Hofstede (1980). In addition, the current study measures how matching team demographics and market demographics affects demand. Next, the second chapter reviews relevant information and the existing literature on the topic. Subsequently, it is followed by the presentation and descriptions of the main results. In the final chapter, the key aspects of this study are summarized, limitations and future research are discussed, and conclusions are outlined.

Literature Review

Past & Recent Aspects of Global Marketplace

Diversity has changed the landscape of how firms hire multinational employees. Thus, multinational corporations were able to compete in a flattened global market economy. A sport industry is one of the industries that benefited the most in developing and expanding into global marketplace. Sport teams, leagues, and manufactures in developed countries have benefitted the most from seeking new opportunities internationally. Many scholars began writing about sport globalization as early as 1990 such as an article on American football's attempt to expand to the UK and Europe by Josh Maguire (1990). Although there are disagreements among sports scholars about the directions and influence of globalization, there is consensus existing on the position of soccer as the standard for globalized sport (Klein, 2008).

For example, FIFA World Cup easily exceeds any other public spectacle in terms of worldwide following. The global mega-event captured a viewing audience of 1.3 billion that watched the final game of the 2006 World Cup. For the record, soccer also known as football is played professionally in 204 countries, more than any other sports. What is more impressive is the degree to which soccer is integrated both vertically and horizontally on an international scale. The sport has been played at elite levels all over the world despite the complex organization of private clubs, national team, and international league structures.

By comparison, baseball is not quite near the global reach of soccer or developed

the global character of soccer (Kelly, 2007). However, baseball may still be able to yield some badly needed insights into globalization. Although many scholars of baseball have mentioned the globalization of baseball, they do not regard it as a global sport (Kelly, 2007). Some of these scholars have stated that globalization is imperative and critical to the future prosperity of baseball, and that baseball in the United States should no longer rely on its domestic base of fans and players. Baseball's emergence as an organized sport and its diffusion beyond the USA began even earlier than the English sports of soccer and rugby, while cricket had predated all three (Kelly, 2007). In North America, no league has international appeal like the NBA. The NBA is the most global American sport league in terms of impact because it has been successful producing stars and opening the gate of a Chinese market, which makes up a large part of its fan base (Sun, 2015).

The history starts from 1800's and currently its diffusion reached in 109 nations, and has transformed from American national pastime into a global game (Gmelch, 2006). Recently, MLB has been showing conspicuous efforts to globalize America's pastime by scouting more international players and staging exhibition and season games internationally. A total of 251 players (28.5%) represented 20 different countries outside of the USA on 2019 Opening Day according to the MLB website.^② Although foreign participation in the league is chronologically deep and geographically wide (Osborne, 2006), it has not been able to globalize itself successfully as EPL and NBA. Its difficulty gaining steam in developed nations throughout the Pacific and Europe raises the question whether or not the game is actually being globalized, or if America is simply exerting power dominance and

^② *The 251 foreign-born players are the third-highest total in history, trailing 2017 (259) and 2018 (254), and the percentage of 28.5 is the fifth-highest figure in history, behind 2017 (29.8), 2005 (29.2), 2007 (29.0) and 2018 (29.0).*

‘westernizing’ the developing world. Furthermore, it remains questionable whether the game is actually being exported internationally, or if the US is simply importing baseball labor services (Klein, 2006).

The biggest difference of recruiting players from Latin America compared to players from North America and Asia is that rules and regulations are not the same (Marcano & Fidler, 1999; Zhang *et al.*, 2018). In the 21st-century, Asian markets have received the most attention with its rapid economic growth and large population (Bodet & Chanavat, 2010). Asia hosts the third of the world’s population and Asian countries like China and India are some of the fastest growing economies in the world. Professional sport leagues and clubs in developed countries have focused on Asia for global expansion opportunities because sport businesses in North America and Western Europe have entered the maturity stage of business cycle (Rowe & Gilmour, 2010). “Obviously we are a commercial business but by the same token we provide a societal benefit where people come together across socio-economic, ethnic, racial lines to share a love of baseball,” said the Oakland A’s president David Kazal.

Diversity Outreach in MLB

MLB's effort at global marketing is not the only issue, but also domestically the organization has implemented programs like Reviving Baseball in Inner Cities (RBI) to help diversify their team composition and fan base for minority population. Kihl, Babiak, and Tainsky (2014) examined the RBI program regarding the corporate community involvement initiative of one team's program. Some of the major issues was the inconsistent communication efforts between MLB and the community as well as the ineffective marketing of services between the two parties.

According to USA TODAY (Wolken, 2018), baseball is struggling to connect with younger audience. Based on the RBI program, the factors that influenced youth participation are that organized sports participation among minority youth should be considered as an outcome of a long process involving different levels of individuals, family, and community (Stodolska, Sharaievskia, Tainsky, & Ryan, 2014). For example, it can include the desire for youth to have a father figure while staying out of trouble in summer break.

Past studies have not specifically focused on the lack of diversity in MLB's fans. According to the MLB community website in 2016, the RBI program is intended to "increase participation and interest in baseball and softball among underserved youth, encourage academic participation and achievement, increase the number of talented athletes prepared to play in college and minor leagues, promote greater inclusion of minorities into the mainstream of the game, and teach the value of teamwork". Along with the overall mission of diversity and inclusion within MLB, the RBI has had nearly 300,000 participants in more than 200 cities globally. The

RBI program was created by a former MLB player and talent scout John Young. His intention was to help inner city youth in South Central Los Angeles stay out of trouble and become responsible young adults. From the beginning, the front office of MLB endorsed the program and financially supported it. Despite the low initial participation, the number of participants eventually grew up to 180. By 1991, MLB decided to implement this program on a permanent basis by encouraging every 30 MLB teams to get involved thanks to the increased popularity.

To sustain the RBI program, MLB has invested over \$30 million dollars ever since all the 30 teams have participated. Also, MLB has partnered with many organizations (e.g., Boys and Girls Club of America) to provide positive impact on youth while having MLB executives as the director. In 2008, MLB permanently hired David James as the director of the RBI program. Since his tenure, the RBI program has not only provided athletic opportunities for inner city youth, but provided educational opportunities as well. For example, they offer scholarships to participants for college tuition. Additionally, they provide mentoring, tutoring, and life skills training through various educational programs that have partnered with MLB (e.g., Partnership for a Drug-Free America). However, because the RBI program has only been a summer program from May to August, MLB developed the Urban Youth Academy (UYA) to supplement the RBI program.

The UYA is a non-profit organization formulated by MLB in 2006. The mission was to grow the games of baseball and softball by providing them to urban youth year-round while cultivating diversity in all aspects. Also, the organization was established to improve the lives of individuals living in surrounding communities. MLB has established four primary processes of their Urban Initiatives through UYA: "To grow the games of baseball and softball while cultivating diversity in all

aspects of the game, to make meaningful contributions to the development of urban communities, to provide safe and organized recreational activities for urban youth, and to prepare urban high school players for college and professional baseball/softball programs" (Anderson, 2016).

Since the both programs were established by MLB for more than a decade and still there is no progress in the involvement of African-Americans in the baseball league, people may assume that MLB is not concerned about the effectiveness of the RBI and UYA programs. Rather, there is a chance that they are more concerned with being able to prove that they simply have the infrastructure set up. Today, attracting the African-American community to attend MLB games is another challenge (Fortunato & Williams, 2014). One survey by Scarborough Marketing Research reported that "Only 9 percent of fans who attended a Major League Baseball game were African American.

Multicultural Team Composition in Sports

Research on team composition and group diversity is very important as the number of many different types of organizations have increased in diverse work groups (Moreland, Levine, & Wingert, 2013). The classic framework of the input-process-output (I-P-O) model has had a powerful influence on today's empirical research on the outcomes of team performance (Hackman, 1987; McGrath, 1984; Steiner, 1972). However, there was a shortcoming regarding the utility of I-P-O models of not capturing the emerging consensus about team's complexity. Thus, Ilgen et al. (2005) focused on practical issues such as finding answers to the generic question

of what makes some teams more effective or more successful relative to others, and it emphasized inputs such as composition, structures, or reward allocations. Team composition is the configuration of member attributes in a team, which has a powerful influence on team processes and outcomes. For effective performance, the team composition design variables include size, tenure, demographics, and diversity (Cohen & Bailey, 1997) and research on the importance of team composition with cultural diversity has increased (Maderer, Holtbrügge, & Schuster, 2014).

Professional sports are a recognized source of research for teams and human resource management. All the four major North America professional sports leagues MLB, NBA, National Football League (NFL), and National Hockey League (NHL), have an estimated total value of \$66 billion, while the top European football/soccer teams have an estimated total value of €10 billion (Sakuda, 2012). For such size of big business in sport industry, the composition of a professional sport team is one of the critical determinants of its efficiency. In addition, the international presence in American professional sports has become prevalent (Leifer, 2009). However, only limited research has been conducted in the field of multicultural team composition despite the fact that multicultural teams are an important phenomenon in professional team sports (Maderer et al., 2014).

The topics of globalization and team work is prevalent in recent business media because it is necessary to examine how the intersection of them might affect the labor market decisions of the global firm (Lazear, 1999). In integrated world markets, it is known that international mixing of employees can create difficulties for a team due to their difference of cultures, legal systems, and language. On the other hand for benefits, the more disjoint the skill set of the team members, the

greater the benefits of diversity (Lazear, 1999). Thus, a team with multicultural composition representing a diverse range of cultures will have greater collective knowledge and skill. For empirical testing of the theoretical model, NHL data is used to overcome the general lack of availability of detailed firm-level data on employees (Kahane, Longley, & Simmons, 2013). Their results show that having international employees does increase firm-level performance. In the case of NHL, teams with a higher number of European players performs better. However, teams perform even better when the European players come from the same country rather than having European players from different countries. Nationality is a salient aspect of an individual's self-identity that derives from a shared meaning system and is claimed to be more important for interactions among team members than other demographic characteristics (Earley & Mosakowski, 2000).

Recruiting international players regardless of their nationality allows sport clubs to make use of a global talent pool by combining the specific strengths of players with different cultural backgrounds (Maderer et al., 2014). Football players from different countries often have diverse skills, as football knowledge is focused on different qualifications (Lanfranchi and Taylor, 2001; Theweleit, 2009). For example, German clubs put more emphasis on discipline, power, and efficiency, Italian clubs are well known for their good tactical skills, while in Brazil technical skills are more important (Müller, 2009: 273). Thus, it could make sense that these diverse skills in multinational football teams are known for enhancing their success. Particularly France won the 1998 FIFA World Cup with nearly half of the team consisting of players whose parents immigrated to France from Algeria (Kassimeris, 2011). Although not a professional football squads, this clearly has shown a prime example of multicultural teams.

While some teams are very heterogeneous with players from multiple different nationalities, other teams have a majority of domestic players. In the case of MLB international players utilizing country-of-origin, Canadian players have a tendency to produce pitching, Venezuelan and Puerto Rican players to produce offensive statistics, and Mexican players are known for their specialty in pitching based on most consistent findings (Osborne, 2006). This type of global trend of hiring players from a variety of cultures or countries can also create difficulties for a team that would otherwise not be present (Lazear, 1999). Due to the fact that international players have different cultures, legal systems, and language, the team must also think about the costs to integrate these players into a cohesive team and not only worry about the financial costs. As the population of athletes have continued to grow internationally heterogeneous over the years, this line of study adds more incentives to evaluate whether culturally diverse teams can provide benefits or not. Among different team sports, baseball has been identified as a task of low interdependence meaning that players tend to be independent of each other and team performance is the aggregate pool of each team members' output (Sakuda, 2012; Timmerman, 2000).

Diversity and Team Performance

Diversity is an aggregate team-level construct that represents differences among members of an interdependent work group with respect to a specific personal attribute (Jackson et al., 2003). The question of “good” diversity versus “bad” diversity has been a main question in the scholarly discussion since Williams and O'Reilly (1998). Based on the past analysis of the diversity-performance

relationship, the general direct effect of team diversity on team performance is negligible with the inherently complex nature of diversity (Horwitz & Horwitz, 2007; Joshi & Roh, 2009; Pelled, 1996). However, there were small yet significant effects when bundles were created by combining diversity into task and relationship bundles. Relations-oriented diversity attributes include gender, race/ethnicity, and age, which are cognitively accessible, pervasive, and immutable; these attributes are associated with social categorization process (Fiske, 1998; Van Knippenberg et al., 2004).

“Teams are units of two or more individuals who interact independently to achieve a common objective” (Bell, 2007, p.595). According to Crook et al. (2008), the human, tangible, and intangible ‘strategic’ resources are significantly related to performance, and the human and intangible resource effects are significantly larger than the tangible resources. Team performance is defined as the extent to which a team accomplishes its goals or mission such as winning games for sport organization (Devine & Philips, 2001). Winning is the key to economic success in professional sport business entities because it increases fan interest and eventually improves media ratings and team-related sales (Lewis, Sexton, & Lock, 2007).

The objective of the team owner is to maximize profits or to maximize seasonal winning percentage (Borland & MacDonald, 2003). The most common measure of team performance is regular season wins. Professional sport team is quite useful for analyzing general organizational phenomena because of the following reasons (Keidell, 1987): First, a wealth of objective performance data is available at the individual and team levels. The winning percentage of each team at the end of a season represents an objective assessment of how well the team met a common goal held by all teams. Second, the amount of available data for all team members

and teams diminishes any concerns related to sample size and sampling bias. Finally, they may provide accurate representations of certain generic types of organizations such as affiliated farm teams.

Cultural diversity has the potential to influence team members and outcomes, and is often considered advantageous in sport contexts (Godfrey, Kim, Eluère, & Eys, 2020). The different cultural characteristics of players may, however, also challenge the development of an effectively functioning team. For example, race and age are important variables in team composition research because they are frequently involved in social categorization (Tajfel, 1981; Turner, 1987). According to social categorization theory, individuals perceive other individuals, such as teammates, based on experiences or expectations of ethnic classifications (Ashforth & Mael, 1989). Within a team, player characteristics underpin team structure, cohesion, processes, and ultimately outcomes such as winning percentage. In addition, sport psychology scholars have emphasized the importance of considering cultural background as a critical characteristic in team settings (Schinke, Blodgett, McGannon & Parham, 2014).

Cultural diversity is evident in MLB, with the Institute for Diversity and Ethnicity in Sport (TIDES) assigning it a racial hiring grade of 88 percentage points in 2018³ and 89 percentage points in 2019 (Lapchick, 2019). In 2019, 41% of MLB players were of color, including 8.4% being African-Americans, 29.5% being Latino (a slight decrease from 31.9% in 2017), and around 1.9% being Asians. Linguistic distance as a marker of team diversity using data from the UEFA Champions League (2003-2012) indicated that more heterogeneous teams

³ *The 254 players born outside the U.S. (29%) out of 877 players (750 active 25-man roster players and the rest of disabled, suspended, and restricted) represent a record-high 21 countries and territories outside the U.S.*

outperform less diverse teams (Ingersoll, Malesky, and Saiegh, 2017). However, the setting might have been empirically problematic because only the best teams from each league play in the Champions League.

The effects of demographic diversity involve theoretical perspectives such as similarity-attraction theory, social identity theory (Ashforth & Mael, 1989) & social categorization theory (Hogg & Abrams, 1988; Turner, 1987), and information processing (Mannix & Neale, 2005). They imply that increased perceptions of demographic differences among group members lowers group cohesion and reduces efficiency in team processes (Tsui et al., 1992; Tsui & O'Reilly, 1989; Hogg, 2016). Diversity plays a role as perceived differences, while there is a higher chance to be encountered in more diverse teams, limit the degree of identification and commitment to the group through lower feelings of identification to other team members (Tsui et al., 1992). Both similarity-attraction theory and social identity theory suggest that individuals tend to seek team members who are similar to themselves and not the other dissimilar members (Williams & O'Reilly, 1998). Social category diversity has shown to increase relationship conflict in a team setting (Jehn & Neale, 1999), and diversity in deep-level cultural differences has been shown to interfere in the establishment of good relationship between team members (Van Vianen et al., 2004).

Previous empirical studies of the effects of cultural diversity on team performance have yielded conflicting results, with some studies showing positive (Earley & Mosakowski, 2000; Ingersoll et al., 2017; Kahane, 2013) and others showing negative (Haas & Nüesch, 2012; Jehn & Bezrukova, 2004; Meeussen et al., 2014) effects. On average, the previous studies tend to indicate that cultural diversity has a negative effect on team outcomes. However, negative effects

disappear over time if conflicts are resolved appropriately (Timmerman, 2000; Williams & O'Reilly, 1998). Surprisingly, few studies to date have assessed the specific relationship between cultural diversity and team performance. Because studies of this relationship have yielded inconsistent results, it is useful to analyze whether cultural diversity has an impact on the performance of MLB teams.

Timmerman (2000) examined the relationships between age diversity, racial diversity, and team performance by using 871 NBA teams and 1,082 MLB teams from 1950 to 1997. Pelled et al. (1996) found that greater age difference was associated with less emotional conflict, which can be interpreted that homogeneous groups had more emotional conflict than heterogeneous groups. The purpose was to test the relationship between the two types of diversity and objective team performance. The results showed that racial diversity was negatively associated with basketball team performance, but the racial diversity variable was unrelated to baseball team performance likely due to different interaction patterns between different sports. Despite the difficulty of analyzing intrafirm impacts of globalization, Kahane, Longley, and Simmons (2013) measured the effects of workplace diversity on firm performance by using the data from NHL. They examined the number of foreign players on a team and the composition of the foreign players group. The results indicate that teams perform better when their foreign players tend to come from the same country rather than being spread across many European countries.

Past researchers have adopted variations of organizational demography's two-step model of diversity-cohesion-performance (Kankanhalli et al., 2006; Mannix & Neale, 2005; Williams & O'Reilly, 1998). In the first step of the model, it reduces social cohesion and increased conflict within the team is perceived due to the

awareness of diversity differences. Eventually, the reduced social cohesion then hinders team processes that negatively impact performance (Timmerman, 2000). Among various factors that may influence diversity's negative effects on performance, task characteristics is a possible influence on diversity not directly related to social factors (Knouse, 2006). Hence, task interdependence and task cohesion have both played moderating the relationship between diversity and performance (Jehn & Neale, 1999; Kankanhalli et al., 2006; Timmerman, 2000).

Another latent issue related to these inconsistent findings is mismatching the conceptualization and operationalization of cultural diversity (Harrison & Klein, 2007; Godfrey et al., 2020). In other words, there is a chance of using cultural diversity as an umbrella term to represent other related types of diversity such as meta-analysis for the effects of cultural diversity on performance but included studies that examined national diversity (Earley & Mosakowski, 2000), racial diversity (Timmerman, 2000), and ethnic diversity (Paletz, Peng, Erez, & Maslach, 2004; Phinney, 1996). Hence, it is important to keep in mind that these related terms (nationality and ethnicity) are slightly different in terms of how they are assessed in a team as indicators of cultural diversity.

Cultural Congruence and Demand

According to Society of American Baseball Research, the number of Latin American players in the major leagues was at an all-time high with 32.9 percent in 2004. At the same time, Latino fan-base has been growing. In 2017, about 31% of all MLB players and approximately 50% of all minor leaguers are Latinos (Elk &

Moreno, 2018). Since the late 20th century, experts and owners had to recognize the international presence in the U.S. professional sports and even the need for sports to orient themselves toward a global fan base (Leifer, 2009). MLB became ethnically diversified while trying to scout more players internationally. An example of internationalizing the league by targeting larger markets has been the recruitment of Asian players. The intention was to uncover and develop foreign sources of new talent (Klein, 2006). This would attract fans by strengthening the imagining and articulation of their ethnic identity (Shin, Welty, & Park, 2019). At the same time, it is necessary to focus on fan/customer preferences which is one of the three potential sources that may lead to discrimination (Becker, 2010). However, the influence of nationality has not been fully studied even though foreign participation in MLB is chronologically deep and geographically wide (Osborne, 2006).

Most of the past publications in the field of multicultural teams were focused on the effects of racism and discrimination (Kahn, 2000; Kahn & Sherer, 1988; Preston & Szymanski, 2000; Scully, 1974; Szymanski, 2000; Wilson & Ying, 2003). Only a limited number of past studies deal with the performance effects of multicultural team composition mostly using samples of German Bundesliga (Maderer, 2014). There were previous publications also devoted to the effects of racism and discrimination using the data of NBA (Burdekin, Hossfeld, & Smith, 2005; Hoang & Rascher, 1999; McCormick & Tollison, 2001; Bodvarsson & Brastow, 1999). Schollaert and Smith (1987) examined the racial composition of NBA teams to see if race element is a significant factor explaining sports game attendance variability. For the determinants of attendance, it includes the percentage of black players on the NBA teams from 1969 to 1983. There was not

any pattern that team racial composition has an impact upon NBA attendance.

In the English professional soccer league, Pedace (2008) used a market test approach to evaluate nationality discrimination by estimating the effect of team nationality composition on attendance. The results showed that having more South American players increased attendance. Similar study has been undertaken to assess the presence of MLB fan discrimination relating to nationality (Tainsky & Winfree, 2010). The overall result showed that foreign players had a negative effect on demand for the period of almost half the era, but the effect evolved steadily over time and turned positive in 1992. Customer prejudice in MLB was first published in the 1970s (Gwartney & Haworth, 1974; Scully, 1973) and followed subsequently by other publications (Desser, Monks, & Robinson, 1999; Hanssen, 2001; Tainsky & Winfree, 2010).

One of the aims of this study is to analyze whether race can still affect fan preference. Previous publications showed that matching the racial profile of their players with their market's racial profile can boost their attendance and revenue (Burdekin & Idson, 1991; Burdekin, Hossfeld, & Smith, 2005). In the case of NBA teams, using data from the 1980s, Burdekin and Idson (1991) showed that the link between racial structure of teams and racial structure of team market areas may support profit maximization. Hence, Burdekin et al. (2005) confirmed that the teams effectively increased their attendance and revenue by matching the racial profiles between the team players and its market again. Matching the racial demographics of their market not only applied to game attendance, but the teams also enjoyed greater market attendance gains. Based on the results, we can assume that people prefer to watch athletes of their own race and that satisfying their preferences leads to attendance gains. In addition, more skilled white players tend

to end up with teams located in markets with relatively larger white populations. It is complicated to conclusively determine whether the findings are attributable to fan discrimination alone or as well as the quality effect of a player. Given the decreased number of black player participation in MLB, it seems necessary to evaluate the relationship between MLB team racial composition and metropolitan area racial composition.

Each MLB team plays 81 home games during one regular season, which is almost twice the number of home games in both the NBA and the NHL, and 10 times the amount played in the NFL. Due to this unusual MLB business situation, various studies have focused on MLB attendance in the context of factors such as star players and payroll distribution (Rivers & DeSchrive, 2002), team success (Davis, 2008), location (Winfrey, McCluskey, Mittelhammer, & Fort, 2004). The results of these studies have revealed several variables such as average team payroll, number of previous championships, season rank, and distance between home and visiting teams significantly affecting the team attendance.

Hypothesis Development

Cultural Heterogeneity and Team Performance

National and Ethnic diversity

Team composition is by far the most important strategic decision, where a sport team has to make mainly for winning a competition. By employing multicultural teams, a club seeks to tap the advantages of cultural heterogeneity (Maderer et al., 2014). The question that naturally comes to mind is what benefits do culturally diverse team provide? Cultural heterogeneity provides the variety of perspectives and experiences that contributes to creativity, adaptability, innovation, and higher quality problem solutions (McLeod et al., 1996: 257; Wiersema & Bantel, 1992: 93). Most common way of categorizing culture is based on nationality, race, and ethnicity (Earley & Mosakowski, 2000; Roberge & Van Dick, 2010; Tajfel, 1982). However, the culture-related terms are similar and mixed in the popular mind that it may cause confusion. For example, the category ‘Black’ is racial and it has been opposed to Hispanic, which is ethnic, and to Mexican, which is national (Godfrey et al., 2020).

In the field of professional football teams, they are said to have distinctive strengths based on different origins as football tactics and skills in particular countries is focused on different aspects (Maderer et al., 2014). For example, German players are known to be disciplined, strong, powerful, efficient, and straightforward; Brazilian players are recognized for their technical skills; Italians have the strengths of flexibility and sound in tactics (Müller & Müller, 2009). In

fact, there is evidence that the combination of players with cultural heterogeneity can have a positive impact on team performance (Timmerman, 2000; Kahane et al., 2013). On the same note of Pedace (2008), “Nationality characteristics will have a significant impact on performance, after controlling for salary expenditure, only if there is discriminatory wage structure (Szymanski, 2000)” (p.116). Based on nations in comparative advantage theory (Heckscher, 1949; Samuelson, 1948), the player’s country of birth is assumed to be where he received his skill endowments. For example, Canada substantially specializes in pitching, Puerto Rico has a specialization in hitting as well as Venezuela (Osborne, 2006).

However in contrast, cultural heterogeneity also may have a negative impact (Chevrier, 2003; Maznevski & Chudoba, 2000; Maderer et al., 2014; Timmerman, 2000). Despite all the diverse range of cultures from different countries, if skill and knowledge sets of teammates overlap, the gains from hiring a diverse team are diminished (Kahane et al., 2013). Based on the propositions of social identity theory and social categorization theory (Ashforth & Mael, 1989), national diversity may be detrimental to team performance, and past scholars have shown such negative relationship (Haas & Nüesch, 2012; Jehn & Bezrukova, 2004; Meeussen et al., 2014). When people from different origins collaborate, they are likely to face cultural and linguistic barriers. Thus, national diversity reduces the efficiency of the collaboration (Lazear, 1999). Such inconsistent findings and the increasing trend of multinational working groups bring up the question of how national diversity^④ influences team performance.

The interdependence of tasks among teammates in baseball is relatively low

^④ Referencing Alesina et al. (2016), we define “national diversity” as teammates have different countries of birth.

compared with football and basketball (Keidell, 1987; Sakuda, 2012; Timmerman, 2000). Keidell (1987) suggested that baseball teams should consist of pooled interdependent players, with team performance being approximately the sum of individual players' performances. In addition, team performance in baseball was found to be dependent primarily on individual performance (Jones, 1974). This study argued that the game of baseball may be viewed relatively less team-oriented than other sports. Thus, baseball team performance can be interpreted as aggregation of each player's performance because of their larger field size. Throughout the season, each baseball team uses nine players not including the additional players like pinch hitter and designated hitter for offense and relief pitcher, middle reliever, and the closer for defense.

Baseball is known as an "American" sport, but the game is still considered as more of a white man's sport especially from minorities in America. The nature of the task is another possible factor because it involves the interaction and reliance of team members. Pelled et al. (1996) found that racial diversity causes more of emotional conflict if a team has to perform no-routine tasks. However, baseball is a game that requires more mental effort than other team sports, with games having strategic, tactical, and technical features. Additionally, baseball requires the players to be highly dependent on each other mentally, both for scoring runs and winning games. The cultural barriers and mental dependence when interacting with foreign teammates may result in complex relationships with intra-group conflicts (Mannix & Neale, 2005; Pelled et al., 1996). Despite ongoing social equality issues, surprisingly few studies have assessed the specific relationships between racial diversity and team performance (Williams & O'Reilly, 1998). This lack of research on the relationship between racial diversity and performance may be due to

difficulties in defining racial diversity (Timmerman, 2000). Previous studies have reported that racial diversity has positive, negative, and null effects on performance. In MLB, Whites remain the dominant ethnic group, followed by Latinos, Blacks, and Asians. The majority White compositions of team rosters and fan bases and the lack of African-American players and fans are challenges for MLB. Marketing theory suggests that increasing African-American participation has value (Fortunato and Williams, 2014). It is therefore hypothesized that:

Hypothesis 1: An increase in national diversity of players on a team will negatively affect team performance.

Hypothesis 2: An increase in ethnic diversity of players on a team will positively affect team performance.

Cultural Distance

Team performance is affected not only by the number of players of different nationalities in a lineup but also by the cultural distance between players on the team (Maderer et al., 2014). The concept of Euclidean distance computes the distance in a four dimensional space of Hofstede as the square root of the sum of the squared differences in the scores on each cultural dimension (Wagner et al., 1984; Drogendijk & Slangen, 2006). For example, a German player and a Swiss player are culturally more similar than a German player and a Japanese player because the Euclidean cultural distances are 2.89 between Germany and Switzerland and 17.22 between Germany and Japan (Hofstede, 1984; 2001). Similarly, the current study measures the Euclidean cultural distances of players on a team, expecting that teams with a higher cultural distance would tend to show

lower team performance.

Based on the similarity-attraction paradigm, it is likely that players from different countries with high cultural distance are less attractive to each other, mainly because they do not have a common culture, thus increasing the risk of conflicts (Morry, 2005). A large number of players from different cultures can lead to a high risk of misunderstanding because these players differ in values, goals, beliefs, and language (Earley and Gibson, 2002). This may lead to a lack of understanding of the viewpoints of other team members (Earley & Gibson, 2002), which can hinder cohesive teamwork. Better team chemistry or team cohesion, especially in multicultural teams, results in more success on the field. In addition, because most players on every MLB team are from the United States, the cultural distance of non-American players to the United States is an integral part of the cultural distances within teams. Because of the individualistic culture of America^⑤, players from more collective cultures may not blend in with American culture. Depending on the cultural distances among players, these cultural differences would likely negatively affect team performance, resulting in the following hypotheses:

Hypothesis 3: Increased cultural distances among players on a team will negatively affect team performance.

Hypothesis 4: Increased cultural distance to the United States of America will negatively affect team performance.

^⑤ The United States of America has an individualism scores of 91, one of the highest in the world based on Hofstede's (2001) cultural dimensions.

Collectivism/Individualism

Intercultural management studies have shown that collectivism and individualism, which form the core dimension of culture, guide the overall behavior of people (Hofstede, 1984). Assessment of this dimension in multicultural teams is appropriate, due to the importance of individualism versus collectivism (Cox et al., 1991; Gibson, 1999). Individualism states that the interests of the individual are superior to those of the team, whereas collectivism emphasizes the interdependence of all team members and the importance of group identity. Baseball is considered a low interdependent task, which moderates the relationship between diversity and performance due to low team interaction and less intra-group conflict (Keidel, 1987; Sakuda, 2012; Timmerman, 2000).

Task interdependence and cultural dimensions of collectivism and individualism can be integrated with social identity theory because of cultural variations in team performance (Gundlach et al., 2006). The question thus arises as to whether the cultural dimension has an impact on the performance of a baseball team. Because baseball is regarded as a task with low interdependence, this study predicted that it is easier for players to be individualistic and that team performance is the aggregate sum of the performance by individual team members. The current study hypothesized a negative correlation between collectivism and team performance:

Hypothesis 5: Increasing the proportion of players from collectivist cultures will negatively affect team performance due to the lower interdependence of baseball.

Cultural Congruence between Team and Market

The large portion of multicultural players have an impact on attendance beyond their contribution to winning. Tainsky and Winfree (2010) suggested that the number of foreign players in a team positively affects the number of attendance and it increases revenue of the team. Hence, country of origin is an important input effect on fan behavior. Previously, other non-sport studies showed the important role of country image in product evaluation (Han, 1989; Hong & Wyer, 1989). Han (1989) provided a theoretical foundation of country image, which plays a role in consumers' belief about product attributes and directly affects their attitude toward the brand. In addition, Hong and Wyer (1989) evaluated the effect of country-of-origin, which stimulates subjects' interest in the product and consequently leads them to think more extensively about product information and its evaluative implications. One interpretation of these results is there may exist consumer discrimination as the population of MLB athletes continues to grow internationally heterogeneous. In 2000, adding an additional foreign-born player to a major league roster increased stadium revenue by \$595,632 when the incentive hit the peak (Tainsky & Winfree, 2010).

Even prior to NBA prospered globally with increased international fans, previous studies using SMSA and NBA team data both in 1980s and 1990s showed that the racial composition of NBA teams is positively correlated with racial composition of their MSA markets (Burdekin et al., 1991, 2005; Hoang & Rascher, 1999). The matching of consumer preferences or the racial composition of the market area and the team's racial composition is important because it can

positively boost game attendance. Customer preference have existed in other professional sports leagues including European soccer leagues (Pedace, 2008; Szymanski, 2000). For example, fans of Premier division teams significantly attended matches more when the team utilizes more players from South America. The average season attendance increased 3% for an additional South American player appearance. In baseball, using samples from 1960-61 and 1977, empirical results of previous studies also suggested that fans had racial preferences for players based on samples of White, Black, and Latino players especially hitters (Anderson & La Croix, 1991). To measure how matching market population demographics and team demographics affects demand, the current study evaluates both racial preference and national preference simultaneously based on reliable player race data and nationality data.

Hypothesis 6: Matching the proportion of team racial composition with the population of the team's corresponding market area will be positively related to the change in demand at MLB games.

Methods

Sample and Descriptive Statistics

The literature of sport economics nowadays is quite prevalent and spans fifty years since Rottenburg's (1956) topic on baseball labor markets. Sport-related research can be found in numerous sport economics literature because sports industry provides a level of data availability not typically seen in other sectors. This allows economists to empirically test theories which is not possible in most other industries due to other constraints such as data accessibility (Kahane et al., 2013). In terms of a sport production function literature, Scully (1974) modelled the winning percentage of baseball clubs as a function of various player, management, and team characteristics.

Baseball is a team sport, but it is an accumulation of individual activities and independent contest between a pitcher and a hitter unlike other team sports. Throwing a strike, hitting a line drive or fielding a grounder is primarily an individual achievement while the performance of each negligibly affected by teammates. The team that performs the most individual tasks well will probably win the game. While baseball has a two-player interaction (a pitcher confronting a batter), other major league sports have greater intra-team interaction making statistical analysis much more complex.

The MLB regular season consists of 162 games across two leagues, 144 within each team's league and 18 with teams in the other league. Each league is divided

into three divisions of five teams each, for a total of 30 teams. Within each league, the first-place teams in the three divisions and the second-place team with the most wins qualify for post-season playoffs. However, the current analysis only examined the regular season, including the interleague games but excluding post-season games. The relationship between diversity and performance was evaluated in professional baseball teams, as teams in baseball and other sports have the same objectives and a clear measure of team performance.

The current study used secondary data retrieved from publically available sources^⑥. Seven regular MLB seasons, from 2013 through 2019, were analyzed, including 210 teams and 2908 players. These sources included the country of origin and ethnicity of each player. The total numbers of players from each country were tabulated for each team in each season. Players came from 30 countries other than the United States, including the Dominican Republic (DO), Cuba (CU), Puerto Rico (PR), Canada (CA), Bahamas (BS), Jamaica (JM), and the Virgin Islands (VI) in North America and the Caribbean (n=7); Mexico (MX), Panama (PA), Nicaragua (NI), and Honduras (HN) in Central America (n=4); Venezuela (VE), Colombia (CO), Curaçao, (CW), Aruba (AW), Brazil (BR), and Peru (PE) in South America (n=6); Germany (DE), Great Britain (GB), Italy (IT), Lithuania (LT), and the Netherlands (NL) in Europe (n=5); Japan (JP), Korea (KR), Taiwan (TW), Hong Kong (HK), and Saudi Arabia (SA) in Asia (n=4); South Africa (ZA); and Australia (AU). The distributions of American and international players were separately analyzed in the National League (Figure 1) and the American League (Figure 2). In addition, team addresses were gathered from online websites, and then they were

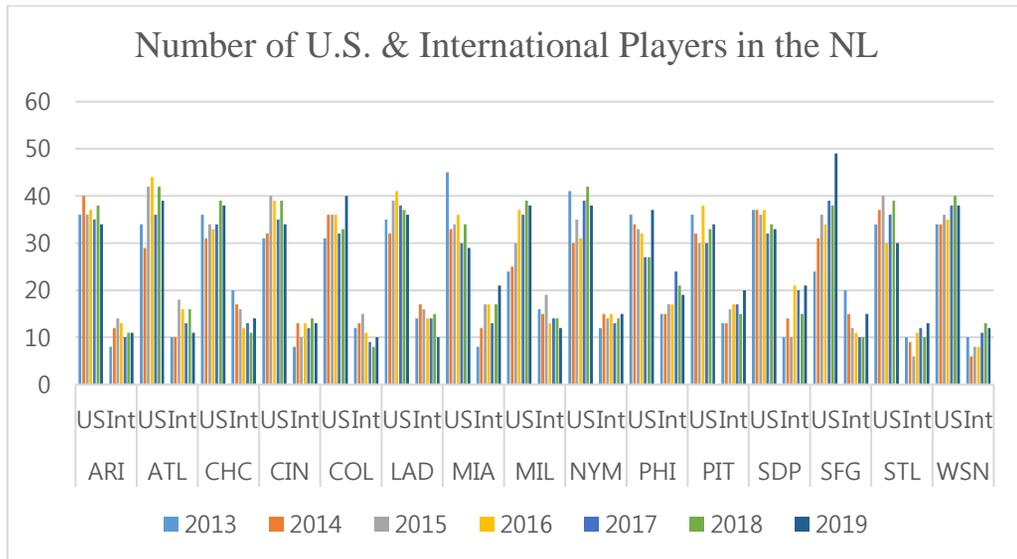
^⑥ www.baseball-reference.com, www.baseball-almanac.com/articles/baseball_rosters.shtml, www.census.gov/quickfacts/losangelescalitycalifornia, <https://www.retrosheet.org/>

used to find metropolitan statistical area population estimates from the U.S. Census Bureau.

These players were of diverse racial categories, with this study focusing on the top four categories, consisting of Caucasians, Blacks, Latinos/Hispanics, and Asians, with their distributions shown separately for teams in the National League (Figure 3) and the American League and (Figure 4). Moreover, MLB works with 129 international media partners to broadcast games in 15 languages across 204 countries and territories.

Figure 1

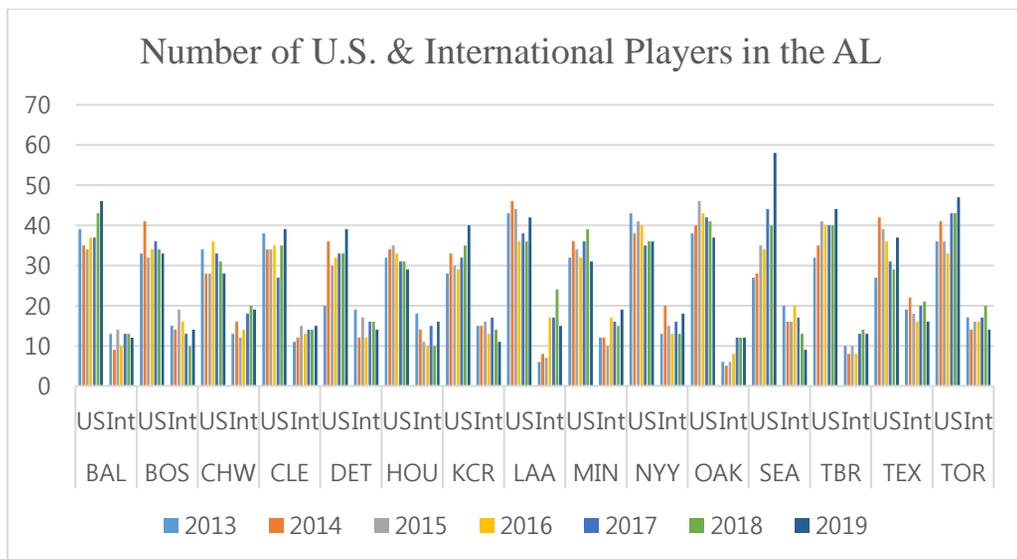
Numbers of American and International Players in the NL from 2013 to 2019



Note. ARI: Arizona Diamondbacks; ATL: Atlanta Braves; CHC: Chicago Cubs; CIN: Cincinnati Reds; COL: Colorado Rockies; LAD: Los Angeles Dodgers; MIA: Miami Heat; MIL: Milwaukee Bucks; NYM: New York Mets; PHI: Philadelphia Phillies; PIT: Pittsburgh Pirates; SDP: San Diego Padres; SFG: San Francisco Giants; STL: St. Louis Cardinals; WSN: Washington Nationals

Figure 2

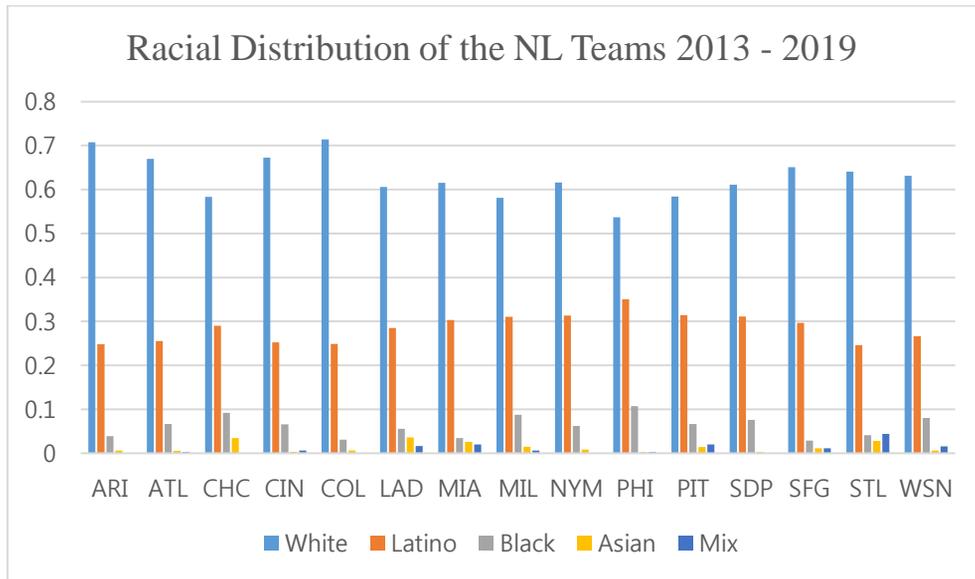
Numbers of American and International Players in the AL from 2013 to 2019



Note. BAL: Baltimore Orioles; BOS: Boston Red Sox; CHW: Chicago White Sox; CLE: Cleveland Indians; DET: Detroit Tigers; HOU: Houston Astros; KCR: Kansas City Royals; LAA: LA Angels; MIN: Minnesota Twins; NYY: New York Yankees; OAK: Oakland Athletics; SEA: Seattle Mariners; TBR: Tampa Bay Rays; TEX: Texas Rangers; TOR: Toronto Blue Jays

Figure 3

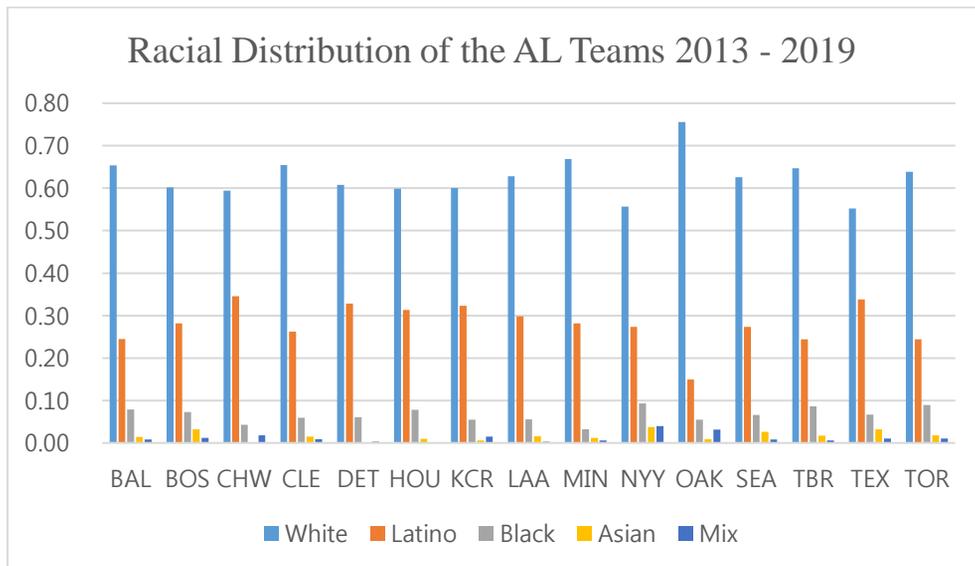
Racial distribution of players on NL teams from 2013 to 2019



Note. ARI: Arizona Diamondbacks; ATL: Atlanta Braves; CHC: Chicago Cubs; CIN: Cincinnati Reds; COL: Colorado Rockies; LAD: Los Angeles Dodgers; MIA: Miami Heat; MIL: Milwaukee Bucks; NYM: New York Mets; PHI: Philadelphia Phillies; PIT: Pittsburgh Pirates; SDP: San Diego Padres; SFG: San Francisco Giants; STL: St. Louis Cardinals; WSN: Washington Nationals

Figure 4

Racial Distribution of American League Teams from 2013 to 2019



Note. BAL: Baltimore Orioles; BOS: Boston Red Sox; CHW: Chicago White Sox; CLE: Cleveland Indians; DET: Detroit Tigers; HOU: Houston Astros; KCR: Kansas City Royals; LAA: LA Angels; MIN: Minnesota Twins; NYN: New York Yankees; OAK: Oakland Athletics; SEA: Seattle Mariners; TBR: Tampa Bay Rays; TEX: Texas Rangers; TOR: Toronto Blue Jays

Table 1*Variable Descriptions*

Variable	Description
1. Team ($Win\%_{it}$)	The winning percentage of a team during the regular season
2. Market size	The market size of each team, controlling for economic effects
3. Team payroll	Average total team payroll
4. Coach/manager win	The manager's career win percentage, excluding the current season
5. Coach/manager experience	Career tenure of the head coach
6. Age diversity	Each player's birthday measured at the team level
7. Cultural diversity (<i>nation</i>)	High scores indicate greater national diversity
8. Ethnic diversity (<i>race</i>)	High scores indicate greater racial diversity
9. Cultural distance	The distance between the focal individual and the average of all other team members
10. Individualism/Collectivism	One of the four Hofstede dimensions according to nationality
11. $\ln(Attendance_{it})$	Team's average game attendance for a single year
12. Win%	The winning percentage of a team during the regular season
13. Population	Natural logarithm of average population of metropolitan of each MLB club (in 000s)
14. Stadium new	Whether a team's home stadium was in its first year of use
15. Stadium capacity	The number of seats in a stadium
16. Franchise age	The number of years the franchise has been in its current city
17. Foreign player	Number of foreign players on the team
18. Asian player	Number of Asian players on the team
19. SNS popularity	Average number of players' Instagram and Twitter followers
20. Matching	Ethnic proportion of each team and the proportion of its market the corresponding MSA

Note. i : team i ($i=1,\dots,30$); t : season t in MLB ($t=1,\dots$)

Overview of Analyses

To test the performance of MLB teams during the regular season, the team's winning percentage (i.e., number of wins divided by the total number of games played) was measured as a dependent variable. This study reports the ordinary least squares (OLS) estimates based on the nature of the data, which account for the panel data with multiple regression models. It is arguably the most widely used method for fitting linear statistical models. OLS estimators minimize the average squared difference between the actual values of dependent variable and their predicted values. The variables in Table 1 describe the dependent variables, control variables, and focus variables used in the present study.

There are numerous ways to measure how any professional sport teams achieve their sporting success, which is also the most important goal of organizations. In the sports literature, it is standard to measure team performance by the percentage of games MLB team have won in a focal year, and whether or not the team went to the playoffs at the end of each season. Another dependent variable is MLB team's average game attendance for a focal year to measure demand. Based on these two variables, the current study used each regular season's win percentage and average attendance of 30 MLB teams from 2013 to 2019 seasons.

The variables in Table 1 describe the control variables used in the current study: *Team payroll* is the team's total payroll for a focal season (Bloom 1999), which was divided by 1 million for scaling; *Coaching experience* is included to represent coaching ability (Kwak & Lee, 2015), which is likely to affect under-achieving or over-achieving teams; *Age diversity* is the age differences among teammates, measured at the individual level by using their birth dates to determine ages for

each of the regular season (Timmerman. 2000; Williams & O'Reilly, 1998). *Market size* is often described as small, medium, and large: Markets of more than 10 million people are New York and Los Angeles; Markets of 5-10 million people are Chicago, Washington, San Francisco, etc.; Markets of 3-5 million and 2-3 million (Ozanian & Badenhausen, 2019).

In addition, the current study used the variables at team level in Table 1 for controlling team attendance: *Win percent* of teams represents team success during the regular season; *Last win%* or *Win(t-1)* is the winning percentage of the team during the prior season; *Population* indicates the value of the home team organization's Metropolitan Statistical Area (MSA) population; *New stadium* is an indicator variable for a new stadium in its first year while controlling for the increased demand attributable to the inclination of new technology also known as the novelty effect; *Stadium capacity* indicates the crowdedness of a stadium (Borland & MacDonald); *Franchise age* is the number of years the team organization resided in its current city; *Foreign players* (Tainsky & Winfree, 2010) is the number of foreign players as shown in Table 1, Figure 1, and 2; *SNS (social networking services) popularity* represents the average number of players' Instagram follower in Figure 5 & 6 and Twitter followers in Figure 7 & 8. Logs are implemented for attendance, population, and team payroll because the variables are all positive values and not in a percentage form.

The ethnicity of each player was determined by consulting various valid sources and images on the internet. The racial criteria were identical to those used by the Center for the Study of Sport in Society^⑦, as provided by Dr. Richard Lapchick, the director of the Institute for Diversity and Ethics in Sport of the University of

^⑦ <https://www.tidesport.org/mlb>

Central Florida. This study referred to the 2019 racial and gender report card, which summarized the numbers of White, Black, Latino, and Asian players on MLB teams. White and Black players born in the United States were classified by looking at their pictures. Birth country was used as a proxy for nationality. Players born in Mexico, Central America, South America, and the Spanish-speaking Caribbean were classified as Latinos; and players born in Japan, Korea, Taiwan, and other Asian countries classified as Asians.

A process of finding data and setting up for an examination of the relationship between multicultural diversity and team outcomes is difficult because it requires data on players' country of birth, ethnicity, and a measure of the outcome of the collective effort (Kahane et al., 2013). In addition, it requires information about the composition of each team, data on players' skills and experiences, as well as the output of the collective effort. In the time period of several regular seasons, there were players with the same name so thorough data collection was required not to get mixed up. For example, two Austin Adams, born in 1986 and 1991, both played pitcher during 2017-2019. There were several more pairs with the same name such as Angel Sanchez. This research work is done to count the number of SNS followers on social media portal Instagram and Twitter for SNS popularity. The number of each player's Instagram and Twitter followers were collected for several weeks until October 2020.

The team diversity of each team for the variables were quantified using Blau's Index Diversity (Blau, 1977). This disparity measure is the most frequently used indicator to mirror diversity also known as the inverse Herfindahl index. The index is defined as the following:

$$\text{Diversity of Blau index} = 1 - \sum p_i^2,$$

where p stands for the proportion of team players in a racial/national category and i is the number of different categories on a team. Thus, Blau's index is 0 if there is a team with all White players or all Black players. For example, a team with 6 White players and 6 Black players would have an index score of .50. A team with 4 White players, 4 Black players, and 4 Hispanic players would have an index score of .67. Therefore, teams with three categories can only score up to .67, and teams with four categories of races can score up to .75. Basically, the theoretical limit of Blau's index is 1.

However, the index has a shortcoming of giving each player the equal weight regardless of their contributions to sports teams. This may not be accurate because baseball has extremely high turnover rates as lineups constantly change compared to other sports. In terms of game contribution, key players tend to play every game unless they get hurt. However, supporting players may only play a few games under short contracts or play an entire season as an active player sparingly. To control for such effect, Timmerman (2000) used the samples of abridged rosters of players, which does not include players who played in less than the average number of MLB games.

The cultural diversity of a team was calculated using the heterogeneity index (Teachman 1980):

$$\text{Cultural heterogeneity} = \sum_{i=1}^n (P_i \times \ln(P_i)) \times (-1)$$

Here, the number of players of nationality i was divided by the number of players on the team (P_i), and the product $P_i \times \ln(P_i)$ was calculated for each nationality. All the terms were subsequently multiplied and added together, where P_i is the percentage of players in the team of nationality i , and n is the number of

nationalities. To standardize across various team portions, each value is divided by theoretical maximum $(-1 \times \ln(1/n))$. The index equaled 0 when all players were in the same category and 1 when the players were spread evenly over all categories $(-1 \times \ln(1/n))$. Thus, a greater distribution across nationalities was associated with a higher score. For example, Table 2 shows the detailed procedure for calculating the diversity of one of the most culturally heterogeneous teams, the Los Angeles Dodgers, which had a total standard cultural heterogeneity score of 0.45.

Table 2

Calculation of the Cultural Heterogeneity of the LA Dodgers

	CA	CW	DO	JP	KR	MX	PR	US	Total
Number of players with nationality (i)	1	1	2	1	1	1	1	17	25
Percentage P_i in relation to team size	4.0	4.0	8.0	4.0	4.0	4.0	4.0	68.0	100
$(P_i \times \ln(P_i)) \times (-1)$	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.3	1.439
Theoretical maximum	$-1 \times (\ln(1/n));$ with $n = 25$								3.219
Standardized cultural heterogeneity	$= \frac{\sum_{i=1}^n (P_i \times \ln(P_i)) \times (-1)}{-1 \times (\ln(1/n))}$								0.45

Note. CA: Canada; CW: Curacao; DO: Dominican Republic; JP: Japan; KR: Korea; MX: Mexico; PR: Puerto Rico; US: United States of America

In addition to the effects of nationalities, cultural similarities and differences of team members can affect team performance. Similar to calculations of the mean cultural distances of a European football team (Maderer et al., 2014) based on Euclidian distance (Wagner et al., 1984), the distance between the focal individual and the average of all other team players was calculated, as shown in Table 3 (e.g.,

O'Reilly et al., 1989; Tsui et al., 1992). For multicultural teams, the cultural distance was calculated as described by Kogut and Singh (1988) in the following steps:

Based on nationality, each player was assigned a value for each of the four Hofstede's dimensions (j): power distance, individualism, uncertainty avoidance, and masculinity (Kogut & Singh, 1988). The cultural distance between each player (k) and each of his teammates (l) based on Hofstede's values was calculated as the mean squared Euclidean distance:

$$I_{k,l} = \sum_{j=1}^4 (I_{j,k} - I_{j,l})^2$$

The cultural distances of all players on a team were calculated by adding all the values on that team and dividing the sum by the number of distance relationships ($n \times (n - 1)$), multiplying by the four cultural dimensions, and determining the square root:

$$\text{Cultural distance} = \sqrt{\frac{\sum_{k,l=1}^n I_{k,l}}{n \times (n - 1) \times 4}}$$

Table 3

Exemplary calculation of cultural distance for Washington Nationals

Player	1: DE	2: DO	3: MX	5: US	6: VE
1: DE	0	2670	3783	978	5311
2: DO	2670	0	1641	4356	1605
3: MX	3783	1641	0	6347	376
5: US	978	4356	6347	0	8783
6: VE	5311	1605	376	8783	0

Note. DE: Germany; DO: Dominican Republic; MX: Mexico; US: United States; VE: Venezuela

As an extension of the cultural distance, collectivism based on the individualism score of each player relative to each other team member was calculated based on Hofstede's values. The values for all players on a team were added, and the sum divided by the number of players on a team using the individualism/collectivism scores of Hofstede's dimensions. To assess the effects of collectivism, the value for each team was subtracted from 100 because individualism is (100-x). Thus, a value of 0 indicated maximum individualism and a value of 100 indicated maximum collectivism.

$$\text{Matching between players and market} = \sum_{x=1}^n (P_i X_i)$$

For each MLB team per season, P is the proportion of players, X is the proportion of the population, and n is the number of races including White, Latino, Black, Asian, and others. Previous study by Tainsky and Winfree (2010) did not find any significant results from investigating the effects of players from specific countries on demand. However, this study analyzed the matching congruence of market population and team composition regarding the high ethnic diversity in both MLB teams and its market the corresponding MSA.

Figure 5

Instagram followers of National League players at the team level in 2019-2020

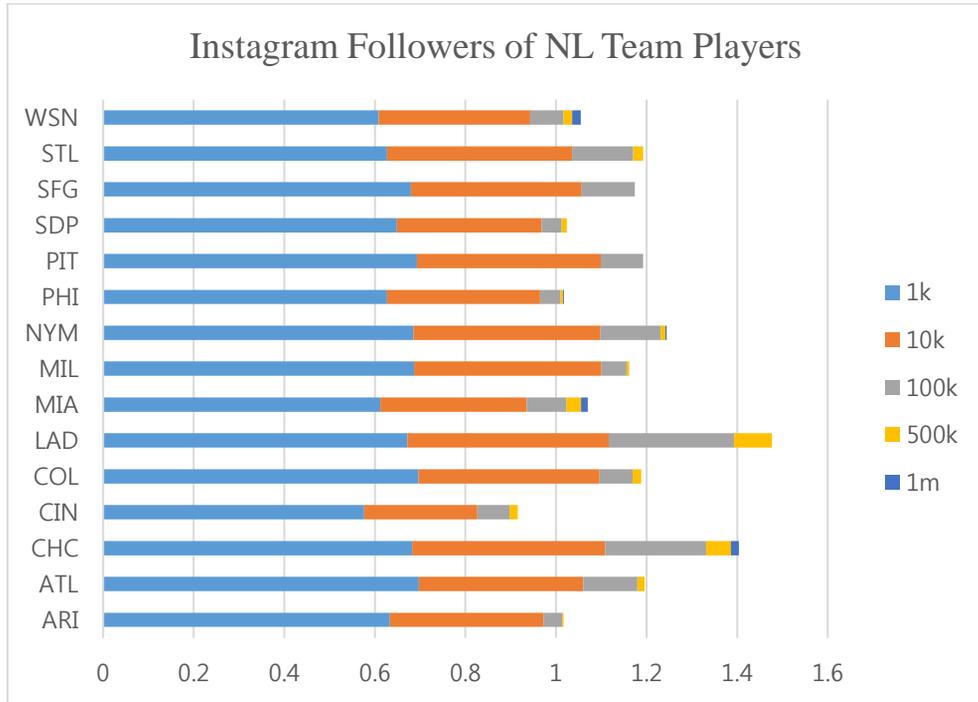


Figure 6

Instagram followers of American League players at the team level in 2019-2020

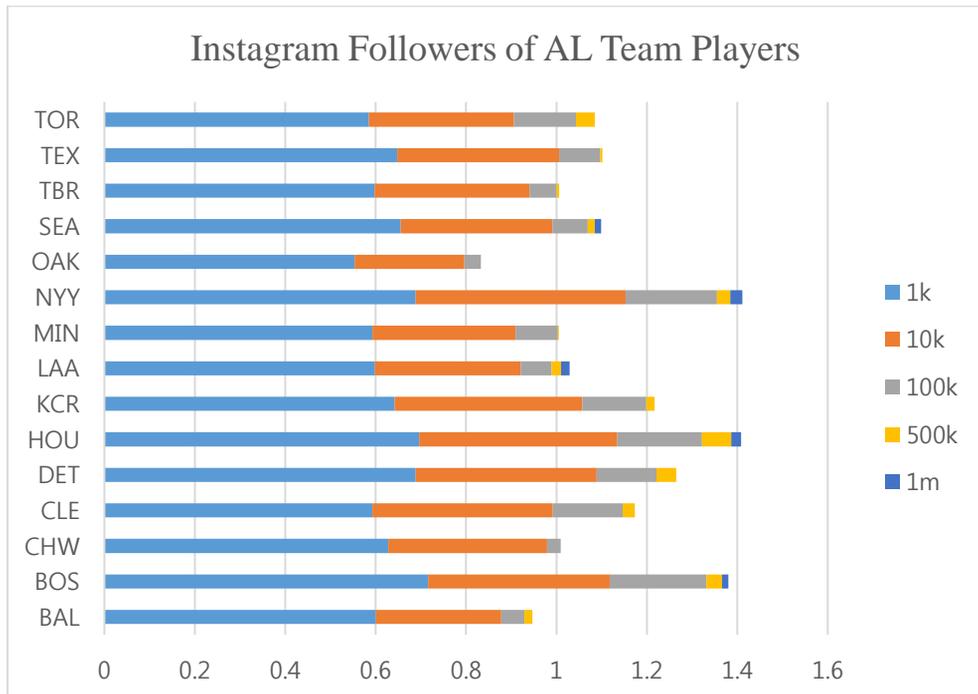


Figure 7

Twitter followers of National League players by team in 2019-2020

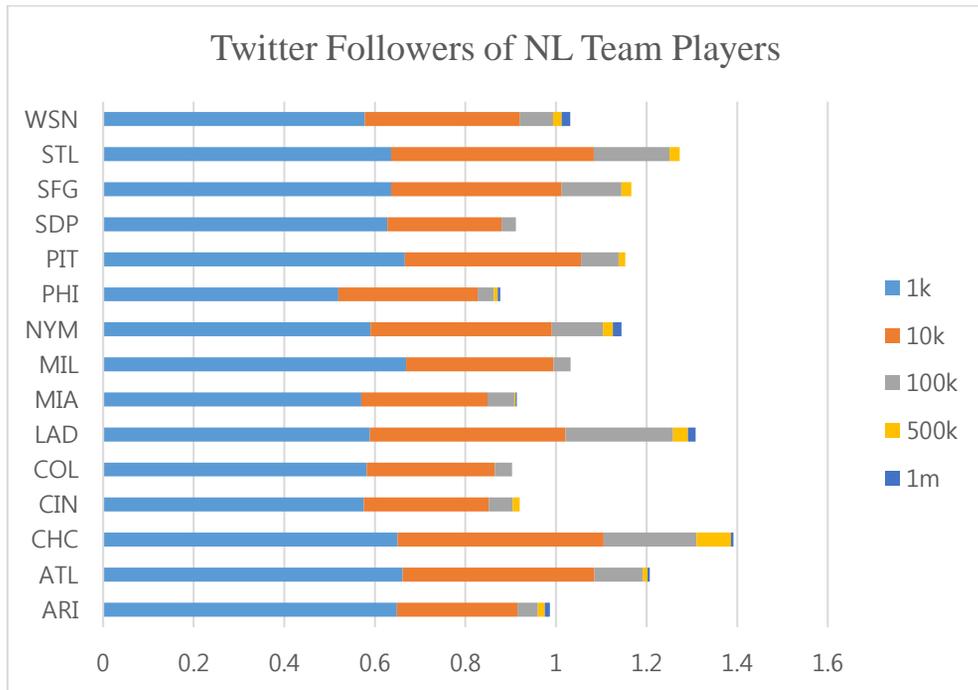
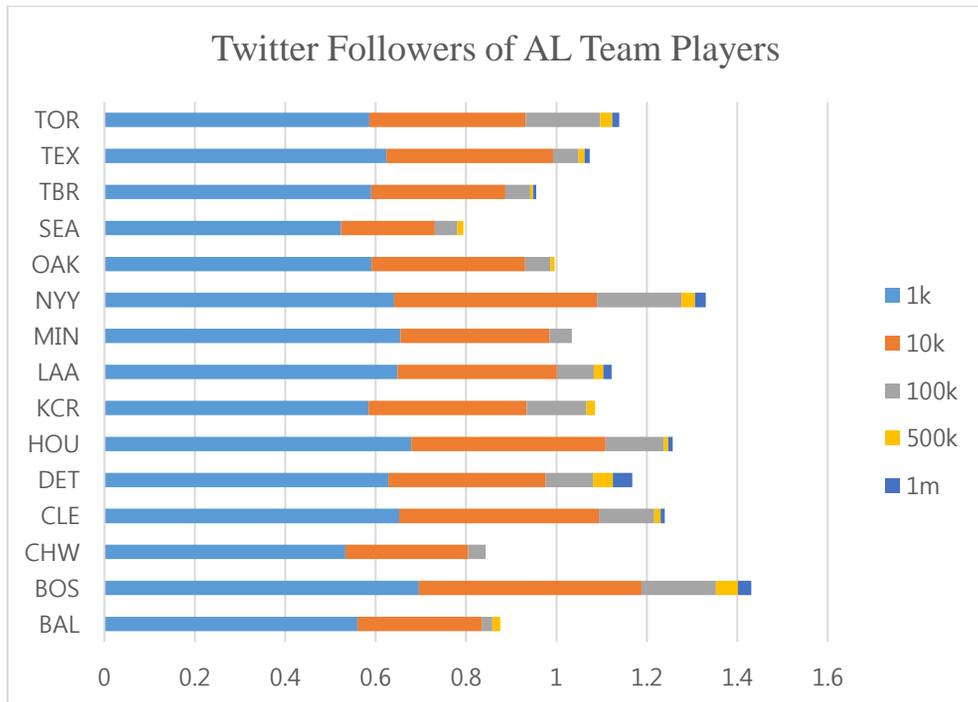


Figure 8

Twitter followers of American League players by team in 2019-2020



Data and Empirical Specification

Production functions in sport

To analyze the possible effects of player diversity on team-level production in the MLB, the following general model is employed:

$$\begin{aligned} & \textit{Team Performance}_{it} \\ & = f(\textit{player skills}_{it}, \textit{managerial ability}_{it}, \textit{player diversity}_{it}) \end{aligned}$$

based on team i and season t , respectively. The team performance in a given season is a function of the collective skills of the team's players, the abilities of the team's managers to effectively organize and direct the workers, and the degree of cultural diversity amongst the players. The key variable is the level of player diversity on a team while player skills and managerial ability are the control variables. The primary factor inputs at the most basic and fundamental level of using win production functions within the sport context are playing talent and manager's ability (Kahane et al., 2013; Kwack & Lee, 2015; Scully, 1974).

Dependent variables

One of the dependent variables is the winning percentage of a MLB team ($\textit{Win \%}_{it}$) during the regular season. Scully (1974) modeled the win percentage of baseball clubs, computed as the number of wins divided by 162 (the number of regular season games). The main reason for using the winning percentage of regular-season games is because it is the best way to make the playoffs and win the World Series, which is the ultimate goal of most MLB teams. In addition, the home team's winning percentage correlates significantly with attendance (Davis, 2008; Glass, 2003).

The certainty of the home team winning is very important related to spectator attendance at MLB games (Rivers & DeSchriver, 2002). Another dependent variable employed is the attendance ($Attendnace_{it}$), which measures average attendance of team i in a season t . It has long served as a primary source of revenue for team stadiums. Additionally, logs are taken of attendance, population, and payroll because such variables are strictly positive and do not represent a percentage and improve the linearity between dependent and independent variables as well as validity.

Control variables

Because team performance at the team level was likely related to the collective ability of the team, the latter was controlled for using the following variables entered into the model for $Win\%_{it}$:

Market size was included to control for economic effects on the performance of MLB teams (Bloom, 1999). Based on baseball data from 1990s, market size was positively and significantly related to expected team performance (Burger & Walters, 2003). Moreover, the average value of players in big market teams is six times that of players in small market teams.

Coach Win % is an assessment of the ability/input of the team manager, determined by measuring the manager's career win percentage, excluding the current season (Fort, Lee, & Berri, 2008). Rookie managers with no career win percentage were assigned a value equal to the average of all previous rookie managers in the data set. The inclusion of this term was based on the assumption that better managers have a positive effect on a team's performance, other things

being equal (Kahane et al., 2013). However, previous studies have found that field managers have very limited influence on MLB team performance (Smart & Wolfe, 2003; Smart, Winfree, & Wolfe, 2008).

Coach Experience or number of years of managing MLB teams is a control variable for managing ability (Fort et al., 2008; Maderer et al., 2014). Because managing abilities play a role in every team and some managers had no previous MLB managing experience, managing experience is a key variable representing managing ability. Both managing experience and winning percentage were included in this empirical study as control variables.

Age diversity is measured at the team level determining the age of each player on the last day of the regular season based on the birthday of each player. This control variable was calculated by determining the coefficient of variation, defined as the standard deviation divided by the mean (Allison, 1978).

Average Total Team Payroll was included to account for spending advantages in MLB, with the yearly payroll of each team compared with the average yearly payroll in that league (Kahane et al., 2013, Szymanski, 2000). This variable assumes that an individual player's salary reflects his talents. Using a payroll approach, it was possible to measure a team's overall talent and may have the potential to include skills that are difficult to measure, such as a player's leadership skills and mentoring abilities. Thus, teams with relatively greater payrolls may reflect greater skill and would likely lead to a relatively better performance.

However, there is also a possibility of disadvantage to using relative payrolls because sometimes player salaries may not accurately indicate playing skills (Kahane et al., 2013).

The variables entered in the model for *attendnace_{it}* are as follows:

Population is the logged value of the MSA population of the MLB home team's city from U.S. Census Bureau data and it is to control for economic effects on the winning percentage of MLB organization (Tainsky & Winfree, 2010) and median household *Income* of a team's home city is also taken from the U.S. Census Bureau (2019).

New Stadium indicates a new stadium that was in its first year of use. It is included in the model to control for the increased demand attributable to the improved features (novelty effect) of new stadiums (McDonald & Rascher, 2000; Tainsky & Winfree, 2010).

Stadium capacity is the indicative of how many seating capacity the stadium could accommodate (McDonald & Rascher, 2000). This data came from stadium information provided on the official MLB website for each season.

Franchise age is the number of years the franchise has been in its current city, which intends to control an increased fan base for teams' longevity in the same city (Coates & Harrison, 2005; Tainsky & Winfree, 2010).

Pro team or teams in MSA is the number of additional professional sport teams sharing a given team's market. Past study of MLB teams has shown that teams in the same city can be substitutes for each other, meaning that the influence of close substitutes for each team's demand is supposed to have a negative effect.

Focus variables

Cultural diversity represents the number of international players from different countries on a team (Alesina et al., 2016; Kahane et al., 2013; Maderer et al., 2014; Sakuda, 2012; Timmerman, 2000) and is calculated using the heterogeneity index (Teachman, 1980).

Cultural distance is the mean cultural distance of a multicultural team, based on Euclidian distance (Wagner et al., 1984) and calculated using the index of Kogut and Singh (1988).

Ethnic/Racial diversity is the degree of racial (White, Latino, Black, Asian, mixed race) heterogeneity within a team and was measured at the team level using the heterogeneity index (Teachman, 1980).

Matching is calculated by a simple aggregation of the player proportion of each team from a given country and the proportion of the corresponding MSA population (Osborne, 2006; Tainsky & Winfree, 2010).

Diagnostic tests showed that the data set in the present study met all the assumptions of OLS regression analysis. The regression model estimated team performance and demand using the following equation:

$$\begin{aligned} &Win\%_{it} \\ &= \alpha + \beta_1(Marketsize_{it}) + \beta_2(CoachExp_{it}) + \beta_3(AgeSD_{it}) + \beta_4 \ln(Payroll_{it}) \\ &+ \beta_5(NationalDiversity_{it}) + \beta_5(RacialDiversity_{it}) + \beta_6(CulturalDistance_i) \\ &+ \beta_6(CultVsUS_i) + \beta_6(Collectivism_i) + \varepsilon_{it} \end{aligned}$$

$$\begin{aligned} &\ln(Attendance)_{it} \\ &= \alpha + \beta_1(Win\%_{it}) + \beta_3 \ln(Population_{it}) + \beta_4 \ln(StadNew_{it}) + \beta_5(StadCap_{it}) \\ &+ \beta_6(FranchiseAge_{it}) + \beta_7(ForeignPlayer_{it}) + \beta_8(AsianPlayer_{it}) \\ &+ \beta_9(SNSpopularity_i) + \beta_{10}(Matching_{it}) + \varepsilon_{it} \end{aligned}$$

Table 4*Descriptive Statistics*

Variable	Obs	Mean	Std. Dev.	Min	Max
Win	210	.5	.076	.29	.667
Big market	210	.299	.459	0	1
Small market	210	.398	.491	0	1
CoachWin	210	.501	.051	.315	.667
CoachExp	210	7.801	6.197	1	25
AgeSD	210	3.717	.476	2.466	4.904
National diversity	210	.453	.087	.224	.654
Racial diversity	210	.23	.033	.148	.305
CultureDistance	210	22857.74	4540.286	9224.887	41078.526
CultDistance2US	210	18837.893	4104.524	6076.854	32234.176
Collectivism	210	26.993	4.694	15.02	43.795
lnAttendance	210	14.653	.29	13.606	15.195
lnPopulation	210	8.334	.713	7.244	9.843
lnPayroll	210	4.686	.4	3.091	5.609
StadiumNew	210	.005	.069	0	1
StadiumCapacity	210	42786.838	5023.682	31042	56000
FranchiseAge	210	66.545	37.03	8	136
ProTeaminthe city	210	.533	.5	0	1
Foreign portion	210	.307	.14	0	.667
MatchingRace	210	.316	.084	0	.508

Table 5*Matrix of Correlations for Cultural Heterogeneity Variables*

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) WL%	1.000									
(2) CoachWin	0.516	1.000								
(3) CoachExp	0.067	0.173	1.000							
(4) lnPayroll	0.277	0.548	0.150	1.000						
(5) AgeSD	0.260	0.165	-0.121	0.266	1.000					
(6) HetNation	-0.043	0.004	-0.134	0.053	0.224	1.000				
(7) HetRace	0.277	0.288	0.001	0.254	0.225	0.466	1.000			
(8) Collectivism	-0.137	-0.124	-0.083	0.014	0.109	0.818	0.348	1.000		
(9) CultureDist	-0.051	-0.013	-0.048	-0.077	-0.091	-0.447	-0.213	-0.498	1.000	
(10) Cult2US	-0.025	0.177	-0.104	0.141	0.059	0.078	-0.016	-0.250	0.484	1.000

Table 6*Matrix of Correlations for Cultural Congruence Variables*

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) lnAtt	1.000								
(2) Win%	0.448	1.000							
(3) lnPop	0.319	0.094	1.000						
(4) StadNew	0.019	-0.052	0.026	1.000					
(5) StadCap	0.523	0.119	0.378	-0.024	1.000				
(6) FrAge	0.148	0.020	-0.004	-0.029	-0.077	1.000			
(7) Foreign	-0.030	-0.025	0.098	0.096	0.111	0.233	1.000		
(8) Asian	0.337	0.171	0.192	0.109	0.338	0.070	0.261	1.000	
(9) MatRace	-0.010	-0.046	-0.200	-0.261	-0.132	-0.255	-0.200	-0.069	1.000

Results

Team Diversity on Performance

Table 4 shows descriptive statistics of variables related to team performance and fan demand, including their means, minima, maxima, and SDs, with Table 5 showing item matrix correlations for cultural heterogeneity. The Breusch-Pagan test for heteroscedasticity, providing the chi-square test statistic with degrees of freedom when the null hypothesis of no heteroscedasticity was satisfied, showed that the null hypothesis was not rejected. These results indicated that the subsequent regression models were unrelated to heteroscedasticity.

The results of this empirical study support the first hypothesis, which predicted that increased national diversity of a team will be negatively related to team performance during a season. Table 6 shows the results of the six regression analyses. Model 1 estimated national diversity based on payroll, manager's ability, and age difference. Only the manager's career winning percentage and age difference were significantly correlated with the team's winning percentage. Managing experience of head coach and team payroll were not significant in any of the models.

Diversity indices are added respectively for cultural diversity, and cultural distance to the USA. In model 6, national diversity has a negative significant relationship to the dependent variable win percentage at 5%, providing a support that homogeneous teams would perform better. In other words, higher

concentration of nation or country is better than having players from many different countries. However, racial diversity is positively significant related to team performance at 10% in model 5 and 1% in model 6, providing a support that more diverse ethnic group is better in terms of team performance possibly due to a different set of skills or strengths genetically. Overall, teams consisting of mostly homogenous American players with different ethnicity appear to gain an advantage in team performance.

Table 7*OLS regressions of Cultural Diversity*

VARIABLES	Model(1) Win%	Model(2) Win%	Model(3) Win%	Model(4) Win%	Model(5) Win%	Model(6) Win%
lnPayroll	-0.0108 (-0.773)	-0.00939 (-0.674)	-0.0116 (-0.827)	-0.00953 (-0.688)	-0.0132 (-0.948)	-0.00954 (-0.612)
Coexperience	0.00759 (0.162)	0.00787 (0.169)	0.0114 (0.243)	0.00247 (0.0530)	0.00993 (0.213)	-0.0107 (-0.226)
CoachWin%	0.772*** (7.261)	0.750*** (6.977)	0.779*** (7.286)	0.806*** (7.554)	0.741*** (6.880)	0.738*** (6.720)
AgeSD	0.0333*** (3.396)	0.0319*** (3.309)	0.0298*** (3.086)	0.0304*** (3.189)	0.0272*** (2.802)	0.0323*** (3.236)
Big market						-0.00201 (-0.154)
Small market						0.00386 (0.340)
Nationality	-0.137 (-1.490)					-0.254** (-2.462)
Collectivism		-0.153 (-1.606)				
CulturalDistance			-0.000520 (-0.534)			
CultDistance2US				-0.00225** (-2.085)		-0.00179 (-1.652)
Ethnicity					0.261* (1.843)	0.431*** (2.605)
Constant	0.0727 (1.170)	0.0895 (1.374)	0.0631 (0.954)	0.0697 (1.152)	0.0279 (0.458)	0.0535 (0.649)
Observations	210	210	210	210	210	210
R-squared	0.308	0.309	0.301	0.315	0.312	0.345
Adj.R-squared	0.291	0.292	0.284	0.298	0.295	0.316

t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Cultural Distance and Degree of Interdependence

Multivariate regression analysis also included assessment of the potential multicollinearity of the data. All variance inflation factors (VIF) were below 1.7 and therefore below the critical value of 10 (Cohen, Cohen, and Aiken, 2013), showing that there were no multicollinearity concerns. Cultural distance had a negative but not significant relationship to team performance in model 3, whereas cultural distance to the USA showed a significant negative relationship to team winning percentage ($p < 0.05$) in model 3 (Table 6). The results support the hypothesis that teams culturally closer to the US were likely to have a higher winning percentage.

Model 2 showed that collectivism had a negative impact on team winning percentage, supporting the hypothesis that a higher team collectivism score would be negatively associated with team performance due to the lower interdependence of baseball. Because managing ability plays a role in every team in the league, a manager's career win record was positively and significantly associated with team performance ($p < 0.01$) in models 4, 5, and 6. Again, age diversity was positively correlated with team performance in all six models (Table 6).

Because model 3 found that the coefficient of cultural distance was negative but not statistically significant, cultural distance to the USA was included. This was supported by the results of model 4, with the regression coefficient being significant ($p < 0.05$). Both cultural distance to the US and collectivism had significant and negative effects on team performance. In other words, being closer to USA culture and higher individualism scores were associated with a higher team

winning percentage.

The manager's career winning percentage showed significant positive effects on team performance ($p < 0.01$) in all six models (Table 6). In contrast, team payroll, the manager's experience, and market size were unrelated to team performance.

Cultural Congruence between Team and Market

All models showed statistically significant while the majority of the control variables are in the expected direction in the model. Winning percentage, stadium capacity, and franchise age were all positive and significant at 1% in all models in Table 8. In addition, new stadium is also positively significant at 10% in model 3 and 4. The portion of foreign players came out to be negative and significant at 1% in model 1 and 4, which is the similar pattern as national diversity having a negative effect on team performance. Interestingly, Asian players show positive and significant results at 10% and 5% respectively in model 2 and 4. It is possible that Asian had the most influence since the number of minority group has the smallest population compared to White, Latino, and Black in the country.

For the focus variable of interest, race matching variable was found to be significant and positive on attendance at 1% in models 3, and 4, providing support for the hypothesis that markets with higher portions of their racial demographics matching the team's racial demographics would lead to a positive impact on attendance. Additionally, the portion of Asian players on a team increased demand in models 2 and 4. The overall results show that the portion of foreign players in teams have a negative effect on demand as found in models 1 and 4. However, the

positive significant findings on the race matching variable indicate that the increase in attendance is associated with fans wanting to see the players with similar race, particularly Asians.

Table 8*OLS regressions of Race Matching on Attendance*

VARIABLES	Model(1) lnAttend	Model(2) lnAttend	Model(3) lnAttend	Model(4) lnAttend
Win%	1.482*** (7.441)	1.385*** (7.048)	0.963*** (4.430)	0.998*** (4.665)
lnPopulation	0.0460** (2.054)	0.0466** (2.131)	0.00550 (0.234)	0.0158 (0.677)
StadiumNew	0.218 (1.014)	0.220 (1.039)	0.180 (0.880)	0.352* (1.677)
StadCapacity	0.0259*** (8.089)	0.0247*** (7.540)	0.0251*** (7.929)	0.0260*** (8.333)
FranchiseAge	0.00138*** (3.449)	0.00161*** (3.984)	0.00120*** (2.983)	0.00151*** (3.682)
ForeignPlayer		-0.348*** (-3.157)	-0.343*** (-3.215)	-0.308*** (-2.923)
AsainPlayer		0.974** (2.409)	0.833** (2.124)	0.747* (1.934)
SNSpopularity			0.00217*** (3.966)	0.00212*** (3.950)
MatchRace				0.525*** (2.890)
Constant	12.33*** (60.71)	12.50*** (60.14)	12.96*** (55.88)	12.62*** (49.29)
Observations	210	210	210	210
R-squared	0.470	0.502	0.538	0.557
Adj. R-squared	0.457	0.485	0.520	0.537

t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Robustness Check

To make sure that the current study captured the effect of cultural diversity on team performance, and racial congruence on demand, this study conducted the following robustness tests. Table 9 reports results of the main model for team heterogeneity and performance using year dummies.

The main findings of fan demand are robust as Table 10 presents the main results of race matching on attendance by including the win percent from the previous season to check its robustness. One of the reasons to use the winning percentage of the during the previous season is to control for fan expectations around the season opening. This may pick up any habitual nature of fans such as season ticket holders. The results of Table 10 show the similar pattern as in Table 8 the initial results.

Table 9*OLS regressions of Cultural Diversity using Year Dummy*

VARIABLES	Model(1) Win%	Model(2) Win%	Model(3) Win%	Model(4) Win%
lnPay	-0.0170 (-0.970)	-0.0161 (-0.921)	-0.0149 (-0.851)	-0.0159 (-0.907)
Coex	0.0141 (0.284)	0.0156 (0.315)	0.00879 (0.178)	0.0136 (0.275)
CoachW	0.771*** (6.875)	0.748*** (6.573)	0.814*** (7.229)	0.756*** (6.698)
AgeSD	0.0370*** (3.403)	0.0354*** (3.309)	0.0351*** (3.308)	0.0315*** (2.939)
Big market	0.0108 (0.836)	0.0107 (0.824)	0.00681 (0.528)	0.00216 (0.160)
Small market	0.00747 (0.637)	0.00656 (0.559)	0.00652 (0.559)	0.00607 (0.517)
Nationality	-0.148 (-1.563)			
Collectivism		-0.160 (-1.638)		
CultDist2US			-0.00241** (-2.144)	
Ethnicity				0.263* (1.740)
Constant	0.0730 (0.854)	0.0925 (1.043)	0.0572 (0.690)	0.00121 (0.0141)
Year	YES	YES	YES	YES
Observations	210	210	210	210
R-squared	0.317	0.318	0.324	0.319
Adj. R-squared	0.271	0.272	0.279	0.274

t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 10*Race Matching on Attendance with Win Percentage from the Previous Season*

VARIABLES	Model(1) lnAttend	Model(2) lnAttend	Model(3) lnAttend	Model(4) lnAttend
Win%	1.037*** (4.612)	1.013*** (4.532)	1.030*** (4.703)	1.010*** (4.628)
Win(t-1)	0.856*** (3.560)	0.785*** (3.249)	0.917*** (3.903)	0.854*** (3.605)
lnPopulation	0.0506** (2.351)	0.0484** (2.262)	0.0618*** (2.914)	0.0594*** (2.810)
StadiumNew	0.307 (1.479)	0.258 (1.244)	0.508** (2.418)	0.458** (2.167)
StadCapacity	0.0257*** (8.271)	0.0240*** (7.507)	0.0265*** (8.739)	0.0251*** (7.984)
FranchiseAge	0.00154*** (3.886)	0.00152*** (3.841)	0.00189*** (4.729)	0.00185*** (4.645)
Foreign	-0.234** (-2.185)	-0.285** (-2.599)	-0.195* (-1.852)	-0.239** (-2.217)
AsianPlayer		0.778* (1.946)		0.659* (1.680)
MatchRace			0.634*** (3.453)	0.605*** (3.298)
Constant	12.15*** (60.24)	12.29*** (57.84)	11.76*** (51.81)	11.90*** (49.63)
Observations	210	210	210	210
R-squared	0.518	0.527	0.545	0.551
Adj. R-squared	0.501	0.508	0.527	0.531

t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Discussion and Conclusions

Discussion

Diversification of team composition in professional sports brings an outstanding template to examine the effects of cultural diversity on team performance. Many professional sports teams have already tapped into international labor pools to maximize their players of talent, which led to higher cultural diversity on teams. Despite the decreased number of African-American players, MLB has the highest diversity than any other major North American sport including players from USA, Canada, Latin America, Asia, Australia, and Europe. This provides tremendous potential for cross-cultural research in sports management.

MLB still confronts the issue of waned participation within the game of baseball from underprivileged/low-income youth, especially African-American youth (Lapchick, 2019). With such motivation, this current study contributes to cross-cultural team research within organizational research. By uncovering cross-cultural difference between MLB teams, this study was able to examine different types of diversity and team outcomes unlike business teams where it is difficult to find diversity and performance measures.

The purpose of this study was to explore and analyze the relationship between multicultural team composition and team outcome (i.e., cultural heterogeneity and team performance; ethnic congruence between team and market demographics; SNS popularity and demand). Several types of diversity were analyzed, including

country of origin, ethnicity, age, and culture distance). Empirical evidence has suggested that international/national diversity has a negative effect on team performance compared with teams having a more homogeneous composition. These findings indicate that MLB teams perform better when players tend to come from the same country. Teams consisting of only domestic American players seemed generally more highly skilled than teams with international players from multiple countries. These findings support the notion that cultural differences and communication costs are factors associated with diversity.

Assessments of the relationship between ethnic diversity and team performance support the hypothesis that more ethnically diversified teams are likely to have higher winning percentage. Considering the multi-racial culture of America, this is a meaningful finding because the league has been challenged by a lack of African American players and fan base. Despite the previous initiatives and investments for building its relationship with the African-American community, there is still more that MLB can do because they have a control of how to market its games and use its promotional communication opportunities.

Among the different ethnic groups, only the Asian portion led to a significantly positive impact on attendance. This result is quite interesting as the number of Asian players have increased along with Latino players unlike African American players in MLB. For example, past study showed that Korean American fans perceived their ethnic identity and community in relation to Korean player's performance and presence in their home team (Shin et al., 2019). Based on this result of self-categorization as an individual of Korean descent, the current study's positive result of Asian players might indicate the ethnic Asian community's stronger sense of belonging to their ethnic group.

Age diversity within a team had a significant positive effect on team performance, indicating that teams consisting of mixtures of older, more experienced players and younger, less experienced players perform better. Timmerman (2000), for example, argued that demographic characteristics such as age and race are still in good use despite the assumption that raw demographic variables are not as reliable than underlying value diversity. However, Timmerman (2000) showed that age and racial diversity were only related to basketball performance in the 1981 to 1997 time period and no significance at all in baseball performance unlike the current study. Although, the existing research had some discrepancies for the relationships between age diversity and performance, the current study showed that it is an important demographic characteristic in professional baseball. Age difference was included as a control variable because of its linear relationship with experience as well as leadership. The positive relationship between age standard deviation and team winning percentage in this study suggests that greater age diversity was associated with a better mixture of younger and more experienced players. From 2013 to 2019, MLB players were aged between 19 and 45 years, an interval greater than in most other professional team sports.

Cultural distance to the USA was the most important factor associated with team performance, perhaps due to the large number of domestic American players on each team. Individualism score from Hofstede's dimensions was 91 in the United States, one of the highest scores, whereas China has a score of 20. Thus, having a large number of players from individualistic countries may result in better team chemistry because communications among individualistic individuals are open and direct, with a free flow of information (Hofstede, 2001). Thus, the current cross-

cultural study confirmed that higher collectivism score was negatively associated with team performance in baseball, a sport with lower interdependence than other team sports.

The coach/manager's career winning percentage had a significant positive effect on team performance, suggesting that the intrinsic ability of the manager was positively correlated with team performance. That is, the manager plays a critical role in team performance. However, the role of coach in winning production is a phenomenon still lack of understanding because it is difficult to separate their contributions from the abilities of the players they coach.

This empirical study has a unique finding that matching market population of demographics and team demographics in race had positive and significant effects on demand. The results attribute the increase in attendance associated with the attractiveness of similar race between market and team demographics. Similarly, Burdekin (2005) also found a positive relationship between matching of the team's racial composition and the racial composition of the market area and home game-attendance revenue from 1990 to 1999. However, there was no evidence in such relationship during the 1980s for the NBA using black and white players and population (McCormick & Tomllison, 2001). In the case of matching nationalities from using the similar data set as ethnicities, the matching of team and market population demographics for nationality was not significant.

SNS popularity, based on SNS followers, in the context of professional sports was first examined in the current study. The positive and significant results of SNS followers on attendance proved its current status and influence on people's interaction, communication, and engagement. These social media platforms, Twitter and Instagram, play a key role in facilitating greater outreach and influence

because it forms connections with other SNS users, which can be used to grow relationships online and offline. One of the differences between the two social media sites was that Twitter is more effective among American players and Instagram for International players possibly due to language barriers.

Limitations

This study had several limitations, which must be considered in determining the generalizability of the results. Because this cross-cultural study used secondary data collected from various types of available sources, information on ethnic backgrounds was not available for several players. It was especially difficult to categorize some of the multi-racial players who lacked background information. Another limitation was the data unavailability in Hofstede's data base for some countries including the Bahamas, Cuba, Nicaragua, and the Virgin Islands, all of which were searched manually. Studies are needed to measure cultural diversity on a player level as well as interaction processes within teams.

Regarding the analysis of fan demand through regular season attendance, most of the variables that were examined in this study were related to the home team, not the opponent. The current study was not able to afford to include other variables that have both practically and statistically significant effects on attendance. For example, temperature had a positive effect on attendance, which is practically understandable (Smith & Groetzinger, 2010). They also estimated the effect of promotions, but admitted the lack of availability of sufficient data.

Another potential limitation is not including the price of tickets, which is the obvious predictor of attendance. Unfortunately, there is no accurate way of

estimating this variable because the prices vary from seat to seat, and close seats are way more costly than seats in the higher sections. Additionally, there are more complications as ticket prices for the same seat can fluctuate from day to day, people can purchase tickets from different platforms as well as re-sale tickets, and tickets can be earned through promotions or give away for free. Therefore, although tickets prices are excluded in this study, the data would not be reliable and unlikely to impact attendance as price differences do not vary noticeably.

There is an area for improvement upon the data collection of MLB players' SNS follower numbers. It was quite challenging to record the number of every player's Twitter and Instagram followers manually. As a result, because the process was done manually and hand collected, it took a long time and was difficult to cross check for accuracy and change. While the two platforms are very popular and good for measuring the player's popularity, YouTube is another platform that has become more popular in recent years.

Considering the continuously increasing portion of TV revenue in MLB, the usage of attendance may be limited due to the fact that attendance is linked to gate revenue. Also, using the attendance as a fan demand variable may not be perfect so TV ratings is another possible demand variable to use. However, among many forms of easy-access media, consumption of media has grown from watching TV and listening to the radio, to using a smartphone at any place at any time. Especially, social networking services (SNS) have been a popular option for media consumption such as Twitter and Instagram as shown in appendix. It has grown significantly in America from only 5 percent of Americans using services in 2005, increased to 50 percent of Americans by 2011, and up to 70 percent in 2018 (Pew Research Center, 2019).

Future Directions

Future research should consider measuring cultural diversity on a player level as well as interaction processes within teams. In addition, future study can measure cultural values on an individual level and interaction processes for trust building, team cohesion, or team activities off the field. Another future direction is to have a closer evaluation on the impact of language on team outcome because communication costs are common factor when dealing with cultural diversity. Ingersoll et al. (2017) used “linguistic distance” to measure team heterogeneity on team performance by using Automated Similarity Judgement Program (ASJP) calculation for soccer teams. This linguistic distance is similar to the cultural distance of current study in a sense of measuring the association between diversity and team performance.

The findings from the current study have provided interesting sources and results that should be investigated further such as identifying the star power of players based in SNS popularity. The positive correlation between the number of player’s Twitter and Instagram followers and attendance in this study provides a theoretical framework for future direction on defining star power. Future study may consider applying other media outlets besides Instagram and Twitter.

What distinguishes MLB from other professional sports leagues is their farm system called Minor League Baseball. This process can be problematic for players from multicultural background because they can face challenges regarding diversity in a predominantly white sport. Additionally, diversity is an important factor in how minority players adjust to playing professional baseball. Hence, it is

necessary that MLB increases the awareness of diversity throughout the organizational assimilation process. Managers within organizations and the front office of MLB must continue to explore new ways that would allow them to be both profitable and ethical in order to attract African-American community (Freeman et al., 2010). Again, MLB commissioner's office needs to expand the sport more innovatively and aggressively in order to change its image of 'white sport' to racially proportional sport.

Regarding the issue of racial variation especially in selection of coaches, only few studies exist for evaluating the level of talent across coaches and their career wins. Because the current study only used the coaching winning percentage and experience while racial issue still exists in the professional team sport coaches today, the race and retention issues are available for future study.

For practical future implication related to demand and popularity, targeting new demographics such as women and younger generation, two groups that did not exactly flock to baseball in recent past or longer, seems like a reasonable future strategy. Recently, both national ratings such as ESPN and regional local channels seen the increases from the new demographics possibly under the influence of COVID-19 pandemic. According to Nielsen in August 2020, females and males 18-24 years old have driven most of the overall viewing increases while females 18-24 were up 41 percent going from 40,000 to 56,000 viewers.

Most popular athletes have numerous Instagram and Twitter followers and MLB became the first league to have all 30 teams on Instagram while the players' Instagram follower have grown over 50 percent. Instagram influencer/star marketing has been the fastest growing trends in advertising. The key concept here is the influencer/star's ability to foster parasocial relationships with their followers.

However, MLB stars are not online a lot compared to NBA or NFL. One of the MLB stars mentioned that “We need to be more vocal online and let the fans see the personal side us” from the ESPN interview in 2020. Nowadays, it seems apparent that social media effect is greater in developing the avidity of fans & need for interaction (Broughton, 2012). Using social media to bring attention of fans would be an important strategic contribution from the league’s perspective. The current study suggests that MLB players use the social media platforms more actively to engage with fans and inspire them.

Conclusions

This cross-cultural study assessed the relationships of cultural heterogeneity and player diversity on MLB team performance, along with cultural congruence and demand in professional baseball. This study provided several intriguing empirical findings about the negative effects of national diversity and the positive effects of ethnic diversity on team performance. In addition, age diversity and the manager’s winning percentage during previous years had positive and significant effects on baseball team performance during the years 2013 to 2019. Another significant contribution is related to the role of coaches as the career win percentage of head coach reveals a positive effect on team performance.

This study examined the association of cultural diversity with team performance in professional baseball, a multicultural sport. The current study offers unbiased empirical data by statistically separating the effect of talent from diversity, which can be difficult to examine in other organizations or business teams. As expected, key findings showed that national diversity may lead to lower team performance,

suggesting that teams would benefit from greater national homogeneity of their rosters. In contrast, high ethnic diversity may lead to better team performance, suggesting that teams would benefit from greater ethnic diversity of their rosters.

The matching of team and market/population demographics for ethnicity was found to be significant especially the portion of Asian players. It is quite meaningful that the findings on the matching variable indicate that fans want to see those similar ethnic players on their team. To the best of author's knowledge, this is the first study to examine SNS popularity by collecting each MLB player's both Instagram and Twitter followers' number in the context of professional sports, which showed positive and significant effects on fan demand.

Researchers and practitioners should consider the findings when planning cross-cultural research. Previous cross-cultural research focusing on ethnicity has failed to pay serious attention to cultural differences among subgroups (e.g., Cuban Hispanics versus Mexican Hispanics). Thus, it is meaningful that the current study integrated broad demographic ethnic categories of Whites, Hispanics, Blacks, and Asians with each other by calculating cultural distances based on countries. Positive relationships between diversity and performance have been observed in global professional soccer, including the UEFA Championships League Tournament (Ingersoll et al., 2017). Thus professional baseball still has a long way to go in terms of cross-border exchange and subsequent globalization.

As global professional soccer already is, past study showed clear and straightforward results that there is a positive relationship between diversity and performance on the world's biggest stage like the UEFA Championships League Tournament (Ingersoll et al., 2017). Such results remind us that professional baseball still has a long way to go in terms of cross-border exchange and

subsequently globalization. Since multicultural teams have become more prevalent in every advanced economies, understanding how cultural diversity and ethnic diversity can affect their team performances is highly important. At the end of the day, sports is the best option because it can build a bridge across race, culture, and even countries.

References

- Adler, M. (1985). Stardom and talent. *The American Economic Review*, 75(1), 208-212.
- Ahn, S. C., & Lee, Y. H. (2014). Major League Baseball attendance: Long-term analysis using factor models. *Journal of Sports Economics*, 15(5), 451-477.
- Alesina, A., Harnoss, J., & Rapoport, H. (2016). Birthplace diversity and economic prosperity. *Journal of Economic Growth*, 21(2), 101-138.
- Allison, P. D. (1978). Measures of inequality. *American Sociological Review*, 43(6), 865-880.
- Anderson, T., & La Croix, S. J. (1991). Customer discrimination in major league baseball. *Economic Inquiry*, 29(4), 665-677.
- Anderson, S. M. (2016). *Diversity Outreach in Major League Baseball: A Stakeholder Approach* [Doctoral dissertation, West Virginia University]. The Research Repository. <http://researchrepository.wvu.edu/etd/5102>
- Anderson, S. M., & Martin, M. M. (2019). The African American community and professional baseball: Examining Major League Baseball's corporate social-responsibility efforts as a relationship-management strategy. *International Journal of Sport Communication*, 12(3), 397-418.
- Ashforth, B. E., & Mael, F. (1989). Social identity theory and the organization. *Academy of Management Review*, 14(1), 20-39.
- Baade, R. A., & Tiehen, L. J. (1990). An analysis of major league baseball attendance, 1969-1987. *Journal of Sport and Social Issues*, 14(1), 14-32.
- Barney, J. B. (1986). Strategic factor markets: Expectations, luck, and business strategy. *Management Science*, 32(10), 1231-1241.

- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99-120.
- Becker, G. S. (2010). *The economics of discrimination*. Chicago, IL: University of Chicago press.
- Bell, S. T. (2007). Deep-level composition variables as predictors of team performance: a meta-analysis. *Journal of Applied Psychology*, 92(3), 595-615.
- Blau, P. M. (1977). *Inequality and heterogeneity: A primitive theory of social structure* (Vol. 7). New York, NY: Free Press.
- Bloom, M. (1999). The performance effects of pay dispersion on individuals and organizations. *Academy of Management Journal*, 42(1), 25-40.
- Bloom, N., Genakos, C., Sadun, R., & Van Reenen, J. (2012). Management practices across firms and countries. *Academy of Management Perspectives*, 26(1), 12-33.
- Bodet, G., & Chanavat, N. (2010). Building global football brand equity. *Asia Pacific Journal of Marketing and Logistics*, 22(1), 55-66.
- Borland, J., & MacDonald, R. (2003). Demand for sport. *Oxford Review of Economic Policy*, 19(4), 478-502.
- Broughton, D. (2012, July 16). *Survey: Social media continues to fuel fans*.
<https://www.sportsbusinessdaily.com/Journal/Issues/2012/07/16/In-Depth/Catalyst-Survey.aspx>
- Brown, M. (2019, October 4). *From terrible teams to rising costs: Why MLB attendance is down over 7% since 2015*.
<https://www.forbes.com/sites/maurybrown/2019/10/04/from-terrible-teams-to-rising-costs-and-more-why-mlb-attendance-has-been-down-over-7-since->

- Burdekin, R. C., & Idson, T. L. (1991). Customer preferences, attendance and the racial structure of professional basketball teams. *Applied Economics*, 23(1), 179-186.
- Burdekin, R. C., Hossfeld, R. T., & Smith, J. K. (2005). Are NBA fans becoming indifferent to race? Evidence from the 1990s. *Journal of Sports Economics*, 6(2), 144-159.
- Burger, J. D., & Walters, S. J. (2003). Market size, pay, and performance: A general model and application to Major League Baseball. *Journal of Sports Economics*, 4(2), 108-125.
- Coates, D., & Harrison, T. (2005). Baseball strikes and the demand for attendance. *Journal of Sports Economics*, 6(3), 282-302.
- Cohen, S. G., & Bailey, D. E. (1997). What makes teams work: Group effectiveness research from the shop floor to the executive suite. *Journal of Management*, 23(3), 239-290.
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2013). *Applied multiple regression/correlation analysis for the behavioral sciences*. Mahwah, NJ: Routledge.
- Cox, T. H., Lobel, S. A., & McLeod, P. L. (1991). Effects of ethnic group cultural differences on cooperative and competitive behavior on a group task. *Academy of Management Journal*, 34(4), 827-847.
- Crook, T. R., Ketchen Jr, D. J., Combs, J. G., & Todd, S. Y. (2008). Strategic resources and performance: A meta-analysis. *Strategic Management Journal*, 29(11), 1141-1154.
- Davis, M. C. (2008). The interaction between baseball attendance and winning

- percentage: A VAR analysis. *International Journal of Sport Finance*, 3(1), 58-73.
- Devine, D. J., & Phillips, J. L. (2001). Do smarter teams do better? A meta-analysis of cognitive ability and team performance. *Small Group Research*, 32, 507–532.
- Drogendijk, R., & Slangen, A. (2006). Hofstede, Schwartz, or managerial perceptions? The effects of different cultural distance measures on establishment mode choices by multinational enterprises. *International Business Review*, 15(4), 361-380.
- Earley, C. P., & Mosakowski, E. (2000). Creating hybrid team cultures: An empirical test of transnational team functioning. *Academy of Management Journal*, 43(1), 26-49.
- Earley, P. C., & Gibson, C. B. (2002). *Multinational work teams: A new perspective*. Mahwah, NJ: Routledge.
- Elk, M. & Moreno, K. (2018, March 29). *Baseball, Latino America's pastime, Faces new challenges in age of Trump*.
<https://www.theguardian.com/sport/2018/mar/29/baseball-latino-trump-mlb>
- Fisher, E. (2019). *MLB ends '19 regular season at 16-year attendance low*.
<https://www.sportbusiness.com/news/mlb-ends-19-regular-season-at-16-year-attendance-low/>
- Fiske, S. T. (1998). Stereotyping, prejudice, and discrimination. *The Handbook of Social Psychology*, 2(4), 357-411.
- Fort, R., & Gill, A. (2000). Race and ethnicity assessment in baseball card markets. *Journal of Sports Economics*, 1(1), 21-38.
- Fort, R., Lee, Y. H., & Berri, D. (2008). Race, technical efficiency, and retention:

- The case of NBA coaches. *International Journal of Sport Finance*, 3(2), 84.
- Fortunato, J. A., & Williams, J. D. (2014). Using Marketing Theory to Increase African-American Participation with Major League Baseball. *Out of Bounds: Racism and the Black Athlete* (pp. 55-80). Santa Barbara, CA: Praeger.
- Freeman, R. E., Harrison, J. S., Wicks, A. C., Parmar, B., & de Colle, S. (2010). *Stakeholder theory: The state of the art*. Cambridge, MA: Cambridge University Press.
- Gibson, C. B. (1999). Do they do what they believe they can? Group efficacy and group effectiveness across tasks and cultures. *Academy of Management Journal*, 42(2), 138-152.
- Glass, D. B. (2003). Fair-weather fans: The correlation between attendance and winning percentage. *Baseball Research Journal*, 32, 81-84.
- Gluch, P., & Baumann, H. (2004). The life cycle costing (LCC) approach: A conceptual discussion of its usefulness for environmental decision-making. *Building and Environment*, 39(5), 571-580.
- Gmelch, G. (Ed.). (2006). *Baseball without borders: The international pastime*. Lincoln, NE: University of Nebraska Press.
- Godfrey, M., Kim, J., Eluère, M., & Eys, M. (2020). Diversity in cultural diversity research: a scoping review. *International Review of Sport and Exercise Psychology*, 13(1), 128-146.
- Gundlach, M., Zivnuska, S., & Stoner, J. (2006). Understanding the relationship between individualism–collectivism and team performance through an integration of social identity theory and the social relations model. *Human Relations*, 59(12), 1603-1632.
- Gwartney, J., & Haworth, C. (1974). Employer costs and discrimination: The case

- of baseball. *Journal of Political Economy*, 82(4), 873-881.
- Haas, H., & Nüesch, S. (2012). Are multinational teams more successful?. *The International Journal of Human Resource Management*, 23(15), 3105-3113.
- Han, C. M. (1989). Country image: halo or summary construct?. *Journal of Marketing Research*, 26(2), 222-229.
- Harrison, D. A., & Klein, K. J. (2007). What's the difference? Diversity constructs as separation, variety, or disparity in organizations. *Academy of Management Review*, 32(4), 1199-1228.
- Hitt, M. A., Keats, B. W., & DeMarie, S. M. (1998). Navigating in the new competitive landscape: Building strategic flexibility and competitive advantage in the 21st century. *The Academy of Management Executive*, 12(4), 22-42.
- Hoang, H., & Rascher, D. (1999). The NBA, exit discrimination, and career earnings. *Industrial Relations: Journal of Economy and Society*, 38(1), 69-91.
- Hofstede, G. (1984). *Culture's consequences: International differences in work-related values* (Vol. 5). Newbury Park, London: Sage Publications.
- Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions and organizations across nations*. London: Sage Publications.
- Hogg, M. A. (2016). Social identity theory. In *Understanding peace and conflict through social identity theory* (pp. 3-17). Switzerland: Springer, Cham.
- Hong, S. T., & Wyer Jr, R. S. (1989). Effects of country-of-origin and product-attribute information on product evaluation: An information processing perspective. *Journal of Consumer Research*, 16(2), 175-187.
- Horwitz, S. K., & Horwitz, I. B. (2007). The effects of team diversity on team outcomes: A meta-analytic review of team demography. *Journal of*

Management, 33(6), 987-1015.

Ingersoll, K., Malesky, E., & Saiegh, S. M. (2017). Heterogeneity and team performance: Evaluating the effect of cultural diversity in the world's top soccer league. *Journal of Sports Analytics*, 3(2), 67-92.

Jackson, S. E., Joshi, A., & Erhardt, N. L. (2003). Recent research on team and organizational diversity: SWOT analysis and implications. *Journal of Management*, 29(6), 801-830.

Jehn, K. A., Northcraft, G. B., & Neale, M. A. (1999). Why differences make a difference: A field study of diversity, conflict and performance in workgroups. *Administrative Science Quarterly*, 44(4), 741-763.

Jehn, K. A., & Bezrukova, K. (2004). A field study of group diversity, workgroup context, and performance. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 25(6), 703-729.

Johnson, L. M., Choi, K. H., Kim, E., Pitts, B. G., & Zhang, J. J. (2019). Globalized sport management in diverse cultural contexts: An Introduction. In *Globalized Sport Management in Diverse Cultural Contexts* (pp. 1-26). Routledge.

Jones, M. B. (1974). Regressing group on individual effectiveness. *Organizational Behavior and Human Performance*, 11(3), 426-451.

Joshi, A., & Roh, H. (2009). The role of context in work team diversity research: A meta-analytic review. *Academy of Management Journal*, 52(3), 599-627.

Kahane, L., Longley, N., & Simmons, R. (2013). The effects of coworker heterogeneity on firm-level output: assessing the impacts of cultural and language diversity in the National Hockey League. *Review of Economics and*

- Statistics*, 95(1), 302-314.
- Kahn, L. M. (2000). The sports business as a labor market laboratory. *Journal of Economic Perspectives*, 14(3), 75-94.
- Kahn, L. M., & Sherer, P. D. (1988). Racial differences in professional basketball players' compensation. *Journal of Labor Economics*, 6(1), 40-61.
- Kankanhalli, A., Tan, B. C., & Wei, K. K. (2006). Conflict and performance in global virtual teams. *Journal of Management Information Systems*, 23(3), 237-274.
- Kassimeris, C. (2011). Black, Blanc and Beur: French Football's 'Foreign Legion'. *Journal of Intercultural Studies*, 32(1), 15-29.
- Keidell, R. W. (1987). Team sports models as a generic organizational framework. *Human Relations*, 40(9), 591-612.
- Kelly, W. W. (2007). Is baseball a global sport? America's 'national pastime as global field and international sport. *Global Networks*, 7(2), 187-201.
- Kihl, L., Babiak, K., & Tainsky, S. (2014). Evaluating the implementation of a professional sport team's corporate community involvement initiative. *Journal of Sport Management*, 28(3), 324-337.
- Klein, A. M. (2006). *Growing the game: The globalization of major league baseball*. Yale University Press. doi: 10.1080/14660970701811032
- Klein, A. (2008). Globalizing sport: Assessing the World Baseball Classic. *Soccer & Society*, 9(2), 158-169.
- Knouse, S. B. (2006). Task cohesion: A mechanism for bringing together diverse teams. *International Journal of Management*, 23(3), 588.
- Kogut, B., & Singh, H. (1988). The effect of national culture on the choice of entry mode. *Journal of International Business Studies*, 19(3), 411-432.

- Kwack, M., & Lee, Y. H. (2015). Effects of management practices on productivity: Evidence from team production in Korean baseball. *산업조직연구*, 23(3), 31-57.
- Lapchick, R. (2019, April 15). *The 2019 racial and gender report card: Major League Baseball*. The Institute for Diversity and Ethics in Sport.
<https://www.tidesport.org/racial-gender-report-card>
- Lattimer, R. L. (1998). The case for diversity in global business, and the impact of diversity on team performance. *Competitiveness Review*, 8(2), 3-17.
- Lazear, E. P. (1999). Globalization and the market for team-mates. *The Economic Journal*, 109(454), 15-40.
- Lewis, H. F., Sexton, T. R., & Lock, K. A. (2007). Player salaries, organizational efficiency, and competitiveness in major league baseball. *Journal of Sports Economics*, 8(3), 266-294.
- Leifer, E. (2009). *Making the majors: The transformation of team sports in America*. Cambridge, MA: Harvard University Press.
- Maderer, D., Holtbrügge, D., & Schuster, T. (2014). Professional football squads as multicultural teams: Cultural diversity, intercultural experience, and team performance. *International Journal of Cross Cultural Management*, 14(2), 215-238.
- Maguire, J. (1990). More than a sporting touchdown: The making of American football in England 1982–1990. *Sociology of Sport Journal*, 7(3), 213-237.
- Mannix, E., & Neale, M. A. (2005). What differences make a difference? The promise and reality of diverse teams in organizations. *Psychological science in the public interest*, 6(2), 31-55.
- Martinez, D., & Mukhatji, P. B. (Eds.). (2013). *Football: from England to the*

World. Abingdon, OX: Routledge.

Masteralexis, L., Barr, C., & Hums, M. (Eds.). (2011). *Principles and practice of sport management*. Sudbury, MA: Jones & Bartlett Publishers.

McCormick, R. E., & Tollison, R. D. (2001). Why do black basketball players work more for less money?. *Journal of Economic Behavior & Organization*, 44(2), 201-219.

McDonald, M., & Rascher, D. (2000). Does bat day make cents? The effect of promotions on the demand for Major League Baseball. *Journal of Sport Management*, 14(1), 8-27.

McLeod, P. L., Lobel, S. A., & Cox Jr, T. H. (1996). Ethnic diversity and creativity in small groups. *Small Group Research*, 27(2), 248-264.

Meeussen, L., Schaafsma, J., & Phalet, K. (2014). When values (do not) converge: Cultural diversity and value convergence in work groups. *European Journal of Social Psychology*, 44(6), 521-528.

Miller, S. (2018, August 20). *'I Find It Very Difficult' to watch: Why MLB greats think baseball's in trouble*.

<https://bleacherreport.com/articles/2791455-i-find-it-very-difficult-to-watch-why-mlb-greats-think-baseballs-in-trouble>

Moreland, R. L., Levine, J. M., & Wingert, M. L. (2013). Creating the ideal group: Composition effects at work, *Understanding Group Behavior* (Vol. 2, pp. 11-35). New York, NY: Psychology Press.

Morry, M. M. (2005). Relationship satisfaction as a predictor of similarity ratings: A test of the attraction-similarity hypothesis. *Journal of Social and Personal Relationships*, 22(4), 561-584.

Müller, M., & Müller, M. (2009). *Football as a paradox of modernity*. Zur

- bedeutung ethnischer, nationaler und geschlechtlicher differenzen im profifußball*. Wiesbaden, Germany: VS Verlag.
- O'Reilly III, C. A., Caldwell, D. F., & Barnett, W. P. (1989). Work group demography, social integration, and turnover. *Administrative Science Quarterly*, 21-37.
- Osborne, E. (2006). Baseball's International Division of Labor. *Journal of Sports Economics*, 7(2), 150-167.
- Ozanian, M. & Badenhausen, K (2019, April, 10). *Baseball team values 2019: Yankees lead league at \$4.6 Billion*.
<https://www.forbes.com/sites/mikeozanian/2019/04/10/baseball-team-values-2019-yankees-lead-league-at-46-billion/?sh=649a351569b2>
- Paletz, S. B., Peng, K., Erez, M., & Maslach, C. (2004). Ethnic composition and its differential impact on group processes in diverse teams. *Small Group Research*, 35(2), 128-157.
- Pedace, R. (2008). Earnings, performance, and nationality discrimination in a highly competitive labor market as an analysis of the English professional soccer league. *Journal of Sports Economics*, 9(2), 115-140.
- Pelled, L. H. (1996). Demographic diversity, conflict, and work group outcomes: An intervening process theory. *Organization Science*, 7(6), 615-631.
- Pew Research Center. (2019, June 12). *Demographics of social media users and adoption in the United States*.
<https://www.pewresearch.org/internet/factsheet/socialmedia/>
- Phinney, J. S. (1996). Understanding ethnic diversity: The role of ethnic identity. *American Behavioral Scientist*, 40(2), 143-152.
- Preston, I., & Szymanski, S. (2000). Racial discrimination in English

- football. *Scottish Journal of Political Economy*, 47(4), 342-363.
- Rivers, D. H., & Deschriver, T. D. (2002). Star players, payroll distribution, and Major League Baseball attendance. *Sport Marketing Quarterly*, 11(3), 164-174.
- Roberge, M. É., & Van Dick, R. (2010). Recognizing the benefits of diversity: When and how does diversity increase group performance?. *Human Resource Management Review*, 20(4), 295-308.
- Rowe, D., & Gilmour, C. (2010). Sport, media, and consumption in Asia: A merchandised milieu. *American Behavioral Scientist*, 53(10), 1530-1548.
- Royuela, V., & Gásquez, R. (2019). On the Influence of foreign players on the success of football clubs. *Journal of Sports Economics*, 20(5), 718-741.
- Sakuda, K. H. (2012). National diversity and team performance in low interdependence tasks. *Cross Cultural Management: An International Journal*, 19(2), 125-141.
- Schinke, R. J., Blodgett, A. T., McGannon, K. R., & Parham, W. D. (2014). Cultural diversity within group dynamics in sport. *Group Dynamics in Sport and Exercise Psychology*, 319-334.
- Scully, G. W. (1974). Pay and performance in major league baseball. *The American Economic Review*, 64(6), 915-930.
- Shin, N. R., Welty Peachey, J., & Park, D. J. (2019). Exploring ethnic identity perceptions of Hyun-Jin Ryu's Korean American fans. *International Review for the Sociology of Sport*, 54(7), 855-872.
- Smart, D., Winfree, J., & Wolfe, R. (2008). Major League Baseball managers: Do they matter?. *Journal of Sport Management*, 22(3), 303-321.
- Smart, D. L., & Wolfe, R. A. (2003). The contribution of leadership and human

- resources to organizational success: An empirical assessment of performance in Major League Baseball. *European Sport Management Quarterly*, 3(3), 165-188.
- Smith, E. E., & Groetzinger, J. D. (2010). Do fans matter? The effect of attendance on the outcomes of Major League Baseball games. *Journal of Quantitative Analysis in Sports*, 6(1), 1192-1220.
- Speidell, L. S., Miller, D. H., & Ullman, J. R. (1989). Portfolio optimization: A primer. *Financial Analysts Journal*, 22-30.
- Stodolska, M., Sharaievska, I., Tainsky, S., & Ryan, A. (2014). Minority youth participation in an organized sport program: Needs, motivations, and facilitators. *Journal of Leisure Research*, 46(5), 612-634.
- Sun, Z. (2015). Brief probe into the brand and marketing strategy of NBA. *Asian Social Science*, 11(16), 183.
- Szymanski, S. (2000). A market test for discrimination in the English professional soccer leagues. *Journal of Political Economy*, 108(3), 590-603.
- Tainsky, S., & Winfree, J. A. (2010). Discrimination and demand: The effect of international players on attendance in Major League Baseball. *Social Science Quarterly*, 91(1), 117-128.
- Tajfel, H. (1981). *Human groups and social categories: Studies in social psychology*. Cambridge, UK: Cambridge University Press.
- Tajfel, H. (1982). Social psychology of intergroup relations. *Annual Review of Psychology*, 33(1), 1-39.
- Teachman, J. D. (1980). Analysis of population diversity: Measures of qualitative variation. *Sociological Methods & Research*, 8(3), 341-362.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic

- management. *Strategic Management Journal*, 18(7), 509-533.
- Timmerman, T. A. (2000). Racial diversity, age diversity, interdependence, and team performance. *Small Group Research*, 31(5), 592-606.
- Tsui, A. S., & O'Reilly III, C. A. (1989). Beyond simple demographic effects: The importance of relational demography in superior-subordinate dyads. *Academy of Management Journal*, 32(2), 402-423.
- Tsui, A. S., Egan, T. D., & O'Reilly III, C. A. (1992). Being different: Relational demography and organizational attachment. *Administrative Science Quarterly*, 37(4), 549-579.
- Turner, J. C. (1987). *Rediscovering the social group: A self-categorization theory*. Cambridge, MA: Basil Blackwell.
- Van Knippenberg, D., De Dreu, C. K., & Homan, A. C. (2004). Work group diversity and group performance: An integrative model and research agenda. *Journal of Applied Psychology*, 89(6), 1008.
- Van Vianen, A. E., De Pater, I. E., Kristof-Brown, A. L., & Johnson, E. C. (2004). Fitting in: Surface-and deep-level cultural differences and expatriates' adjustment. *Academy of Management Journal*, 47(5), 697-709.
- Wagner, W. G., Pfeffer, J., & O'Reilly III, C. A. (1984). Organizational demography and turnover in top-management group. *Administrative Science Quarterly*, 29(1), 74-92.
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5(2), 171-180.
- Wiersema, M. F., & Bird, A. (2017). Organizational demography in Japanese firms: Group heterogeneity, individual dissimilarity, and top management team turnover. *Academy of Management Journal*, 36(5), 996-1025.

- Williams, K., & O'Reilly, C. (1998). The complexity of diversity: A review of forty years of research. *Research in Organizational Behavior*, 21(1), 77-140.
- Wilson, D. P., & Ying, Y. H. (2003). Nationality preferences for labor in the international football industry. *Applied Economics*, 35(14), 1551-1559.
- Winfrey, J. A., McCluskey, J. J., Mittelhammer, R. C., & Fort, R. (2004). Location and attendance in major league baseball. *Applied Economics*, 36(19), 2117-2124.
- Wolken, D. (2018, July 17). *Soccer could be more popular than baseball when World Cup comes to the U.S. in 2026.*
<https://www.usatoday.com/story/sports/2018/07/17/world-cup-could-soccer-surpass-baseball-popularity-2026-all-star-game/789223002/>
- Zhang, J. J., Kim, E., Mastromartino, B., Qian, T. Y., & Nauright, J. (2018). The sport industry in growing economies: critical issues and challenges. *International Journal of Sports Marketing and Sponsorship*, 19(2), 110-126.

Appendices

Appendix A:

Number of 30 MLB Team Full Rosters (N=210)

Team/Year	2013	2014	2015	2016	2017	2018	2019
ARI	44	52	50	50	45	49	45
ATL	44	39	60	60	49	58	50
BAL	52	44	48	47	50	56	58
BOS	48	55	51	50	49	44	47
CHC	56	48	50	45	47	50	52
CHW	47	44	40	50	51	51	47
CIN	39	45	50	52	47	53	47
CLE	49	46	49	48	41	49	54
COL	43	49	51	47	41	41	50
DET	39	48	47	44	49	49	53
HOU	50	48	46	43	46	41	45
KCR	43	48	46	42	49	49	51
LAA	49	54	51	53	55	60	57
LAD	49	49	55	55	52	52	46
MIA	53	45	51	53	43	51	50
MIL	40	40	49	50	50	53	50
MIN	44	48	44	49	52	54	50
NYM	53	45	49	46	52	56	53
NYG	56	58	56	53	51	49	54
OAK	44	45	52	51	54	53	49
PHI	51	49	50	49	51	48	56
PIT	49	45	46	55	47	48	54
SDP	47	51	46	58	52	49	54
SEA	47	44	51	54	61	53	67
SFG	44	46	48	45	49	48	64
STL	44	46	46	41	48	49	43
TBR	42	43	51	48	53	54	57
TEX	46	64	57	52	51	50	53
TOR	53	55	52	49	60	63	61
WSN	44	40	44	43	49	53	50

Appendix B:

Number of Countries for the National League Teams

	ARI13	ARI14	ARI15	ARI16	ARI17	ARI18	ARI19
Full	6	6	7	6	5	6	5
Top12	3	3	3	2	2	4	3
	ATL13	ATL14	ATL15	ATL16	ATL17	ATL18	ATL19
Full	6	6	9	6	9	10	8
Top12	4	4	4	4	6	5	6
	CHC13	CHC14	CHC15	CHC16	CHC17	CHC18	CHC19
Full	6	7	7	7	9	8	7
Top12	3	4	2	3	3	4	4
	CIN13	CIN14	CIN15	CIN16	CIN17	CIN18	CIN19
Full	8	8	6	8	6	7	6
Top12	4	4	5	4	5	5	5
	COL13	COL14	COL15	COL16	COL17	COL18	COL19
Full	6	6	4	3	3	5	6
Top12	3	2	4	2	2	3	3
	LAD13	LAD14	LAD15	LAD16	LAD17	LAD18	LAD19
Full	8	8	8	11	9	9	7
Top12	5	4	3	4	3	4	4
	MIA13	MIA14	MIA15	MIA16	MIA17	MIA18	MIA19
Full	6	8	10	9	8	8	8
Top12	4	5	5	6	4	3	4
	MIL13	MIL14	MIL15	MIL16	MIL17	MIL18	MIL19
Full	7	6	5	4	6	7	8
Top12	5	3	3	3	3	3	2
	NYM13	NYM14	NYM15	NYM16	NYM17	NYM18	NYM19
Full	6	7	7	6	6	6	7
Top12	2	3	3	4	3	3	3
	PHI13	PHI14	PHI15	PHI16	PHI17	PHI18	PHI19
Full	8	8	7	8	8	7	6
Top12	3	3	4	4	4	5	3
	PIT13	PIT14	PIT15	PIT16	PIT17	PIT18	PIT19
Full	6	6	5	4	6	7	10
Top12	3	3	5	4	3	3	4
	SDP13	SDP14	SDP15	SDP16	SDP17	SDP18	SDP19
Full	7	6	5	8	5	6	6
Top12	2	5	4	3	3	3	2
	SFG13	SFG14	SFG15	SFG16	SFG17	SFG18	SFG19
Full	6	5	6	5	4	3	6
Top12	4	4	3	3	2	2	4
	STL13	STL14	STL15	STL16	STL17	STL18	STL19
Full	5	7	5	8	7	8	8
Top12	2	3	3	5	5	5	3
	WSN13	WSN14	WSN15	WSN16	WSN17	WSN18	WSN19
Full	7	4	6	4	5	4	5
Top12	2	1	3	2	2	2	4

Number of Countries for the American League Teams

	BAL13	BAL14	BAL15	BAL16	BAL17	BAL18	BAL19
Full	7	4	8	6	7	5	5
Top12	2	3	4	2	3	4	3
	BOS13	BOS14	BOS15	BOS16	BOS17	BOS18	BOS19
Full	10	9	8	7	7	6	7
Top12	4	5	5	4	3	3	5
	CHW13	CHW14	CHW15	CHW16	CHW17	CHW18	CHW19
Full	8	6	7	7	7	7	5
Top12	4	4	6	5	4	4	4
	CLE13	CLE14	CLE15	CLE16	CLE17	CLE18	CLE19
Full	8	8	10	6	7	6	7
Top12	4	4	4	4	4	6	4
	DET13	DET14	DET15	DET16	DET17	DET18	DET19
Full	5	4	6	8	8	8	5
Top12	3	3	4	4	2	4	3
	HOU13	HOU14	HOU15	HOU16	HOU17	HOU18	HOU19
Full	7	5	4	5	7	5	6
Top12	5	2	3	3	4	4	4
	KCR13	KCR14	KCR15	KCR16	KCR17	KCR18	KCR19
Full	8	9	8	9	8	8	7
Top12	5	3	4	4	3	3	3
	LAA13	LAA14	LAA15	LAA16	LAA17	LAA18	LAA19
Full	4	5	4	8	7	10	7
Top12	2	2	3	4	5	5	5
	MIN13	MIN14	MIN15	MIN16	MIN17	MIN18	MIN19
Full	7	6	5	8	5	5	7
Top12	4	3	4	4	5	5	5
	NYY13	NYY14	NYY15	NYY16	NYY17	NYY18	NYY19
Full	6	8	8	10	8	8	10
Top12	5	5	5	7	4	6	7
	OAK13	OAK14	OAK15	OAK16	OAK17	OAK18	OAK19
Full	7	7	5	9	9	6	9
Top12	4	3	2	3	3	4	5
	SEA13	SEA14	SEA15	SEA16	SEA17	SEA18	SEA19
Full	8	7	8	8	10	9	7
Top12	5	5	4	7	4	5	3
	TBR13	TBR14	TBR15	TBR16	TBR17	TBR18	TBR19
Full	5	6	7	6	7	8	7
Top12	3	1	3	2	1	4	6
	TEX13	TEX14	TEX15	TEX16	TEX17	TEX18	TEX19
Full	10	8	8	8	10	8	6
Top12	5	5	5	4	6	5	4
	TOR13	TOR14	TOR15	TOR16	TOR17	TOR18	TOR19
Full	6	6	7	5	8	8	6
Top12	3	4	3	4	2	4	5

Appendix C:

Foreign-Born Players, 1950, 1970, 2002, 2020

	<i>1950</i>	<i>1970</i>	<i>2002</i>	<i>2020</i>
Aruba	0	0	2	1
Australia	0	0	3	2
Canada	6	7	10	13
Colombia	0	0	3	10
Cuba	0	24	11	30
Dominican Republic	9	16	74	152
Germany	0	0	2	3
Japan	0	0	11	7
Korea	0	0	2	4
Mexico	2	6	18	15
Netherland	0	0	2	1
Nicaragua	0	0	2	4
Panama	0	8	7	7
Puerto Rico	1	23	38	28
Taiwan	0	0	1	7
Venezuela	1	11	38	100

Source: Osborne (2006); baseball-reference.com; baseball-almanac.com

Appendix D:

Metropolitan Statistical Area Matching List

MLB Clubs	Metropolitan
Arizona Diamondbacks	Phoenix-Mesa-Glendale, AZ
Atlanta Braves	Atlanta-Sandy Springs-Marietta, GA
Baltimore Orioles	Baltimore-Towson, MD
Boston Red Sox	Boston-Cambridge-Quincy, MA-NH
Chicago Cubs	Chicago-Joliet-Naperville, IL-IN-WI
Chicago White Sox	Chicago-Joliet-Naperville, IL-IN-WI
Cincinnati Reds	Cincinnati-Middletown, OH-KY-IN
Cleveland Indians	Cleveland-Elyria-Mentor, OH
Colorado Rockies	Colorado Springs, CO
Detroit Tigers	Detroit-Warren-Livonia, MI
Houston Astros	Houston-Sugar Land-Baytown, TX
Kansas City Royals	Kansas City, MO-KS
Los Angeles Angels of Anaheim	Los Angeles-Long Beach-Santa Ana, CA
Los Angeles Dodgers	Los Angeles-Long Beach-Santa Ana, CA
Miami Marlins	Miami-Fort Lauderdale-Pompano Beach, FL
Milwaukee Brewers	Milwaukee-Waukesha-West Allis, WI
Minnesota Twins	Minneapolis-St. Paul-Bloomington, MN-WI
New York Mets	New York-Northern New Jersey-Long Island, NY-NJ-PA
New York Yankees	New York-Northern New Jersey-Long Island, NY-NJ-PA
Oakland Athletics	San Francisco-Oakland-Fremont, CA
Philadelphia Phillies	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD
Pittsburgh Pirates	Pittsburgh, PA
San Diego Padres	San Diego-Carlsbad-San Marcos, CA
Seattle Mariners	San Francisco-Oakland-Fremont, CA
San Francisco Giants	Seattle-Tacoma-Bellevue, WA
St. Louis Cardinals	St. Louis, MO-IL
Tampa Bay Rays	Tampa-St. Petersburg-Clearwater, FL
Texas Rangers	Dallas-Fort Worth-Arlington, TX
Toronto Blue Jays	.
Washington Nationals	Washington-Arlington-Alexandria, DC-VA-MD-WV

Note. Toronto Blue Jays has been omitted due to its location in Canada.

Appendix E:

Number of Professional Sports Teams by League

City	MLB	NFL	NBA	NHL
Atlanta Braves	1	1	1	
Baltimore Orioles	1	1		
Boston Red Sox	1	1*	1	1
Chicago Cubs/White Sox	2	1	1	1
Cincinnati Reds	1	1		
Cleveland Indians	1	1	1	
Dallas/Texas Rangers	1	1	1	1
Denver/Colorado Rockies	1	1	1	1
Detroit Tigers	1	1	1	1
Houston Astros	1	1	1	
Kansas City Royals	1	1		
Los Angeles Angels/Dodgers	2	2	2	2
Miami Marlins	1	1	1	1*
Milwaukee Brewers	1	1	1	
Minnesota Twins	1		1	1
New York Mets/Yankees	2	2	2	3*
Oakland Athletics	1	1	1	
Philadelphia Phillies	1	1	1	1
Phoenix/Arizona Diamondbacks	1	1	1	1
Pittsburgh Pirates	1	1		1
San Diego Padres	1	1		
San Francisco Giants	1	1		
Seattle Mariners	1	1		
St. Louis Cardinals	1	1		1
Tampa Bay Rays	1	1		1
Toronto Blue Jays	1	1	1	1
Washington Nationals	1	1	1	1

Note. *The stadiums for the New England Patriots, Florida Panthers, and New Jersey Devils are located within 40 miles from the city.

Appendix F:

Racial/Ethnic Makeup of Sports Leagues TV Audiences

Leagues	White	Black	Hispanic
MLB	83%	9%	9%
NBA	40%	45%	12%
NHL	92%	3%	2%
PGA	87%	7%	3%
MLS	65%	8%	34%

Note. Which Sports Have the Whitest/Richest/Oldest Fans? *The Atlantic*.

Appendix G:

MLB Fields/Parks/Stadiums

Team	Field Name	Capacity	Opening	Domed
Arizona Diamondbacks	Chase Field	48,633	1998	Y
Atlanta Braves	Turner Field	49,743	1997	
Baltimore Orioles	Oriole Park	45,971	1992	
Boston Red Sox	Fenway Park	37,493	1912	
Chicago Cubs	Wrigley Field	41,159	1914	
Chicago White Sox	Guaranteed Rate Field	40,615	1991	
Cincinnati Reds	Great American Ball Park	42,319	2003	
Cleveland Indians	Progressive Field	35,000	1994	
Colorado Rockies	Coors Field	50,445	1995	
Detroit Tigers	Comerica Park	41,083	2000	
Houston Astros	Minute Maid Park	41,168	2000	Y
Kansas City Royals	Kauffman Stadium	37,903	2009*	
Los Angeles Angels	Angel Stadium	45,517	1998*	
Los Angeles Dodgers	Dodger Stadium	56,000	1962	
Miami Marlins	Marlins Park	36,742	2012	Y
Milwaukee Brewers	Miller Park	41,900	2001	Y
Minnesota Twins	Target Field	38,544	2010	
New York Mets	Citi Field	41,922	2009	
New York Yankees	Yankee Stadium	47,309	2009	
Oakland Athletics	Oakland Coliseum	46,847	1996*	
Philadelphia Phillies	Citizens Bank Park	42,792	2004	
Pittsburgh Pirates	PNC Park	38,747	2001	
San Diego Padres	Petco Park	40,209	2004	
San Francisco Giants	Oracle Park	41,265	2000	
Seattle Mariners	T-Mobile Park	47,929	1999	Y
St. Louis Cardinals	Busch Stadium	45,494	2006	
Tampa Bay Rays	Tropicana Field	25,000	1990	Y
Texas Rangers	Globe Life Field	40,300	2020*	Y
Toronto Blue Jays	Rogers Centre	49,282	1989	Y
Washington Nationals	Nationals Park	41,399	2008	

Note. * The information on the name, capacity, age, and structure is from each team's individual website on ESPN and Wikipedia.

* Year of major stadium renovation

국 문 초 록

팀 구성의 문화 다양성이 프로스포츠 팀 시즌 결과에 미치는 효과

성 호 준

서울대학교 대학원

체 육 교 육 과

본 연구는 프로스포츠 팀의 문화 다양성이 팀 결과에 미치는 영향을 분석하는 것을 목적으로 하기에 다문화 국가를 대표하는 미국을 선정하였습니다. 프로스포츠 팀의 성과는 선수 집단의 실력과 감독이 효과적으로 선수들을 모을 수 있는 능력, 그리고 특별히 팀 다양성 및 문화차이의 결과로 측정됩니다. 그 중에서도 본 연구의 초점은 다양성이 팀 성과와 수요에 미치는 영향에 맞추었습니다. 이러한 팀 결과에 대한 연구는 많은 관심을 받아왔으며 엇갈린 결과들이 가장 보편적으로 확인됩니다. 본 연구의 대상으로 미국 프로야구 리그를 선정된 이유는 리그가 선수들의 다양성을 지향하고 노력함에도 불구하고 백인 스포츠라는 꼬리표를 못 떼고 있는 사실과 인기가 하락세라는 것 입니다. 다문화 팀의 다양성이 팀 결과에 어떤 영향을 미칠 수 있는지를 파악하기 위해서 미국 프로야구 리그 데이터는 2013년부터 2019년 정규시즌을 기반으로 진행됩니다. 따라서 본 연구는 문화 다양성, 문화 거리차이와 집단주의를 분석하였습니다. 그 후 이어서는 팀 마켓인구의 인종통계와 팀 구성의 인종통계 일치 정도가 팬 수요에 미치는 영향을 관중 수를 이용해 측정하였습니다. 이와 같은 목적과 변인들을 실증분석 한 첫 번째 결과는 팀 실력을 통제 한 후 국적 다양성이 높을수록 팀 승률에 부정적이며 유의한 영

향을 주었습니다. 다시 말해서 미국선수들이 더 많은 팀과 같이 동일국적 선수가 많을수록 팀 성과를 높여줍니다. 본 결과는 외국선수의 국적이 팀 내에 더 다양하지 않고 내국인이 많을수록 긍정적인 영향을 나타냈습니다. 문화거리와 집단주의 또한 거리가 멀어지거나 집단주의가 높을수록 부정적인 영향을 주었습니다. 가장 비중이 큰 미국선수들의 비중을 고려해 오직 미국을 상대로 문화거리를 측정하였더니 예상대로 미국과 문화거리가 멀어질수록 팀 성과에는 부정적이며 유의한 영향을 미쳤습니다. 수요마켓과 팀 사이에 인종통계 일치하는 정도가 높을수록 팀 관중 수에 긍정적이며 유의한 효과를 나타냈습니다. 검증된 연구 결과를 토대로 실제적인 시사점, 앞으로의 연구방향 및 결론을 제안합니다.

주요어: 팀 조성, 문화 다양성, 미국프로야구, 팀 성적, 팬 수요

학번: 2013-31108

To my parents, who have been anchors in my life, and provided me with everything I have needed to be successful. Also, those who have assisted me both professionally and personally during my time at graduate school. I could not have gotten to this point without you.

Acknowledgements

I would like to thank my Lord and Savior Jesus Christ, who has faithfully sustained me during this challenging time, for supplying true joy and hope through all difficulties encountered and regardless of the outlook of this research. Through it all, He has continually reminded me what is truly valuable, and for that I am eternally grateful.

Additionally, I would like to extend my sincere thanks to my thesis adviser and entire committee for their support and knowledge. I am appreciative to everyone else at Seoul National University and outside of school who provided support and feedback.

Last but most certainly not least, I would like to thank my Dad and Mom, and family members for cheering me on during every step of this process. I am incredibly thankful for your encouragement and prayers. I know that I could not have done this without your love, support, and patience. All errors are solely the responsibility of the author.