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Who should we hire: Examining coaching succession in Division I women's basketball

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Abstract

The purpose of this study was to evaluate the performance of newly hired coaches in relation to their predecessors, and utilize the analysis to provide guidance to decision makers in college athletic departments. This study examined 185 coaching changes in Division I women's basketball in 16 conferences between 2000 and 2009. Data were collected from online sources including institutional websites, media guides, and media articles. Latent class analysis was employed to reduce the data to one item per factor. Factors included demographics, coaching ability, coaching experience, past team performance, hiring factors (coaching level change, inside/outside hire, interim, conference affiliation), and institutional factors (public/private, demographic market area, enrollment, budget, and NACDA standings). Mixed models analysis was performed to identify which categories have a relationship with changes in the number of wins following a coaching change. Results suggest that past team performance was the strongest indicator of future performance after a coaching change.

Keywords

Analytics, coaching succession, intercollegiate athletics, National Collegiate Athletic Association, sport

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Introduction

Women's basketball plays an important role in Division I college athletics in the United States. With over 8.2 million people attending games, nearly 800 games broadcast on television, and over 3.1 million people tuning in for the National Championship game in 2015[1], Division I college basketball attracts more fans and viewers than any other women's intercollegiate sport[2]. The hiring of a head coach in women's basketball is an important decision for athletic directors. In addition to carrying the highest coaching salary and total team budget of any women's sport[3], a successful and entrepreneurially-minded coach can increase attendance, publicity, and corporate and donor support for the institution[4,5]. In turn, the commercial value of a women's basketball program could increase[2]. The 38-year tenure of Hall of Fame coach Pat Summitt at the University of Tennessee that produced 1,098 wins and eight national championships is a testament to the institutional brand building that can occur through women's basketball.

Coaching turnover is a regular occurrence across the landscape of Division I college athletics. In fact, there were 22 coaching changes in Division I women's basketball in 2015, and 11.5 coaching vacancies per year for the 16 conferences under examination in this study in the first decade of the 2000s[6]. The stakes are high for athletic directors making hiring and firing decisions because the decision can impact team success, reputation, attendance, and fundraising. As a result, the question of who to hire as the next coach captivates the minds of athletic directors, boosters, fans, media, and scholars. The purpose of this study was to examine what latent factor profiles best predict change in win differential for Division I women's basketball

coaches, and ultimately answer the question of what factors should athletic directors consider when hiring head coaching staff to ensure successful women's basketball programs.

The impact of coaching succession on team performance has been extensively studied in the strategic leadership and sport management literature[7-9]. Researchers have explored a variety of sport settings including European football, American football, professional baseball, hockey, and American intercollegiate sports to determine the impact of coaching succession on team performance. These studies have sought to determine whether or not team performance is impacted as a result of hiring a new coach, and whether an athletic director or general manager should make a coaching change to improve team performance. Findings have resulted in the development of three primary theoretical frameworks to explain the competing impacts of succession on team performance[9]. Some scholars have found support for common sense theory, which posits that new coaches positively impact team performance[10]. Other research supports vicious-circle theory, which suggests that new coaches negatively impact team performance[11]. The final framework is ritual scapegoating theory, which argues that new coaches do not make any impact on team performance[12].

Common sense theory posits that improved performance should be expected when a new coach is hired to lead an already poor-performing team[11]. Team performance is believed to improve based upon the positive psychological and motivational effect on players, provided by the turnover in leadership[13, 14]. Improved performance has been particularly evident over the short-term, especially in mid-season coaching changes, but the impact tends to dissipate in the long-term[15]. Allen, Panian, and Lotz[10] offered compelling support for common sense theory, finding that between-season coaching changes in Major League Baseball had a more positive effect on team performance than changes that occurred within the season. More recently,

White, Persad, and Gee[16] found that mid-season changes in the National Hockey League resulted in improved performance even when the new coaches were less experienced than the coach who was fired.

In contrast to common sense theory, vicious-circle theory posits that new coaches worsen performance because the circumstances surrounding hiring a new coach disrupt team routines and bring instability, tension, and low employee morale[11, 17]. As a result, team performance fails to improve, and the succession process starts anew. Fizel and D'Itri[18] examined the performance of men's college basketball teams over an eight-year period and found that team performance typically declined. Other studies exploring the National Hockey League and English soccer have demonstrated that managerial succession has a negative impact on team performance[19, 20]. Soebbing and Washington[17]provided evidence that team performance following a coaching change in NCAA college football decreases in the short term before the coach is able to impact performance in a positive manner. The inclusion of time is important for studies examining performance in college sports due to the ability to recruit new talent and retain them for up to four years. Andersen[7] concluded his review of the literature by stating, "a new manager does not make a better team" (p. 167).

While some evidence has been found to support common sense and vicious-circle theories, there is other empirical evidence to suggest that coaching changes have no (or very little) effect on team performance because coaches are constrained by player talent, labor agreements, and player personnel decisions[12, 9]. This phenomenon has been termed ritual scapegoat theory and implies that success or failure of the team is incorrectly attributed to the coach[21]. When the team loses, management can appease upset stakeholders by making the fired coach the ritual scapegoat[12]. Brown[22] examined professional football in the 1970s and found

that changing coaches between seasons did not impact team performance for NFL teams. Similarly, Cannella and Rowe[23] examined 30 years of between-season managerial changes in Major League Baseball and found that changing managers had no direct impact on team performance. However, the context of college sports is different in light of the important role that coaches play in acquiring talent through recruiting student-athletes[24].

       While these theories offer a framework for understanding the relationship between succession and team performance, they fail to explain what characteristics predict which coaches will be successful in their new position. Put differently, the bulk of academic scholarship on coaching succession has focused on whether or not it is advisable to replace a coach, but it does not answer the question of what characteristics an athletic director should value when hiring a new coach. Previous research has focused mostly on the question of *should I fire*, as opposed to *whom do I hire*. As a result, some researchers saw an opportunity to shift their focus to address how coaching ability and experience could impact team performance following a coaching change[23]. As Pfeffer and Blake[25] noted, merely knowing that succession has occurred is not an adequate basis for predicting its consequences. Scholars working from this framework have been more focused on the characteristics that predict successful new coaches compared to the previously discussed research that has attempted to determine whether there is a benefit to firing a coach. Once the decision is made to make a coaching change, athletic directors and general managers are more concerned with data that can lead to hiring the best coach in the applicant pool. In many cases these administrative decision-makers have no choice but to hire a new coach in instances where the coach retires, takes a new position, or performs so poorly that the pressure to replace the coach becomes insurmountable[21].

The research that has addressed the *whom should I hire* question has focused on the ability, experience, and previous position held by the newly hired coach. Born from social learning theory[26, 27], the concept that more experience helps to build skills is one that is widely used when assessing potential job candidates, or when determining one's career path[28]. It is assumed that as one gains experience, they learn what to do (or not to do) in specific contexts. In coaching, for example, coaches may learn what leadership styles work with specific types of players, or what level of resources are needed to meet a particular threshold of success. Similarly, the more coaching experience one has, the more they could be influenced by role models or mentors that help to shape their professional philosophy[29, 30]. Through these social interactions and differing learning experiences, coaches would enhance their coaching practice, which would be reflected in their win-loss records.

Using these concepts from social learning theory, Pfeffer and Blake[25] pioneered the *whom should I hire* coaching research when they examined the effect of successors' abilities in the National Basketball Association. Pfeffer and Blake defined ability by the prior cumulative win-loss percentage of the coach, a dummy variable for whether or not they had previously coached professional basketball, and the change in performance generated by the coach in previous positions. When not taking into account the ability of the coach, the authors did not find a significant effect for succession, which supported ritual scapegoating theory. However, when taking into account the coach's ability, the authors found a significant effect. Coaches with better prior win-loss records, coaches with previous experience, and coaches who had improved the performance of other teams were associated with better team performance after the coaching change.

In a similar study, Canella and Rowe[23] examined the effect of ability and experience on the results of succession in Major League Baseball. Similar to Pfeffer and Blake[21], Canella and Rowe found that managerial succession did not have any effect on team performance, supporting ritual scapegoating theory[23]. However, the authors found that teams with managers of higher ability (i.e. high prior winning percentage as a manager) performed better than managers with lesser ability, but that experience (i.e. whether or not they had managed in the past) did not make a difference.

Whether to hire an internal or external successor has also been examined[31]. Adding to this stream of literature, Ehrhardt, McEvoy, and Beggs[32] addressed the question of whether it is better to hire from within the previous coaching staff (i.e. inside successor) or hire from outside the previous coaching staff (i.e. outside successor). Ehrhardt, McEvoy and Beggs found that outside successors, who were head coaches or assistant coaches at another institution, performed significantly better than inside successors during the four years after a coaching change. Bosch[33] also examined the role of inside/outside succession, as well as tenure, job level experience, and leader effectiveness on team performance in Division I men's college basketball. Bosch found that having experience as a head coach at a power conference school was the only significant predictor of an increase in winning percentage. In light of the research that has shown the ability, experience, and certain characteristics of coaches' impact on team performance after coaching changes, the following hypothesis was developed:

H1: Ability, experience, and characteristics of coaches will predict team performance following a coaching change.

While succession studies have examined variables such as ability, experience, and previous coaching position, they have been limited in their scope of variables that could predict

coaching success. Additionally, none of the coaching succession studies has focused on high-level women's sport, suggesting a gender gap in the literature. This study builds on the few coaching succession studies that do address *who to hire* by examining a much more comprehensive set of team, demographic, and institutional factors that are added to coaching experience and ability [23 total factors].

Method

Data and Sample

This study examined 185 coaching changes in Division I women's basketball in 16 conferences between 2000 and 2009. The conferences included in the study were the Atlantic Coast, Atlantic 10, Big 12, Big East, Big Ten, Colonial Athletic Association, Conference USA, Horizon, Ivy League, Mid-American, Missouri Valley, Mountain West, Pacific 12, Patriot, Southeastern, and West Coast. This time frame was chosen based upon the availability of data that could be collected from athletic department websites. The year 2009 was the final year of data collection because researchers collected four years of coaching performance data after the coaching change. The 16 conferences chosen were conferences that had competed in the largest number of NCAA tournament games during that time frame. Data were collected exclusively from online sources including athletic department websites, team media guides, media articles, the Equity in Athletics Disclosure Act database, and annual athletic department performance rankings on the website for the National Association for Collegiate Directors of Athletics. Data collection included all coaching changes across the time period, meaning every coaching change that occurred between 2000 and 2009 was included as an individual case, even if multiple changes happened at one institution.

Variables

Six categories were examined relative to the increase in number of wins following a coaching change. Three of these categories are specific to the new coach: 1) the coach's experience (which includes the level of the coach's previous job, years' experience as a coach, years' experience as a head coach, and level of experience as a competitor in basketball); 2) coach's previous performance categorized as: a) no head coach experience, b) coaches with previous head coach winning percentage higher than .634, and c) previous head coach percentage less than .634); and 3) the coach's demographic characteristics (age, education level, race, gender.) Three additional categories were examined that pertained to the program, which are: 4) hiring factors (if the coach came from a different level, internal vs. external hire, if the coach was an interim at the same program, and if the coach was from within the same conference); 5) characteristics of the institution (public vs. private, demographic market area, university enrollment, team budget, and NACDA standings); and 6) the previous success of the program (previous coach's winning percentage, number of WNBA draft picks, and previous coach's tenure). The variables and definitions are summarized in Table 1.

<Insert Table 1 about here>

The measures of team performance after the coaching change can be operationalized in several ways. The common way to define performance is winning percentage, so one dependent variable could be the average winning percentage for three seasons following the coaching change. A more parsimonious way to interpret the impact of the independent variables is to examine total net win differential (wins minus losses) for the three seasons following the change. For this study the primary method for identifying success is the net change in win differential from the three years prior to the coaching change to the three years

after the change. Total improvement in win differential was chosen as the primary variable over winning percentage due to the scale and interpretability of the results.

Data analysis

Each change was examined by category to determine which variables impact performance after a coaching change (SPSS, version 22). Mixed models was performed to employ restricted maximum likelihood algorithms to account for asymptotic models and to allow the integration of nominal and scale variables into the same model[34]. The next step would typically be to develop a general linear model that includes all items. However, based on the small number of coaching changes sampled, analysis using mixed models has limitations. The number of categorical variables and categories within each yields over 700 possible combinations, which is many times more than the number of cases in the sample. Therefore, it was necessary to reduce the number of variables prior to conducting further analysis. This study used Latent Class Analysis to reduce the data to one item per factor (similar to factor analysis with continuous data) due to the presence of both continuous and categorical data[35].

Latent Class Analysis allows for the analysis of data with a large number of variables with a smaller sample size, and the resulting groups mirror common practice when describing a group of items. For example, when describing groups, it is common to use more general descriptors, such as describing an institution as a public university with a large budget or describing a head-coach candidate as young and inexperienced. Thus, Latent Class Analysis (LCA) is a statistical procedure that is used to classify individuals into homogeneous subgroups[35]. In contrast to correlational analysis used in exploratory factor analysis, LCA identifies relationships through examination of conditional probabilities of certain response profiles to the factor items. Individual class membership is assigned based on the strength of

probability that the class exists (latent class prevalence) and the strength of probability the class exhibits a predictable response profile[35, 36].

Three categories of data were reduced using M-Plus[36] following LCA procedures defined by Geiser[35] (see below for further description). Using these class assignments for each case along with the single variable measuring previous coaching success, mixed model analysis was performed to identify which categories have a relationship with changes in the number of wins following a coaching change.

Results

The first step prior to data analysis was to identify any outliers. Two cases were removed: one case was removed for an excessive negative value on the dependent variable, and a second case was removed due to excessive influence on the results during step one. The mean of the dependent variable, total number of wins less total number of losses for the three years following the coaching change, was -.890, so just short of one-third of a game each year. The descriptive results for all variables are included in the 'Total Sample' column of Table 2.

<Insert Table 2 about here>

The first phase of analysis was to examine which categories were related to an increase of wins following a coaching change. This phase of analysis was done by examining the relationship of items within each a priori category to the net change in win differential for the three years prior to and three years following a coaching change. Table 3 includes regression results for each category. Interpretation of these results should only be done within categories.

<Insert Table 3 about here>

Examining the results in Table 3, there are only four variables that are significantly related to the change in wins following a coaching change. The only candidate-related variable

that was significant was years of experience. The coefficient for years of experience is 0.866, meaning that one year of experience was related to almost one more win over a three-year period. The only significant variable for the institution, team budget/expense, has a coefficient of -0.0000398. The interpretation is that for schools that have a dollar more in team expense, the number of wins is less by a small amount. However, if the measure was converted to one million dollars, then there are 3.98 fewer wins following a coaching change. Two variables measuring the past success of the program were significant. The average wins per season of the previous coach were significant, with a coefficient of -3.012. Interpreted simply, the more wins by the previous coach, the higher chance that wins will decrease following a coaching change. Additionally, programs with more success in having players drafted are more likely to increase wins following a coaching change ($B = 2.054$).

As stated above, an analysis with all the items could be conducted next, however the generally low number of cases prevents accurate calculation of such a large model[38]. For all of the variables in this analysis, there would be over 700 different class group possibilities, but only 182 usable cases in the data set. In order to examine the impact of each of these categories, the number of variables needs to be reduced.

Data reduction with continuous and discrete, Likert-type scales is common using procedures such as factor analysis. However, categorizing data with nominal or dichotomous data is more complicated. For this study, the procedures of Latent Class Analysis were employed (see 35 for further discussion). Where data reduction with exploratory factor analysis is designed to determine the categories of variables, LCA is designed to determine the number of classes within each category. The variables within this analysis are already categorized due to their descriptive nature (i.e. demographic variables, experience variables, etc.). Therefore,

exploratory LCA was used to empirically determine the best number of classes within each category. Analysis of each category was conducted with multiple class numbers (e.g. analysis with 3 classes, then 4, etc). The most appropriate number of classes was determined by examining the Pearson's chi-square values and likelihood ratios of each class number. Further comparisons of models were done using bootstrapping comparisons of the likelihood ratios and the AIC, BIC and adjusted BIC of each model. The results indicate that coach's demographic and coach's experience categories both have three classes. Hiring factors, institution characteristics, and program's previous success factors all have four classes.

Once the number of classes was determined, a final LCA was conducted within each category to generate predicted class membership for each case. This membership value can then be used for further analysis to determine if the membership group demonstrates any significant variance in the dependent variable. The result of the LCA and corresponding descriptions can be found in Table 2.

The classes of demographic groups of new women's head coaches can be described as: 1) young (mean age=36), primarily female (80.6%); 2) white (97.1%), mid-aged (mean = 49) mixed gender (F = 52.9); and 3) older males (mean = 67). The experience classes can be described as: 1) no-head coach experience (100% of class); 2) head coaches with lower level of experience (100% head coach, mean years head coach experience = 5.38); and 3) head coaches with the highest level of experience (mean years head coach experience = 13.9). The hiring factor broke into very clear classes: 1) external from the same level (100%); 2) external from one level up (i.e. Power 5 conference to "mid-major") (100%); 3) external from one level down (i.e. mid-major to Power 5 conference) (100%); and 4) internal (conference affiliation was not important to class membership) (interim = 32%, internal not interim = 68%).

Institution characteristics were divided primarily by funding (private vs. public), and by team expenses: 1) private schools with small to moderate budgets (private = 100%, mean expense = $1,038K); 2) public schools with the smallest budget (public = 100%, mean expense = $911K); 3) public schools with moderate budgets (public = 100%, mean expense = $1,124K); and 4) large primarily public schools with the largest budgets (public = 83.1%, mean expense = $2,092K).

Previous program success classes can be described as: 1) programs with moderate success (previous win% = .617) and average of draft picks (picks = 2.37); 2) low success (previous win% = .369) and very few draft picks (mean picks = .80); 3) over a decade with previous coach (mean tenure = 13yrs), largest number of draft picks (mean picks = 12.5); and 4) longest tenure of previous coach (mean tenure = 19.5yrs), moderate draft picks (mean picks = 3.42).

These classes were then used in a mixed models analysis of the overall change in wins from three years prior, to three years after, the coaching change. The results of this analysis can be seen in Table 4. The only significant category that related to change in wins was previous success of the program. Programs of moderate to moderately high success tended to have the largest decrease in wins following a coaching change. The only class that indicated a positive change in wins was the programs of lowest previous success. It is important to note that the changes are minimal. For example, the programs of lowest success had an increase of 4.2 games over 3 years. The change of little more than one game a year is not generally seen as a great impact on perceptions of team performance. For example, accounting for and holding constant all items in the model, a team with 8 wins and 22 losses (near the mean winning

percentage of this class; .363) would only expect to improve to 9 wins and 21 losses (winning

percentage of .429).

<Insert Table 4 about here>

The results of the linear mixed models analysis differ from the initial results in Table 3.

The only variable attributable to the coach that has significant relationship to a change in wins

following a coaching change is years of experience. However, this lone significant result in the

within-category analysis was not strong enough to create significance for the between-factor

class analysis when controlling for past team performance. Similarly, team expense was not

strong enough to create significance for the institution category in the mixed models analysis.

Discussion

Despite much of the existing literature indicating that coaches are scapegoats for losing

and that coaching changes do not translate to more wins[7, 20-22], intercollegiate athletic coaches

are routinely replaced for low performance. Pressure from students, fans, alumni, and a variety

of other stakeholders often leave an athletic director with little choice but to replace a coach,

especially in instances where winning is at a premium. In the wake of these changes, athletic

directors and hiring committees must evaluate a variety of factors to hire a coach that can

achieve the desired level of success. While winning at the elite level of college sports is the

primary evaluative factor often used in firing decisions[9, 21, 39], winning as a dependent variable

in academic research has only been examined in relation to a few isolated independent

variables. This study broadened those factors and examined a total of 23 independent variables

within six categories to determine which variables are most likely to predict success.

Results of the regressions for each category revealed that coaching experience positively

predicted team performance after the coaching change. However, the result indicated that three

years after a coaching change, only one more win would be expected from hiring an experienced coach versus an inexperienced coach. Although one win could make a difference for tournament implications or other scenarios, it is doubtful that an athletic director or other stakeholders would be happy with an increase of one win over the course of three years. So, pragmatically, hiring a coach with more experience is statistically significant, but may not be as impactful as hoped by stakeholders, at least in terms of winning. Beyond this, after controlling for institutional factors and past team performance in the mixed models analysis, none of the characteristics of the coach aided in the ability to predict performance. Thus, the hypothesis was rejected.

The only significant predictor of win differential when considering the six categories was the past performance of the team, as measured by winning percentage of the previous head coach. Teams generally regressed towards the mean in a statistically but not practically significant manner. While other studies have found that characteristics such as ability and experience of the coach significantly predict performance after a coaching change, no study to date has included the breadth of variables included in this study. The results primarily support ritual scapegoat theory in light of the pragmatically insignificant impact that coaching changes made on team performance and the insignificant role played by the characteristics of the coaches. Although there are isolated examples of coaching changes making dramatic differences in a program, those cases are not normal. Betting on such a dramatic change in women's Division I basketball, especially considering the findings of this study, is a gamble on the part of athletic directors and other stakeholders.

Coaching characteristics examined in this study have very little relationship to an increase in winning, which supports ritual scapegoating. Whether it is demographics, level of

experience (college, professional, etc.), previous winning percentage, or origin of their hire (lower tier, internal, conference affiliation, etc.), women's Division I coaches have approximately the same success - assuming they step into similar contexts. Even though the factors that are most related to changes in wins are not related to the coach, there are environmental conditions to consider. Specifically, the landscape of the program making the change (i.e., program's previous success) was the only latent class significantly related to a change in wins.

Context was important in that both high and low performers moved toward the mean. Coaches who replaced previously successful coaches tended to do worse than their predecessors, which supports vicious circle theory. Coaches replacing a program with limited success showed an increase in wins, supporting common sense theory. These results were intuitive and follow previous research[10, 16] that indicates that changes in coaching tend to move struggling programs toward the overall mean. However, it is once again important to distinguish between statistically significant and pragmatic findings. For example, the programs of lowest previous success had an increase of 4.2 games over three years. The change of little more than one game a year is not generally seen as a large improvement on team performance. For example, accounting for and holding constant all items in the model, a team with 10 wins and 20 losses would only expect to improve to 11 wins and 19 losses the following season.

Limitations and future recommendations

There are some limitations that suggest caution when interpreting the results. First, although this study examined more variables than other coaching succession studies, there are still many variables that were not investigated. For example, the individual personalities of the coach, as well as the relative fit between coach and institution, could provide more specific

perspectives on program success. Recruiting and player talent assessments, particularly during

the time of coaching transition, could also provide another layer of analysis. Future research

could expand coaching succession inquiry by increasing the number and types of variables

examined. The inclusion of political skill in coaching research, for example, may help to better

clarify the relationship between social effectiveness characteristics and coaching success.

Relationships are unavoidable aspects of life and coaching, and success in both realms comes in

part from an ability to engage in meaningful and productive social interactions. In short, success

in life and coaching is likely to be linked to social effectiveness. Hence, politically skilled

coaches may be better recruiters, coaches, and talent managers because they "understand other

individuals and situations, sense what is expected of them, manage shared meaning, and

influence others in ways that help them better achieve recruitment goals"[40, p. 1293]. Indeed,

several studies[40, 41] have explicitly shown how politically skilled coaches were better able to

land desired recruits than less politically skilled coaches. So, in future studies looking at

coaching, recruiting, and performance success, the social effectiveness characteristics of

coaches, such as their levels of political skill, appear to be an area ripe for further exploration.

Second, this quantitative study is meant to generalize results across all coaching changes. There

are certainly coaching successions that do not fall in line with the trends found in this study.

Isolating these outliers was not part of the analysis. Finally, the analyses in this study are

limited by confounding factors. For example, large institutions with big budgets tend to hire the

most successful and experienced coaches and thus there are many factors that are included in

the net change in wins. There is extreme difficulty in isolating the effects of one variable, even

using large models with multiple factors and items. Some of the confounding effects are lost in

the LCA process. Future research in this area should include a class analysis perspective along

with multi-variable correlational analysis, such as structural equation modeling with class analysis given a larger sample size.

Finally, the study could also be replicated and expanded by investigating other sport contexts (e.g., men's basketball, football, Olympic sports), as well as different NCAA divisions. These differing contexts may demonstrate findings inconsistent with women's Division I basketball. Additionally, incorporating qualitative or mixed methods designs to better understand the specific programs and coaching changes from institution to institution would shed light on the unique contexts associated with coaching changes. Utilizing a case study approach would allow for the isolation of critical factors in high and low performing contexts.

Conclusion

In the competitive environment of NCAA Division I sports, it is clear that pressures to change leadership often occur. The results of the current study largely support ritual scapegoating theory as an explanation for coaching changes within NCAA Women's Division I basketball. Essentially, it can be reasoned that changing coaches does not produce enough of a practical difference to justify the time, energy, and potential impact on student-athletes to make the change worthwhile, especially if the change is mostly due to athletic performance. When coaching changes do occur, it is clear that the most important variable to predict changes in winning is the program's previous success, and not the individual characteristics of the coach. However, changes in winning percentage are relatively small with the most impactful changes producing only one more or less win over the course of three years following the coaching change.

References

(1)   NCAA. Women's basketball championship a success across multiple platforms, http://www.ncaa.com/news/basketball-women/article/2015-04-20/womens-basketball championship-success-across-multiple (2015, accessed December 31, 2015)

(2)   Ackerman V. Division I women's basketball white paper prepared for the NCAA, http://www.ncaa.org/sites/default/files/NCAAWBBWHITEPAPER_0.pdf (2013, accessed December 31, 2015).

(3)   NCAA. Revenues & expenses 2004-2012: NCAA Division I Intercollegiate Athletics Programs Report, Indianapolis, IN: NCAA, 2013.

(4)   Weight E, and Cooper CG. An entrepreneurial beginning: Recognizing the value of "nonrevenue" programs through NCAA administrator and coach perceptions. *International Journal of Sport Management* 2012; 13(3): 285-308.

(5)   Weight EA. The surviving wrestling coach: The role of the entrepreneurial coach in intercollegiate "non-revenue" sports. *The International Journal of Sport Management* 2010; 11: 16–30.

(6)   ESPN. Coaching change rundown, http://espn.go.com/womens-college-basketball/story/_/id/12729994/women-college-basketball-coaching-carousel (2015, accessed December 31, 2015).

(7)   Andersen J. A new sports manager does not make a better team. *International Journal of Sports Science & Coaching* 2011; 6(1): 167-178.

(8)   Giambastista R, Rowe W, and Riaz S. Nothing succeeds like succession: A critical review of leader succession literature since 1994. *The Leadership Quarterly* 2011; 16: 963-991.

(9)   Rowe WG, Cannella A, Jr, Rankin D et al. Leader succession and organizational performance: Integrating the common-sense, ritual scapegoating, and vicious-circle succession theories. *The Leadership Quarterly* 2005; 16: 197-2-19.

(10)   Allen M, Panian S, and Lotz R. Managerial succession and organizational performance: A recalcitrant problem revisited. *Administrative Science Quarterly* 1979; 24: 167-180.

(11)   Grusky O. Managerial succession and organizational effectiveness. *American Journal of Sociology* 1963; 62: 21-31.

(12)   Gamson W, and Scotch N. Scapegoating in baseball. *American Journal of Sociology* 1964; 70: 69-72.

(13)   Bennet G, Phillips J, Drane D, et al. The coaching carousel: Turnover effects on professional sport. *International Journal of Sport Management*, 2003; 4(3): 192-204.

(14)   White P, McTeer W, and Persad S. Manager/coach midseason replacement and team sport performance in professional team sport. *Journal of Sport Behaviour* 1995; 18: 58-68.

(15)   Lago-Penas C. Coach midseason replacement and team performance in professional soccer. *Journal of Human Kinetics* 2011; 28: 115-122.

(16)   White P, Persad S, and Gee C. The effect of mid-season coach turnover on team performance: The case of the National Hockey League. *International Journal of Sports Science & Coaching* 2007, 2(2): 143-152.

(17)   Soebbing B and Washington M. Leadership succession and organizational performance: Football coaches and organizational issues. *Journal of Sport Management* 2011; 25: 550-561.

(18)   Fizel J and D'Itri M. Managerial efficiency, managerial succession and organizational performance. *Managerial and Design Economics* 1997; 18: 295-308.

(19)   Audas R, Dobson S, and Goddard J. Team performance and managerial change in the english football League. *Economic Affairs* 1997; 17: 30-36.

(20)   Audas R, Dobson S, and Goddard J. The impact of managerial change on team performance in professional sports. *Journal of Economics and Business* 2002; 54: 633-550.

(21)   Dohrn S, Lopez YP, and Geinhardt G. Leadership succession and performance: An application to college football. *Journal of Sport Management* 2015; 29: 76-92.

(22)   Brown MC. Administrative succession and organizational performance: The succession effect. *Administrative Science Quarterly* 1982; 27: 1-16.

(23)   Cannella A and Rowe W. Leader capabilities, succession, and competitive context: A study of professional baseball teams. *The Leadership Quarterly* 1995; 6(1): 69-88.

(24)   Magnusen MJ, Kim YK, Perrewé PL, et al. A critical review and synthesis of student-athlete college choice factors: Recruiting effectiveness in NCAA sports. *International Journal of Sports Science & Coaching* 2014; 9: 1265-1286.

(25)   Pfeffer J and Davis-Blake A. Administrative succession and organizational performance: How administrative experience mediates the succession effect. *Academy of Management Journal* 1986; 29(1): 72-83.

(26)   Bandura A. *Social learning theory*. General Learning Corporation, 1971.

(27).   Bandura A. *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall, 1986.

(28)   Krumboltz JD, Mitchell AM, and Jones BG. A social learning theory of career selection. *The Counseling Psychologist* 1976; 6(1): 71-81.

(29)   Chartrand JM, Robbins SB, Morrill WH, et al. Development and validation of the career factors inventory. *Journal of Counseling Psychology* 1990; 37: 491-501.

(30)   Erickson K, Côté J, and Fraser-Thomas J. Sport experiences, milestones, and educational activities associated with high-performance coaches' development. *Sport Psychologist* 2007; 21(3): 302-316.

(31)   Bidwell M. Paying more to get less: The effects of external hiring versus internal mobility. *Administrative Science Quarterly* 2011; 56: 369-407.

(32)   Ehrhardt K, McEvoy C, and Beggs B. Successor type and coaching performance in intercollegiate football. *International Journal of Sport Management* 2011; 12: 288-300.

(33)   Bosch D. Organizational leader selection: The impact of tenure, job level experience, and being an insider on effectiveness. *International Journal of Business, Humanities, and Technology* 2014; 4(1): 10-18.

(34)   SPSS. *Linear mixed-effects modeling in SPSS: An introduction to the mixed procedure*, SPS Technical Report, Chicago, 2012.

(35)   Geiser C. *Data analysis with Mplus*. New York: Guilford Publications, 2013.

(36)   Clogg CC. *Latent class models. Handbook of statistical modeling for the social and behavioral sciences*. Springer US, 1995, 311-359.

(37)   Muthen LK and Muthén L. *Mplus* [Computer Software], Los Angeles, CA, 2010.

(38)   Byrne B. *Structural equation modeling with EQS*. Manwah, NJ: Lawrence Earlbaum Associates, 2006.

(39)   Holmes P. Win or go home: Why football coaches get fired. *Journal of Sports Economics* 2011; 12(2): 157-178.

(40)   Magnusen MJ, Kim, YK, and Perrewé PL. Gaining a competitive edge when recruiting student-athletes: The role of political skill. *International Journal of Sports Science & Coaching* 2014; 9: 1291-1310.

(41)   Treadway DC, Adams G, Hanes TJ, et al. The roles of recruiter political skill and performance resource leveraging in NCAA football recruitment effectiveness. *Journal of Management* 2014; 40: 1607- 1626.

Table 1

Grouping Factors and Individual Variables with Category Descriptions

Factor and Items		Descriptions
Coach's Demographic Classes		Demographic characteristics of the newly hired coach
Education level	Bachelor	
	Master	
Minority status	White	
	Minority	
Gender	Female	
	Male	
Age	*(means)*	
Coach's Experience Classes		
Playing experience	College	Highest level of playing experience for the head coach
	Professional	
	No Pro or College	
Previous job	Assistant Coach	Coach did not have head coaching experience
	Head Coach	Coach had head coaching experience
Years coaching	*(means)*	Years of coaching experience
Yrs head coach	*(means)*	Years of head coaching experience
Coach's Ability		
Previous Head Coach Win Categories	None (Assist. Only)	All coaches with no experience as head coach
	Higher win %	Coaches with higher than .634 win % as HC
	Lower win %	Coaches with lower than .634 win % as HC
Hiring Factors		
Level hired from	One level down	Previous school was at lesser competitive level
	Same level	Previous school was at same competitive level
	One level up	Previous school was at higher competitive level
Origin of the coach	Interim	Coach hired after being interim coach
	Internal, not interim	Coach hired from the prior coaching staff
	External	Coach hired from outside the university
Conference affiliation	Yes	Did the coach have experience coaching
	No	previously in the same conference?
Institution Characteristics		
Funding source	Private	Private or public school
	Public	
Market DMA	*(means)*	Demographic market area rank based on geocommons.com
Team expense	*(means)*	Team budget from Equity in Athletics Disclosure report
NACDA rank	*(means)*	NACDA directors cup ranking
Enrollment	*(means)*	Total institutional enrollment
Program's Previous Success		
Coach's tenure	*(means)*	Previous coach's tenure (years)

| Coach's wins | *(means)* | Previous coach's wins per season |
| WNBA Picks | *(means)* | Total number of WNBA draft picks |

Table 2

Descriptive Statistics by Group Classes

Factors, Items and groups		Means or Response Percentages (bold numbers represent group descriptors)				
		Total Sample	Group 1	Group 2	Group 3	Group 4
Coach's Demographic Classes	*n=*	182	134	34	14	
Education level	Bachelor	59.3	58.3	61.8	75.0	
	Master	40.7	41.7	28.2	25.0	
Minority status	White	77.5	72.9	**97.1**	75.0	
	Minority	22.5	27.1	2.9	25.0	
Gender	Female	27.5	**80.6**	52.9	0.0	
	Male	72.5	19.4	47.1	**100**	
Age	*(means)*	39.16	**36.03**	49.18	**67.00**	
Coach's Experience Classes	*n=*	182	64	60	58	
Playing	College	74.7	70.3	81.7	72.4	
experience	Professional	12.6	17.2	13.3	6.9	
	No Pro or College	12.6	12.5	5.0	20.7	
Previous job	Assistant Coach	47.8	**100**	23.3	15.5	
	Head Coach	52.2	0.0	76.7	84.5	
Years coaching	*(means)*	14.55	10.67	11.95	21.53	
Yrs head coach	*(means)*	6.12	0.0	**5.38**	**13.90**	
Coach's Ability		182				
Previous Head	None(Assist. Only)	35.7	100	0	0	
Coach Win	Higher win %	31.9	0	100	0	
Categories	Lower win %	32.4	0	0	100	
Hiring Factors	*n=*	182	79	39	39	25
Level hired	One level down	21.4	0	0	**100**	0
from	Same level	57.1	**100**	0	0	**100**
	One level up	21.4	0	**100**	0	0
Origin of the	Interim	4.4	0	0	0	**32**
coach	Internal, not interim	9.3	0	0	0	**68**
	External	86.3	**100**	100	100	0
Conference	Same conference	27.5	22	4	9	25
affiliation	Diff. conference	72.5	57	35	30	0
Institution Characteristics	*n=*	182	61	45	17	59
Funding source	Private	63.2	**100**	0	0	16.9
	Public	36.8	0	100	100	83.1
Market DMA	*(means)*	49.63	30.39	59.09	48.76	62.54
Team expense	*(means)*	$1356K	$1,038K	**$911K**	**$1,124K**	**$2,092K**
NACDA rank	*(means)*	107.63	146.6	140.1	135.1	34.6
Enrollment	*(means)*	16,265	**6,948**	16,273	17,102	**25,649**
Program's Previous Success	*n=*	182	52	89	17	24
Coach's tenure	*(means)*	8.24	6.46	5.34	**13.00**	**19.50**

Coach's wins	*(means)*	.496	.617	**.369**	.652	.587
WNBA Picks	*(means)*	2.69	2.37	**0.80**	**12.53**	3.42

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Table 3

Regression Results by Category

Categories and Items	F Test	Sig.
Coach's Demographic Characteristics (R^2=.015)		
Education level	0.018	.892
Minority status	0.412	.521
Gender	0.051	.821
Age	1.340	.249
Coach's Experience (R^2=.044)		
Coach's previous playing experience	1.124	.327
Coach's previous job	1.264	.262
Number of years coaching	4.681	.032**
Number of years as a head coach	1.012	.316
Coach's Ability (R^2=.010)		
Previous Wins Categorized	0.882	.416
Hiring Factors (R^2=.011)		
Level coach hired from	0.405	.668
Origin of the coach	0.463	.630
Conference affiliation	0.157	.692
Institution Characteristics (R^2=.117)		
Funding sources/Public or private	1.439	.232
Market DMA	1.162	.283
Team expense budget	5.224	.023**
NACDA ranking	1.485	.225
Institution's overall enrollment	0.172	.679
Program's Previous Success (R^2=.221)		
Previous coach's tenure	0.265	.608
Previous coach's wins per season	43.731	.000**
Number of WNBA Picks	14.161	.000**

Table 4

Mixed Models Analysis

Categories and Items	Mean of DV	F Test	Sig.
Coach's Demographic Characteristics		1.077	.343
Coach's Experience		1.566	.212
Coach's Ability		.983	.370
Hiring Factors		.793	.531
Institution Characteristics		1.178	.298
Program's Previous Success		10.527	.000
Group 1	-16.31		
Group 2	4.19		
Group 3	-1.06		
Group 4	-9.41		

\# - reference group, other group significance in related to group 1