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### **Post-Succession Coaching Performance in NCAA Division I Baseball: Expanding the Theoretical Perspective**

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*For more than half a century, leadership succession was explained using one of three foundational theories that predicted change would harm (vicious circle theory), improve (common sense theory), or have little impact (ritual scapegoat theory) on organizational outcomes. These theories successfully describe the aftermath of a change. As an extension to these foundational theories, reciprocal determinism was utilized to explain the antecedents leading to performance outcomes. A total of 119 coaching changes in men's NCAA Division I baseball from 2005 to 2014 were examined to determine conference success up to four years post-succession. There were 23 independent variables examined relative to the new coach, institution, and coaching change situation. Exploratory latent class analysis and multilevel analysis revealed the majority of variables to be insignificant, except the coach's prior coaching experience and ability. While there was an average increase of .64 wins following a coaching change, there are limited practical benefits.*

*Keywords: Social Learning Theory, coaching success, succession, baseball*

A succession event takes place when a leader is replaced. National Collegiate Athletic Association (NCAA) Division I (DI) men's baseball sees approximately 10% of programs experiencing coach turnover at season's end (Rogers, 2017). The large salaries, beginning to rival their football and basketball counterparts, and increased publicity put a great deal of pressure on baseball coaches to perform. Coaches who do not perform to the standards of administration, fans, or boosters can lose their job (Johnson et al., 2017). When a head coach is removed, or voluntarily vacates their position, athletic directors find themselves in the costly situation of having to replace them (Adler et al., 2012). Sport provides a unique setting to analyze instances of succession due to its popularity, similarity within competitions, and the abundant amount of available data (Wolfe et al., 2005).

DI men's baseball is unique when compared to the most popular NCAA sports - football and men's basketball - because there are fundamental differences of behavioral and environmental variables. For instance, in football there can be 40 or more on-field coaches, while baseball teams may have five or six. Higher coach to player interaction may cause some coaches to have more responsibility. Additionally, a head coach who has 35 baseball players compared to a coach who has 110 football players may have markedly different relationships with each player based on availability. Specifically, a football coach may spend more time with the 35 or 40 athletes who consistently play, leaving the other portion of players to communicate specifically with their position coaches. Baseball coaches may be more regularly involved with all 35 athletes on their roster. Coaching opportunities also differ amongst baseball, football, and basketball coaches. For example, baseball coaches typically have a three-game series against one team to implement coaching changes, whereas basketball and football coaches only play against a team once and have less opportunity to implement coaching strategy between games.

Investigating baseball is important because football and basketball are classified as *head count* (full scholarships) sports while baseball is classified as an *equivalency sport* (partial scholarships). While football and basketball coaches can have 85 and 13 scholarship players respectively, baseball coaches can only offer 11.7 scholarships (Dellenger 2015). Additionally, each of those 11.7 scholarships must be at least 25%. This difference in allocation of resources is important because it could impact how a coach builds their team and how athletes perceive their coach (Nelson, 2018). Coaching players on 25% aid may be different than coaching players on full scholarships in terms of both talent distribution and conceptualization of coaching skill (Dellenger 2015; Nelson, 2018). Furthermore, determining the amount of scholarship to offer so that an effective team can be built is a coaching skill unique to equivalency sports. In addition to being defined by scholarship numbers, basketball and football are referred to as *revenue sports*, while baseball is considered a *non-revenue sport*. Peak viewership of the NCAA FBS football national championship game in 2018 amassed 27.8 million viewers (Russo, 2019). The NCAA men's Division I national championship basketball game in 2018 had 23.5 million viewers (Patten, 2019). Baseball does not compare in this regard. Peak viewership of the College World Series Finals in 2018 amassed 3.1 million viewers in the late innings of game two (Foley, 2018). These differences reinforce that football and basketball coaches generally operate in an environment with more resources and higher scrutiny.

While baseball is not considered a revenue sport, it is important to note that NCAA Division I baseball salaries are approaching college football coaching salaries (Sparks, 2018). When positions are open, athletic directors must hire a qualified and capable individual. Therefore, the

current study is the first to inform athletic directors about the factors that contribute to success for NCAA Division I baseball coaches by expanding upon foundational succession theories in an effort to broaden our understanding of leadership change (Giambatista et al., 2005). Specifically, reciprocal determinism, a central component of social learning theory (Bandura, 1977), was used to explain why some variables appear to have more impact on coaching success than others.

## Review of Literature

Much of the intercollegiate and professional coaching succession literature falls under the broader scope of leadership succession. Leadership succession has been studied in business for nearly a century and has found that new leaders can have varying consequences on an organization (Giambatista et al., 2005). Results indicated confounding variables, most notably fluctuating market conditions, limited the validity of leadership succession studies within this environment. As a result, sport has emerged as a strong environment to study leadership succession because of the lack of confounding variables, widespread popularity, available data, and ability to study similar environments across subjects (Johnson et al., 2017; Pierce et al., 2017; Wolfe et al., 2005). Additionally, there are typically high turnover rates in collegiate sport due to winning expectations (Johnson et al., 2017; Pierce et al., 2017). A coach's win/loss record is one of the primary criteria of job performance, particularly in conference play (Johnson et al., 2017). Analyzing conference win differential is effective as a dependent variable because most schools in the same conference have similar profiles in regard to funding, facilities, and student enrollment (Cannella & Rowe, 1995; Johnson et al., 2017; Pierce et al., 2017).

### *Foundational Theories*

To date, sport succession research has focused mostly on explaining the outcomes of leadership change (i.e., win/loss record). The first theory was created in 1960 by Grusky, which has been referred to as vicious circle theory. Grusky argued that administrative succession leads to organizational instability. He acknowledged the level of instability can vary, but there is at least temporary disruption within the organization. Succession is a disruption because new leaders can bring new policy, new norms, and a change in the relationship amongst members. Even if some positive aspects exist, Grusky maintained that the cons of coaching succession far outweighed the benefits. Additionally, Grusky postulated these disruptions would continue to harm organizations in a cycle, until the next succession event occurred.

Vicious circle theory has helped explain succession in multiple sport contexts. For instance, in 1982, Brown analyzed mid-season coaching changes amongst 26 National Football League (NFL) teams over a nine-year span and discovered a slightly greater decline in performance with an extended recovery time (return to prior level of performance) compared to teams who did not revert to mid-season succession. Similar to the NFL, Premier League teams that make a managerial change following poor performance often times have a longer recovery time than teams who do not choose to change managers after a similar time frame (Audas et al., 1997). Rowe et al. (2005) discovered National Hockey League (NHL) teams who resorted to mid-season succession suffered a worse record than teams who waited to implement a succession event until after the season. Lastly, in a collegiate men's basketball setting, Johnson and colleagues (2017) analyzed 736 head coaching changes over a 15-year period and discovered

disruptions can occur when coaches have to follow successful predecessors, thus leading to a decrease in team performance.

Three years after creating vicious circle theory, Grusky (1963) developed common sense theory which suggests changes in leadership, particularly after poor performance, should improve performance. Prior to the research with 16 Major League Baseball teams, Grusky hypothesized a negative correlation between rates of succession and organizational effectiveness, as well as a negative correlation between a change in the rate of succession and organizational effectiveness. Grusky was also interested in discovering whether teams who kept their managers for a shorter length of time than their predecessors were less effective in future time periods. Similar to the first hypothesis, Grusky confirmed that all eight teams which increased their rate of succession earned a higher average team standing, supporting common sense theory.

Studies supporting common sense theory are limited and usually have conditional findings. Allen et al. (1979) examined 934 differences among between-season and within-season MLB leadership changes, as well as differences between internal and external succession. Results suggested that between season succession is more likely to improve performance and inside succession has a less detrimental impact on performance than outside succession. In one of the few studies to acknowledge antecedents of coaching success, Pfeffer and Davis-Blake (1986) found that successful NBA coaches had a good prior record, had prior experience in the NBA or ABA, or had increased performance leading other teams. When teams experiencing succession hired an individual who fit into one of these categories, they performed better than teams who hired a coach who had previously underperformed or lacked experience.

The final of the three foundational theories is ritual scapegoating theory proposed by Gamson and Scotch (1964). Ritual scapegoating suggests coaching changes will have little to no impact on team performance. While the field manager does handle day-to-day playing decisions, the building of the organization - including the minor leagues - is more important than the field managers ability to coach. Ritual scapegoat theory assumes there are important factors to consider in regard to performance (players on the team, policies created by owner, talent of competition, etc.) outside of a coach's control. Gamson and Scotch (1964) argue coaches are used as a scapegoat while individuals overlook other important variables impacting performance.

Major League Baseball generally demonstrates support for ritual scapegoating theory. In addition to Gamson and Scotch (1964), both Cannella and Rowe (1995) and Smart et al. (2008) were interested in analyzing the impact of managers on team performance in MLB. Similar to Gamson and Scotch, Cannella and Rowe discovered that succession in isolation provided no inclination toward future performance, but extenuating circumstances accounted for the difference in performance more than the succession event. Smart et al. discovered that efficient managers had more managerial experience at the MLB level; however, their overall impact on performance was considered small. Combining baseball with other professional sports, McTeer et al. (1995) also investigated coaching impact in the NFL, NBA, and NHL. They discovered that short-term replacement does have a significant impact on team performance; however, only in the short-term. The research in professional sport highlights why the ritual scapegoating theory is generally the most accepted of the three early theories.

*Social learning theory – reciprocal determinism.* In an attempt to extend coaching succession knowledge beyond the three foundational theories as recommended by Giambatista et al. (2005), reciprocal determinism was adopted (Bandura, 1977). This theory proposes that coaches build skills based upon their previous learning experiences. These skills are the result of

learning through observation and imitating other coaches throughout their career. Bandura's theory eventually led to the development of more occupationally-focused theories, such as Krumboltz and colleagues' (1976) social learning theory of career decision-making. Specifically regarding coaches, the more experience they have in successful coaching environments, the more skilled they become and are more attractive for coaching positions. Presumably, coaches learn what to do through repetition, as well as what is necessary for a team to succeed with varying resources (Pierce et al., 2017). Additionally, through repetition, coaches may learn how to interact with players of differing skill sets and personalities.

The specific component of social learning theory utilized in this study is reciprocal determinism. This component assumes that all individuals are active learners (Bandura, 1977; Krumboltz et al., 1976). Active learners are educated through a host of behavioral (positions, skills), environmental (control over surroundings, social cues), and individual cognitive factors (knowledge, expectations) associated with the new coach, the institution, and the situation surrounding the coaching change. The active learners are able to continuously reference the lessons in an effort to learn from past experiences throughout their careers. In coaching, an individual's knowledge of the game (cognitive factors) would depend on where he or she played or coached (environmental factors), and the role he or she filled while at the institutions (behavioral factors; Johnson et al., 2017). The theory suggests that coaches can refer back to their playing days, lessons learned from mentors, and negative experiences to assist them in learning and attempting to obtain their desired positions (Krumboltz et al., 1976). So, coaches who played at prestigious programs, coached under well-known coaches, and displayed an ability to consistently advance in the coaching ranks would generally be considered stronger candidates during a succession event. However, reciprocal determinism would predict coaches who did not play or were not part of successful coaching staffs may be deemed less desirable in a succession event (Johnson et al., 2017). It is these antecedent factors identified through reciprocal determinism that have remained largely unexplored when examining the successes or failures of coaches post-succession. By adopting reciprocal determinism this study was able to make meaning of the pre-succession variables most impactful for DI baseball head coaching success while still utilizing the foundational theories to explain the post-succession outcomes. Although institutional characteristics are not explained by social learning theory, these were included because of their implications to reciprocal determinism and a coaching environment (i.e., recruiting, player development).

### *Intercollegiate Athletics*

Erickson et al. (2007) were the first to investigate sport variables most related to those utilized in reciprocal determinism. They interviewed 19 coaches from team (ten) and individual (nine) intercollegiate sports. In these interviews, coaches provided their opinion on what experiences were necessary to attain a high-performance coaching position. The authors discovered that formal coaching education or mentorship is a vital experience associated with coaches at the high-performance level. Additionally, playing the sport one coaches at the elite level was not necessary to obtain a high-performance coaching position. The authors concluded that most high-performance coaches did have coaching experience prior to obtaining their positions. Such experience brings about learning in multiple settings, allowing the individual to obtain skills and techniques they can use to better qualify themselves for advanced positions (Krumboltz et al., 1976).

Building from the work of Erickson et al. (2007), Tracy et al. (2018) utilized social learning theory as the theoretical framework to analyze job attainment among Football Bowl Subdivision (FBS) Division I football coaches. Tracy and colleagues utilized five experiential categories including playing experience, coaching experience, affiliation, coaching success, and descriptive variables. They concluded that coaching experience is by far the most significant factor in predicting career attainment, followed by affiliation (team number, conference and school experience) and coaching success. This conclusion supports the work of Erickson et al. (2007), as well as social learning theory of career decision-making because it highlights the importance of context-specific coaching experiences (Krumboltz et al., 1976; Tracy et al., 2018). As reinforced by Johnson et al., 2017, a coach who played at a high level and has a great knowledge of the game (individual factors), coached alongside successful mentors (environmental factors), and was engaged in a meaningful coaching role (behavioral factors), would most likely be viewed as a strong coaching candidate due to the reciprocal benefits that his or her learning process has provided.

The work of Erickson et al. (2007) and Tracy et al. (2018) confirmed the variables most important for coaching attainment. Two additional studies complemented Erickson et al. and Tracy et al. by investigating post-succession coaching success specifically utilizing reciprocal determinism within intercollegiate athletics. In 2017, Pierce and colleagues examined coaching succession in Division I women's basketball. A total of 23 variables pertaining to the new coach, institution, and coaching change situation were studied. Specific to the new coach, Pierce and colleagues (2017) investigated demographic characteristics, past experience, and ability. Additionally, institutional characteristics, such as the funding and enrollment of the university, were analyzed. Lastly, variables pertaining to the coaching change included whether the change was positive or negative and performance or non-performance based. Results suggested that coaching experience positively predicted team performance after the succession event. Even so, the difference in hiring an experienced coach versus an inexperienced coach only accounted for a difference of one win after three years, supporting ritual scapegoat theory that new coaches have little impact. Regarding institutional characteristics, the team budget was discovered to impact win/loss record as well. Teams who invest more financial resources experience a smaller number of wins following a coaching change, supporting the finding that teams with moderate to high success experience the greatest difference in wins and losses after a coaching change. This is perhaps because they have greater room for performance decrease, compared with a team who was already performing poorly and not investing many financial resources into the program. Similar results were discovered by Dohrn et al. (2015) when they analyzed FBS college football and the difference between high, mid, and low revenue teams. Specifically, the results surrounding low revenue FBS teams offered support for the common sense theory because it was revealed that low revenue teams could improve their performance (in the short-term only) by replacing poor performing coaches. Although institutional characteristics are not explained by social learning theory, it is still important to include them in this study because they play a major role in the recruiting arms race of collegiate sports, something that greatly impacts a team and is explained by reciprocal determinism.

Pierce and colleagues (2017) also discovered the number of wins for the previous coach and Women's National Basketball Association draft picks in a program to be significantly related to winning. Specifically, the more wins the pre-succession coach had, the greater chance the number of wins would decrease after the coaching change. Institutions with a history of WNBA draft picks experienced better success following a coaching change. After reducing the

number of variables to a single descriptor, the only predictor of win differential was the past performance of the team. Notably, coaches who entered a program that had little success previously were more likely to show an increase in wins, supporting the common sense theory. One more win per season, however, was noted to have little practical implication.

In the most recent study investigating reciprocal determinism, Johnson et al. (2017) analyzed coaching success in NCAA Division I men's basketball. The authors studied 736 succession events in Division I men's basketball from 1999 – 2014. The researchers analyzed similar cognitive, environmental, and behavioral variables regarding the new coach, institution, and coaching change situation. Following individual analysis, the coach's head coaching experience, minority status, and ability were significant. Additionally, the nature of the coaching change was significant. Similar to the findings in Pierce et al., the previous coach's number of wins and National Basketball Association draft picks were significant. In particular, the more success of a previous coach led to greater difficulty for the new coach in developing a positive win differential. Additionally, more NBA draft picks led to success for the new coach (Johnson et al., 2017). Following Latent Class Analysis, the coach's ability, context of the vacancy situation, and previous success of the program where the coaching change occurred remained significant. These findings reinforced social learning theory because it implied that coaches who have learned from a multitude of experiences become coaches that lead winning programs (Johnson et al, 2017).

Given the prior results from Pierce et al. (2017) and Johnson et al. (2017), the following hypotheses were created:

- H1: The new coach's ability would best predict conference win/loss record following a succession event.
- H2: The previous performance of the program would best predict conference win/loss record following a succession event.
- H3: The vacancy situation would best predict conference win/loss record following a succession event.

## Method

### *Data and Sample*

This study identified 119 coaching changes in 16 conferences from the 2005-2014 seasons in Division I men's NCAA baseball. However, data on the impact of those changes (wins and losses) was collected for four years after the changes occurred. The time frame was chosen because four years is considered a full recruiting cycle for college coaches and a sufficient amount of time to evaluate coaching impact (Bosch, 2014). The conferences analyzed in this study consisted of the 16 conferences with the highest Rating Percentage Index (RPI) in 2018 (Warren Nolan, n.d.; Pierce et al. 2017). The RPI is a measure used to rank teams based upon win/loss record and strength of schedule. Conferences included Southeastern, Big Twelve, Atlantic Coast, American Athletic, Pacific Twelve, Big Ten, Atlantic Sun, Sun Belt, Mountain West, Missouri Valley, Conference USA, Big East, Colonial Athletic, Big West, West Coast, and Southern (Warren Nolan, n.d.).

Data collection resembled prior research (Pierce et al, 2017; Johnson et al., 2017), in that online archival sources were utilized. Sources included intercollegiate athletic department websites, institution websites, team media guides, coach profiles, and various media articles. The team website was used to collect the coach's record. If the record could not be found in university archives, The Baseball Cube was utilized. This website gathers statistical data from box scores, Baseball America, and team media guides as well. Next, the coach profile on the athletic department website was utilized to obtain all available information from this source. This included the new coach's previous school and position, coaching history, and demographic characteristics. Additionally, media articles introducing the newly hired coach or announcing the previous coach's departure often included statistics surrounding the previous success of the program, including the previous coach's tenure and win-loss record, as well as the nature of the coaching change. The articles utilized to code the nature of the coaching change were saved to later determine intercoder reliability (see Variables below). The stadium capacity and MLB draft picks were gathered from university facility pages, coach biographies, or The Baseball Cube if not on university websites. The 2010 census data was utilized for town/city population and enrollment was gathered via US News.

### *Variables*

There were a total of 23 independent variables placed into seven total categories that fell under three main factors related to either the new coach, the institution, or the coaching change situation (see Table 1). These antecedent variables are assumed to be influential based on social learning theory and reciprocal determinism and adopted from work by Johnson et al. (2017), Pierce et al. (2017), and Tracy et al. (2018). The three categories unique to the new coach were level of experience, previous performance, and demographic characteristics. The independent variables within the level of experience were playing experience (the highest level of baseball the coach played), previous job (the level of baseball and position held prior to attaining the new job), number of years of head coaching experience, number of years of total coaching experience, and stability at previous head coaching positions. The previous performance of the coach was their career win/loss differential. The independent variables within the demographic category were age, race, and education.

The two environmental categories that related to the institution were the characteristics of the institution and the program's previous performance. The category of institutional characteristics included four independent variables: public or private (funding), the capacity of the baseball stadium, student body enrollment, and town/city population listed in the school address. The category of program's previous performance contained three independent variables, including the tenure of the previous coach (in years), the number of wins the previous coach had throughout his tenure, and the number of Major League Baseball draft picks selected while the new coach was in his position.



Table 1  
*Factors, Items, and Descriptions*

<b>Factor</b>	<b>Items</b>	<b>Descriptions</b>
<i>Coach's Demographic Classes</i>		
Education level	Bachelor Master	Highest level of education achieved
Minority status	Caucasian Other	
Age	(means)	
<i>Coach's Experience</i>		
Playing experience	College Professional	Coach's highest level of playing experience
Previous job	Head coach Transition Coach	Coach had head coaching experience Had been a head coach but was not a head coach in previous job
Years coaching	Assistant Coach (means)	Never been a head coach
Stability at previous job	(means)	
Years head coach	(means)	
<i>Coach's Ability</i>		
Career win differential	(means)	Career win differential as head coach
<i>Vacancy Situation</i>		
Circumstance	Positive Negative	The circumstance around the change was positive The circumstance around the change was negative
Performance-Based	Performance Non-Performance	The change was due to performance reasons The change was not due to performance
<i>Hiring Factors</i>		
Level hired from	One level down Same level One level up	Previous school was at lesser competitive level (move from non-Power 5 to Power 5, Division II or III, or HS) Previous school was at same competitive level Previous school was at higher competition (move from MLB or minor leagues)
Serve as interim coach	Yes No	Did the coach serve as an interim coach prior to being hired full time?
Origin of the coach	Internal External	Coach hired from previous coaching staff Coach hired from outside the University
Alumnus	Yes No	Was the coach an alumnus of the school? (Did not have to graduate)
Conference experience	Yes No	Did the coach have experience coaching previously in the same conference?

<i>Institution Characteristics</i>		
Funding source	Public Private	Private or public school
Stadium capacity	Less than 2,500 2,500 to 4,000 Greater than 4,000	Seating capacity of home stadium
Enrollment	Less than 14,000 14,000 to 25,000 Greater than 25,000	Total institutional enrollment
Community population	Less than 70,000 70,000 to 250,000 Greater than 250,000	Population of city/town listed in school address
<i>Program's Previous Success</i>		
Coach's tenure	Less than 5 years Between 5 and 10 years Greater than 10 years	Previous coach's tenure (years)
Previous coach win differential	Negative W/L Differential Positive, but less than 100 W/L win differential Greater than 100 W/L differential	Previous coach's difference in wins and losses
Number of MLB placements	10 or fewer picks Between 11 and 30 picks Greater than 30 picks	The number of draft picks the University had while the new coach was employed at the school

Lastly, the two categories that related to the coaching change situation were the nature of the coaching change and source of the new coach. The independent variables within the nature of the change were whether the change was due to performance or nonperformance and whether the change was positive or negative. For instance, positive performance indicated the coach had moved on to a different position (usually higher in prestige) as a result of his success (win/loss record). Positive nonperformance indicated that the coach vacated his position for reasons other than performance (i.e., retirement). Negative performance signified the firing of the coach, usually due to poor win/loss record. Negative nonperformance was characterized by the coach being fired due to reasons other than performance (e.g., rules violation, ethics). The independent variables within the source of the change were whether the hire was an internal or external hire, whether the coach had prior experience coaching in the conference, whether the coach was an alumnus of the school, whether the coach served as an interim coach prior to being hired, and the level from which the coach was hired.

To determine the nature of the coaching change (positive vs. negative, performance vs. nonperformance), two coders were used. Interrater agreement, the extent to which separate coders agreed on the classification of data was utilized (McHugh, 2012). After the primary coder finished coding the nature of the succession event, a second individual coded the same variables

independent of the primary coder. Interrater agreement above 81% indicates a strong and acceptable agreement for coding procedures (McHugh, 2012). Agreement between the two researchers was 87% regarding a positive or negative succession event and 85% regarding a performance or non-performance related succession event yielding data in the acceptable range.

### *Design and Analysis*

This study utilized both historical and concurrent data to examine which factors best predicted conference coaching win/loss record for men's NCAA Division I baseball coaches. Categorical variables were coded accordingly (e.g., 1 for public; 2 for private). Continuous variables were recorded in a nominal manner, such as the number of years of coaching experience or the total number of career wins and losses.

The analysis in this study emulated prior research from Johnson et al. (2017) and Pierce et al. (2017). Following the aforementioned data collection process utilizing multiple online sources, frequencies and measures of central tendency were calculated. Next, individual linear regression analysis was calculated to analyze the relationship between each of the variables and the average per year conference win differential. Latent Class Analysis (LCA) was then used to categorize the variables into a reduced set of descriptors. LCA involves reducing a large number of variables down to one specific practical item and is especially important when analyzing data with a large number of variables and a relatively small sample size (See Table 2; Pierce et al., 2017). The variables are categorized based on fit, and practical groups were created for each factor. For example, all seven factors were divided into two main groups. For the demographic characteristics, LCA revealed that coaches were generally described as younger coaches with bachelor degrees or older coaches with graduate degrees. Race was eliminated in describing the two groups because it did not have a large enough impact to be considered in the classification. Institution characteristics were reduced to small, private universities and large, public universities. Lastly, multilevel analysis (mixed models analysis) was conducted utilizing R software to analyze all variables. Multilevel analysis was utilized because there were instances of multiple coaching changes at the same university. Multilevel analysis allows the best opportunity to analyze both categorical and continuous variables that are not independent of one another. This process of analysis best attended to the research question of discovering which variables best predict conference coaching win/loss record for men's NCAA Division I baseball coaches (Johnson et al., 2017).

## **Results**

The first step was a linear regression among each of the factors and the dependent variable of average per year conference win/loss record following the coaching change, which was .64. The categories unique to the new coach were analyzed first and demonstrated significant results. The total number of years coaching experience prior to being hired was significant ( $F = 6.17$ ,  $p = .015$ ). On the contrary, the coach's playing experience ( $F = 0.60$ ,  $p = .44$ ), assistant coaching position ( $F = 1.35$ ,  $p = .248$ ), transitional coaching position ( $F = 0.10$ ,  $p = .751$ ), average length of stay in previous head coaching positions ( $F = .12$ ,  $p = .725$ ), and years of head coaching experience at the time of the hire ( $F = 0.01$ ,  $p = .926$ ) were not significant. The coach's ability was analyzed using the career win/loss differential and was found to be significant ( $F = 14.27$ ,  $p < .001$ ). Within the new coach's demographic characteristics category,

neither the education level ( $F = .7$   $p = .406$ ), race ( $F = .65$   $p = .423$ ), or age ( $F = 3.7$   $p = .057$ ) variables were significant.

Variables were then analyzed relating to institutional characteristics. Regarding the basic characteristics of the institution, all variables, including public vs private ( $F = 0.84$ ,  $p = .361$ ), stadium capacity ( $F = 1.12$ ,  $p = .292$ ), college enrollment ( $F = .001$ ,  $p = .938$ ), and community population ( $F = .07$ ,  $p = .795$ ) were insignificant. For prior success of the program, the previous coach's win/loss record was significant ( $F = 8.71$   $p = .004$ ). Additionally, the number of MLB draft picks from the school during the coach's tenure at his new job was significant ( $F = 4.93$   $p = .028$ ). Despite the variable relating to draft picks under the new coach, it was classified under previous program success based on some players potentially being drafted under a coach after being previously recruited or coached by the former coach. The tenure of the previous coach was insignificant ( $F = 1.49$ ,  $p = .225$ ).

Lastly, the variables encompassing the nature of the coaching change were analyzed. There was no impact on conference winning percentage if the coaching change was positive or negative ( $F = .03$ ,  $p = .863$ ) or performance or nonperformance based ( $F = 0.01$ ,  $p = .917$ ), as both categories were statistically insignificant. Additionally, all variables surrounding the newly hired coach were insignificant. This includes whether the coach had previous conference experience, whether he was an internal or external hire, as well as if he served as an interim coach prior to being hired (see Table 2).

The descriptive frequencies for all variables are listed in the 'Total Sample' column in Table 3. Following the initial within category analysis, six factors were subjected to Latent Class Analysis in order to reduce the large number of variables to one item and determine the number of groups for each factor. Coach's ability was not subjected to LCA because it was already a single-item measure of career head coach win differential (Johnson et al., 2017). Following LCA, data revealed it was best to categorize each of the factors into two classes because of the consistency in score, complexity of the model, and level of error. This was illustrated by the two group option consistently having the lowest Bayesian Information Criterion (BIC) in the model table, which indicates the best fit. Descriptors of all classes can be found in Table 3. For coach demographics, race was excluded because it did not have an effect on the qualifications of classes. As a result, the two categories for coach demographics were younger individuals (mean age = 38.6) with a bachelor's degree and older individuals (mean age = 43.7) w/ a graduate degree. For coach's experience, group one was categorized as established head coaches (mean years as head coach = 9.14) with more experience (mean years total coaching = 19.96), while group two was categorized as lifetime assistant coaches (no head coaching experience) with less experience (mean years total coaching = 13.50). Referring to vacancy situation, group one was classified as positive coaching changes with mixed performance and non-performance situations. Group two was classified as negative non-performance succession situations. For hiring factors, the coach's prior conference experience, alumnus status, and interim status were not significant predictors of class membership and were disregarded as a result. The two classes of hiring factors included hiring coaches from varying levels outside the program and coach's from the same level with moderate inside connections to the program. The institutional characteristics factor LCA revealed group one to include private schools with small enrollments while group two included public schools with large enrollments. Finally, the groups for program's previous success were defined as programs with short-tenure head coaches (mean years = 6.72) with mixed win differentials (mean win diff. = -15.54) and programs with longer tenure coaches (mean years = 18.9) with a better win differential (mean win diff. = 230.75).

Table 2

*Item results by category*

<b>Categories and Items</b>	<i>F test</i>	<i>p</i>
Coach's Demographic Characteristics ( $R^2 = .04$ )		
Education level	0.70	.406
Minority status	0.65	.423
Age	3.70	.057
Coach's Experience ( $R^2 = .15$ )		
Coach's previous playing experience	0.60	.440
Previous job: Head coach versus assistant coach	1.35	.248
Previous job: Head coach versus transition coach	0.10	.751
Number of years coaching	6.17	.015*
Stability at previous job	0.12	.725
Number of years as a head coach	0.01	.926
Coach's Ability ( $R^2 = .11$ )		
Career win differential	14.27	< .001*
Vacancy Situation ( $R^2 = .00$ )		
Positive vs. negative situation	0.03	.863
Performance versus non performance	0.01	.917
Interaction of +/- and performance	0.00	.992
Hiring Factors ( $R^2 = .01$ )		
Conference level hired from		
Serve as interim prior to hire	0.38	.538
Hired from inside or outside program	0.28	.601
Alumnus	0.19	.662
Previously coached in conference	0.00	.994
Institution Characteristics ( $R^2 = .02$ )		
Public vs. private	0.84	.361
Stadium capacity	1.12	.292
Enrollment	0.00	.938
Population of community	0.07	.795
Program's Previous Success ( $R^2 = .10$ )		
Previous coach's tenure	1.49	.225
Previous coach win differential	8.71	.004*
Number of MLB placements	4.93	.028*

Table 3  
*Class Descriptions Based on Means or Response Percentages by Group*

<b>Factors, Items, and Groups</b>			Total Sample	Group 1	Group 2
<b>Coach's Demographic Classes</b>		<i>n</i> =	119	60	59
Education level	Bachelor	%	58.0	49.6	8.4
	Master	%	41.2	0.0	41.2
Minority status	Caucasian	%	95.8	47.9	47.9
	Minority	%	4.2	2.5	1.7
Age	( <i>means</i> )		41.14	38.60	43.73
<b>Coach's Experience</b>		<i>n</i> =	119	69	50
Playing experience	College	%	62.2	37.8	24.4
	Professional	%	36.1	18.5	17.7
Previous job	Transition	%	24.4	23.5	0.8
	Assistant	%	41.2	0.8	40.3
	Head coach	%	33.6	33.6	0.0
Number of years coaching	( <i>means</i> )		16.08	17.96	13.50
Stability at previous job	( <i>means</i> )		3.49	6.02	0.0
Number of years as a head coach	( <i>means</i> )		5.30	9.14	0.0
<b>Coach's Ability</b>		<i>n</i> =	116	<i>No Classes</i>	
Career win differential	( <i>means</i> )		-3.27		
<b>Vacancy Situation</b>		<i>n</i> =	119	100	19
Circumstances	Positive	%	56.3	56.3	0.0
	Negative	%	43.7	27.7	16.0
Performance	Performance	%	29.4	29.4	0.0
	Non-Performance	%	70.6	54.6	16.0
<b>Hiring Factors</b>		<i>n</i> =	119	67	52
Level hired from	One level down	%	24.3	23.5	0.8
	Same level	%	54.6	11.8	42.8
	One level up	%	21.1	21.1	0.0
Serve as interim prior to hire	Yes	%	9.2	0.8	8.4
	No	%	90.8	55.5	35.3
Hired from inside or outside program	Inside	%	31.1	0.0	31.1
	Outside	%	68.9	56.3	12.6
Alumnus	Yes	%	17.6	5.0	12.6
	No	%	82.4	51.3	31.1
Previously coached in conference	Yes	%	50.4	10.1	40.3
	No	%	49.6	46.2	3.4

<b>Institution Characteristics</b>		<i>n</i> =	119	30	89
Public vs. private	Public	%	79.0	10.9	68.1
	Private	%	21.0	14.3	6.7
Stadium capacity	Less than 2,500	%	38.7	18.5	20.2
	2,500 to 4,000	%	37.0	5.0	32.0
	Greater than 4,000	%	24.3	1.7	22.6
Enrollment	Less than 14,000	%	25.2	25.2	0.0
	14,000 to 25,000	%	22.7	0.0	22.7
	Greater than 25,000	%	52.1	0.0	52.1
Population of community	Less than 70,000	%	32.8	10.1	22.7
	70,000 to 250,000	%	38.7	9.3	29.4
	Greater than 250,000	%	28.5	5.9	22.6
<b>Program's Previous Success</b>		<i>n</i> =	116	65	51
Previous coach's tenure	Less than 5 years	%	21.6	20.7	0.9
	Between 5 and 10 years	%	34.5	28.4	6.1
	Greater than 10 years	%	43.9	6.9	37.0
Previous coach win differential	Negative W/L Differential	%	35.3	35.3	0.0
	Positive, but less than 100 W/L win differential	%	27.6	20.7	6.9
	Greater than 100 W/L differential	%	37.1	0.0	37.1
Number of MLB placements	10 or fewer picks	%	27.6	21.6	6.0
	Between 11 and 30 picks	%	45.7	25.0	20.7
	Greater than 30 picks	%	26.7	9.5	17.2

Note: The number of groups for each factor were determined by results from the Latent Class Analysis.

The mixed model analyses are presented in Table 4. Results indicated that two factors significantly impacted differences in win differential following a coaching change. First, the coach's ability was significant ( $F = 16.11$ ,  $df = 104$ ,  $p < .001$ ). This signifies the past winning percentage of a head coach is related to his potential to increase conference win differential following his hire. Second, coach's experience was found to be significant ( $F = 10.90$ ,  $df = 104$ ,  $p < .001$ ). Lifetime assistant coaches with no head coaching experience see an increase of 2.41 games per year, respectively. However, established head coaches with more experience see a decrease in win differential of -0.59 games immediately following a change.

Table 4  
*Mixed Models Analysis*

<b>Categories and Items</b>	<i>Means of DV</i>	<i>F test</i>	<i>p</i>
Coach's Demographic Classes		1.93	.167
Grp 1: Younger w/ Bachelor degree	0.25		
Grp 2: Older w/ Graduate degree	1.57		
Coach's Experience		10.90	.001*
Grp 1: Established HC w/ more experience	-0.59		
Grp 2: Lifetime Assistant Coach w/ less exp.	2.41		
Coach's Ability		16.11	< .001*
Vacancy Situation		0.10	.756
Grp 1: Positive w/ mixed performance/non-performance	0.69		
Grp 2: Negative non-performance	1.31		
Hiring Factors		0.01	.931
Grp 1: Varying levels and outside hire	0.87		
Grp 2: Same level w/ inside connections	0.95		
Institution Characteristics		0.00	.995
Grp 1: Private, small enrollment	0.92		
Grp 2: Public, large enrollment	0.91		
Program's Previous Success		2.23	.138
Grp 1: Short tenure, mixed win diff.	1.71		
Grp 2: Long tenure, better win diff.	0.11		

## Discussion

### *Individual Regression Analysis*

Although social learning theory would support most of the variables in this study as potential determinates of coaching success, the majority of factors did not impact conference win differential. Despite the insignificant results for variables many would consider anecdotally important for a head coach (e.g., playing experience), there were some significant variables in the individual and mixed models analysis that reaffirmed social learning as impactful on success.

Within the individual analysis there were two variables within the program's previous success that impacted conference win differential. First, the win differential of the previous coach was significant. There was a correlation of  $-.222$  significant at the .01 level, indicating coaches who entered programs that enjoyed previous success may win slightly fewer games than the program did prior to the new coach being hired. This finding supports vicious circle theory in that change can cause a period of instability and negatively affect performance (Grusky, 1960). However, coaches who perform well for a number of years at an institution are often likely to leave when retiring or accepting a more prestigious job (Johnson et al., 2017). This slight drop in performance following succession of a perennially successful coach highlights the influence of a successful coach. This performance decrease supports previous literature which illustrated how new coaches may struggle to perform at the previous coach's level while becoming acclimated to the new environment (Johnson et al., 2017; Pierce et al., 2017). This point may be particularly



relevant in an equivalency sport scholarship environment because coaches must determine how to divide scholarships relative to recruiting and retaining players. A baseball coach that has been at an institution (and had a legacy of success) had likely done well to navigate scholarship allocation. New coaches would likely require a learning curve to traverse this challenge not found in head count (full scholarship) sports such as football and basketball.

The number of MLB draft picks the coach had during his tenure at the new school had a small significant impact on performance as well. This environmental variable indicated coaches who had players drafted into the MLB enjoyed greater success in regard to conference win differential, after entering their new position. The number of draft picks was also significant in prior studies analyzing men's and women's collegiate basketball (Johnson et al., 2017; Pierce et al., 2017); however, the total number of draft picks throughout the institution's history were collected in those studies. Interestingly, the number of professional draft picks still remains significant regarding conference win differential in both instances. Thus, a tradition of MLB draft picks impacts coaching success following a change. Additionally, coaches who have MLB players on their current team are also successful, thus illustrating the importance of player impact. This finding also illustrates the importance of tradition whereby strong college programs who send players to professional leagues attract strong recruits, thus continuing their tradition of winning.

Another variable significant at the individual level of analysis was the coach's ability, which was measured as a continuous variable of career win differential. This finding suggests the more overall success a coach previously had, the greater likelihood he will have success in the new coaching appointment. Prior coaching success as a predictor of winning has also been supported in previous research (Smart et al., 2008; Johnson et al., 2017). These findings reinforce reciprocal determinism and social learning theory because for the coach to have previous success, it is assumed that he partakes in numerous instances of active learning (Bandura, 1977). Specifically, a successful coach may have been a part of numerous teams with differing coaching structures and mentors (environmental characteristics). Within these structures, the coach could have filled multiple roles, such as assistant coach, pitching coach, or hitting coach (behavioral characteristics). Specific to baseball and other equivalency sports, a coach could also develop skills as a recruiter as they learn how to best allocate partial scholarships. As a result, the coach learned from all previous experiences in an effort to increase his knowledge and strategy surrounding the game (personal cognitive factors), thus impacting his aforementioned successful conference win differential. As evidenced by Johnson and colleagues (2017), this result can be applied even further to the social learning theory of career decision-making because individuals utilize these environmental, behavioral, and cognitive characteristics to learn field-specific attributes that allow them to obtain better positions throughout their careers (Krumboltz et al., 1976). Pragmatically, this finding makes sense because athletic directors, just like leaders in business, consider an individual's past employment history and performance upon making a hiring decision (Adler et al., 2013). Individuals who had two or three lackluster head coaching performances may not receive the same opportunities as a coach with multiple successful head coaching stints (Tracy et al., 2018).

The final individual variable deemed significant was the total number of years coaching in any coaching role (not only as head coach). All other variables in the factor labeled coach experience, such as playing experience, previous job, stability at previous jobs, and number of years as head coach were insignificant. In regard to individual analysis, this finding supports Pierce et al. (2017) and differs from Johnson et al. (2017). Previous *head coaching* experience

was deemed more important in men's college basketball, while *overall coaching experience* was significant in baseball. One potential reason for this finding could be the commercialization of men's collegiate basketball. Due to the highly publicized nature of the sport, head coaching experience may be required for coaches to acclimate themselves to the intense demands of the position. For men's baseball, coaches may learn as much from assistant positions as head coach positions, since they may not need to gain comfortability becoming a recognized, public figure that oftentimes accompanies a DI football or men's basketball coach (Sparks, 2018). Both types of experience, however, relate to active learning through prior experience, a key component of social learning theory (Bandura, 1977) and occupational attainment (Krumboltz et al., 1976). This point may be especially true for baseball coaches because they have much longer tenures (on average) than to basketball coaches, which may allow them to acclimate better over time to the unique demands of coaching baseball (e.g., scholarship distribution, between game strategies, positional considerations).

There were a number of variables deemed insignificant at the individual level of analysis. These included all variables associated with demographic characteristics, the vacancy situation, hiring factors, and institutional characteristics. Results in this study indicated it did not matter whether an individual is an alum of a program or has previous coaching experience in the conference. By knowing which of these variables are not significant may be as important as knowing the significant variables because athletic directors can then focus their hiring efforts more specifically.

### *Mixed Models Regression Analysis*

Mixed models analysis revealed two factors as significant, including coach's ability and coach's experience. This result highlights how a coach's ability can be an important factor in determining the level of consideration for an elite position (Krumboltz et al., 1976; Tracy et al., 2018). Coaching ability indicates the coach has done the things necessary for success, not only from a strategic or behavioral standpoint, but environmental and cognitive aspects as well. These experiences appear to have an impact on the coach's continued success, evidenced by the greater career win differential (Cannella & Rowe, 1995). This result is the essence of reciprocal determinism. In prior literature, coaching ability was significant following multilevel analysis when coaching men's basketball (Johnson et al., 2017) but not women's basketball (Pierce et al., 2017). The program's previous success was the only variable deemed significant for women's basketball following mixed models analysis (Pierce et al., 2017). These results speak to what factors are most important for continued success at a given university. In baseball, it appears a winning history for a newly hired coach impacts performance more so than the overall performance history of a program. This finding is strikingly different than in men's basketball (Johnson et al., 2017), where performance history of the program was the most impactful variable.

Coach's experience was the second significant factor following mixed models analysis. Previous research regarding effective hiring practices in the NBA signified coaches with more experience outperformed their underexperienced counterparts (Pfeffer & Davis-Blake, 1986; Holfler & Payne, 2006). The opposite effect was discovered in this study. Specifically, baseball head coaches with more experience saw a statistically significant decline of -.59 wins following the coaching change. Conversely, lifetime assistant coaches with less experience enjoyed a significant increase of 2.41 averaged wins following the coaching change. This finding could be

because lifetime assistant coaches are more willing to be hired at institutions where the program had been struggling, and thus have greater opportunity for improved performance early in their head coaching career. Experienced head coaches may be hired at higher levels (e.g., power five conferences) where it is more difficult to win initially. In similar studies, both Johnson et al. (2017) and Pierce et al. (2017) discovered coach's experience to be insignificant in their respective sports of men's and women's collegiate basketball following mixed models analysis. There is a difference between baseball and basketball in that coaching experience in baseball results in a greater regression to the mean compared to collegiate basketball. One potential explanation for this is coaching decisions may matter more in baseball than in basketball, including the decisions on how to allocate equivalency scholarships. For instance, baseball coaches have the opportunity to call each pitch and position their players before a play occurs. In basketball, coaches still have the opportunity to call set plays, but when the game is moving at a fast pace up and down the floor, it may be the players' athleticism that accounts for performance and success more so than coaching decisions. In general, a baseball game may involve more of the strategic decisions that may influence the game. This possibility is certainly worth exploring in future research.

Similar to the individual analysis, there were a number of variables that were insignificant following mixed models analysis. Most notably, the previous success of the program had been significant in individual analysis but was no longer significant following mixed models analysis. This indicates this factor was not strong enough when accounting for the combination of variables to remain significant. This finding is markedly different than recent studies (Johnson et al., 2017; Pierce et al., 2017) that reported the previous success of the program as being the most significant factor predicting conference success. One potential explanation for this could be how success can be defined in these sports. For instance, in collegiate basketball many programs might consider a coaching change after a .500 record. Baseball, however, is less commercialized and does not appear to have as much pressure to win in a short amount of time. This is evidenced by the 119 baseball coaching changes from 2005 to 2014 in this study compared to the 736 from 1999 to 2014 in men's basketball (Johnson et al., 2017) and 185 from 2000 to 2009 in women's basketball (Pierce et al., 2017). Therefore, previous success of a program may be harder to differentiate in baseball, where coaches have more longevity. For instance, in previous studies, the average tenure of the previous coach in men's and women's basketball was 6.8 and 8.2 years, respectively. In this study, the average tenure of the previous baseball coach was 12.2 years, nearly doubling the tenure of men's basketball coaches. This finding suggests baseball coaches are given more time to succeed – a uniquely distinguishing characteristic between baseball and revenue sports.

Additionally, in both individual and mixed models analysis, all variables related to coach demographics, vacancy situation, hiring factors, and institution characteristics were insignificant. There was not much variability in the demographic variables, especially with regard to race where only 4.2% of coaches were a minority. This differs from previous men's basketball research which discovered race as a statistically significant, yet pragmatically weak variable, in terms of impact on wins and losses (Johnson et al., 2017).

Results surrounding the vacancy situation were also different from previous research by Johnson et al. (2017). In this study there were a larger number of positive coaching changes, 67, compared to negative coaching changes, 52. Additionally, conference win differential was not significantly impacted whether the nature of the coaching change was positive or negative or performance or non-performance based. The results did not support common sense theory which

predicts an increase in performance when a coaching change is made (Grusky, 1963). Basketball coaches seemed to be fired or retained based on wins and losses (Johnson et al., 2017), but it is not so clear with baseball coaches. This is illustrated by the 13% interrater disagreement for positive vs negative circumstances and the 15% among performance vs nonperformance situations conducted in this study. While the numbers were within appropriate levels to determine agreement, the amount of disagreement could be enough to render this variable insignificant. Or, coaching changes in men's NCAA Division I baseball appear to be more nuanced than coaching changes in revenue sports like basketball where winning appears to drive succession decisions more so than baseball.

Lastly, both hiring factors and institutional characteristics were insignificant. It did not matter whether the coach previously worked at the same level, was an alumnus of the program, or was an internal or external hire. Previous research indicated that an internal hire occurring between seasons can be least detrimental to the success of a program or business (Allen et al., 1979; Giambatista et al., 2005). The results of this study coincided with more recent research that revealed hiring factors to be insignificant (Johnson et al., 2017). Additionally, institutional characteristics, such as funding source, university enrollment, and stadium capacity were insignificant and had no effect on conference win differential. The lack of significance surrounding these variables may be because many institutions in the same conference have similar funding, enrollment, and stadium design (Cannella & Rowe, 1995), which partly explains why there is an *arms race* for facilities and resources within intercollegiate athletics (Knight Commission, 2019).

### *Theoretical Implications*

Theoretically, this study expanded on the coach succession literature by drawing on Bandura's social learning theory (1977) and Krumboltz and colleagues (1976) social learning theory of career decision-making. Specifically, the behavioral (coach ability and experience) and environmental (prior program success) components of reciprocal determinism have been identified as important factors in determining coaching success after a change. Social learning theory provided the bridge between variables pre-succession, and the outcome post-succession explained by the three foundational succession theories. Utilizing the concept of reciprocal determinism allowed the researcher to analyze multiple variables pertaining to the new coach, institution, and coaching change situation and determine which of those variables most influenced success post-succession. Although a few variables were found to impact coach succession, the majority of variables were insignificant. Therefore, it can be concluded that social learning theory is a broad theory encompassing many variables, signifying the need to more precisely evaluate variables that may impact coaching success. Specifically, further analysis of coaching experience could involve variables such as the new coach's previous mentor and details of each coaching experience. For example, this level of detail could explain how important it may be for a coach to gain experience at a Power Five school or learn from a coach with a specific pedigree or set of mentors. Thus, the results of this study, and social learning theory in general, encourages more specific analysis of multiple factors pertaining to coach experience and ability.

Central to the theoretical contribution of this study is distinguishing it from the Johnson et al. (2017) study of DI basketball. Both studies utilize reciprocal determinism, and the current study was a partial replication of the Johnson et al. (2017) design. Additionally, Johnson et al.

specifically encouraged “future research that makes comparisons between smaller and similar contexts, conferences, or institutions” (p. 142). In that spirit, the current study was similar to Johnson et al. as it was an investigation of variables derived from reciprocal determinism and evaluated four years post-succession through Latent Class Analysis.

This study, however, diverged from Johnson et al. (2017) in a number of important ways. First, as noted prior, DI baseball differs from DI basketball in terms of team size, coaches per player, popularity, financial resources, and scholarship distribution. These factors provided reason to believe baseball coaching succession (and characteristics of coaches’ tenure) could differ from that of NCAA men’s DI men’s basketball because the variables impact winning percentage in inherently different ways. Second, this study focused on only 16 of the most successful conferences rather than the entirety of DI. This distinction ensures that the most competitive baseball programs were evaluated making the variables chosen more pronounced than the sample in Johnson et al. that investigated all of DI basketball. Third, whereas Johnson et al. investigated 19 variables, the current study expanded the investigation to 23 variables. Most notably, two hiring factors (serve as interim coach, alumnus), two institutional characteristic factors (stadium capacity, community population), and one program success factor (previous coach win differential) were added. These variables offered an additional layer of analysis that appeared relevant to baseball. Fourth, the current study expanded the statistical analysis beyond Johnson et al. by using multilevel analysis (mixed models analysis) to analyze both categorical and continuous variables not independent of one another. This additional tier of statistical analysis was necessary so that multiple coaching changes at the same university could be analyzed. Finally, while the results of this study reinforced some previous findings from Johnson et al. (2017) and Pierce et al. (2017) some results for baseball were distinctly different from those in basketball. Most notably, total number of years coaching in any role was significant for baseball and not basketball. Head coaching experience was significant for basketball and not baseball. Additionally, race was not significant for baseball success while it was for basketball. Furthermore, nature of the coaching change revealed that baseball coaches change positions far less and for much more positive reasons than basketball coaches, whose tenures are much shorter and overwhelmingly connected to performance. These differences in design and results reinforce the nuances of different sports (e.g., baseball vs. basketball) and suggest that each study filled different gaps in the coaching succession literature.

### *Practical Implications*

The most noteworthy practical finding from this study is that athletic directors must exercise caution when considering a baseball coaching change. The best case scenario to increase conference wins (average of 2.41 wins) over a four-year span is to hire a first time, lifetime assistant head coach who has been involved with winning teams. When they have a choice, an athletic director must first decide if 2.41 wins in baseball is worth a coaching change, while also realizing 2.41 is a mean and results can differ greatly, especially with unproven coaches. Most variables signified an overall average increase in wins of less than one win per four years, making for a very small average difference in performance. As a result, it can be inferred that coaching changes occur at too high of a rate because changes require considerable time and financial resources with a likelihood of little return on investment (Adler et al., 2013). If a coaching change is imminent (e.g., coach leaves for a new job), athletic directors can utilize this

research to help them through the hiring process. For instance, athletic directors can place a premium on coaches with high ability (greater win differential) and adequate coaching experience while placing less emphasis on demographic or previous playing characteristics. Therefore, athletic directors should treat baseball coach hiring/firing practices differently than football or basketball coaches.

Coaches who desire elite jobs in collegiate baseball can also use this information to increase their chances of obtaining a position. One important aspect is to gain as much experience as possible, as coaches who were hired typically possessed 16 years in the coaching profession, with an average of 5 years head coach experience. Also, it is imperative that coaches maximize learning during each coaching experience. Specifically, gathering a wide array of field-specific knowledge is one aspect that can assist in a coach's career decision-making process (Krumboltz et al., 1976; Bosch, 2014). There are numerous choices when planning a head coaching career, and this study reinforces the importance of experience, which can lead to increased knowledge and better performance.

### *Limitations and Future Research*

Although this study was the first to analyze NCAA DI baseball in the succession literature, there are limitations. First, all participants were male. Therefore, results may not generalize to female coaches in a variety of sport settings. Also, results may not apply to NCAA Division II or III coaching changes because only Division I changes were studied. Additionally, because data collection involved retrieving archival data, coaches were not interviewed and personal reflections could not be considered. For example, some coaches may have preferred to live in warm weather climates or had family commitments that required them to turn down a certain position or accept another. Moreover, an analysis of position coaches and their impact on success was not conducted. Assessing position coaches in baseball could reveal significant findings relative to strategy and player development. Additionally, although the coaching change situation does appear to be manifest content, it is still possible the true reason for coach dismissal was hidden by athletic departments. Lastly, although there were a number of variables researched in this study, there are still many factors relating to a coach or institution that could expand the coach succession literature. This could include a coach's relationship with his players or athletic director, as well as recruiting specifics such as the type of player targeted and the specific area that a coach typically recruits. Investigations of conference dominance (e.g. Southeastern Conference) and attendance patterns could also reveal unique findings.

Future research should analyze variables specific to a coach's previous learning experience. For example, researchers could analyze the win/loss record of coach's mentors to see the impact of learning from successful vs unsuccessful coaches prior to being hired. Additionally, researchers could add a qualitative component to future studies to gain thick and rich descriptions of coaching experiences relative to conference success.

## **Conclusion**

This study contributed to the succession literature by being the first to examine the conference win/loss record of an NCAA Division I men's baseball coach following a coaching change. Analysis of 23 factors indicated coach ability, experience, and previous success of the program significantly impact coach performance. Perhaps most importantly, this study

contributed to coach succession by heeding the advice of Giambatista and colleagues (2005) and expanding upon the three foundational theories used to explain coach succession. Social learning theory provided insight into antecedent factors that impact coach success and are ultimately explained by the post-succession results identified within the foundational theories.

Pragmatically, there are three primary implications: Coaching changes in baseball are more nuanced and occur at a lower rate compared to revenue sports like basketball; a coach's ability, previous experience, and prior success of the program are significant indicators of conference win differential following a coaching change; and, the average change in wins following a coaching change is small to nonexistent. Similar to previous research in both collegiate and professional settings, this study confirmed ritual scapegoat theory, indicating the outcome of a coaching change has minimal impact on team performance (Smart et al., 2008; Johnson et al., 2017; Pierce et al., 2017).

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