

Human Capital Stability: The Influence of Overlapping Tenure on the Performance of NCAA Football Teams

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This study examines knowledge sharing that comes as a result of the stability of relationships among people in organizations. Specifically, this study examines relationships among the overlapping tenure of coaches with their players, player task behaviors, and performance of both offensive and defensive units of NCAA football teams. The results show significant relationships between overlapping tenure and unit performance and between overlapping tenure and behaviors. Additionally, player task behaviors had a positive influence on unit performance. Finally, player behaviors mediated the relationship between overlapping tenure and performance.

INTRODUCTION

Human resources (i.e., people) and their interpersonal relationships have been shown to be important to the success of organizations (e.g., Hatch & Dyer, 2004; Hitt, Bierman, Shimizu, & Kochar, 2001; Inkpen & Tsang, 2005; Kase, Paauwe, & Zupan, 2009; Reagans, Argote, & Brooks, 2005; Wright & McMahan, in press; Wright, McMahan, & McWilliams; 1994). Specifically, the stability of relationships among managers and employees is an important factor that contributes to organizational performance (e.g., Harris, McMahan, & Wright, in press; Inkpen & Tsang, 2005; Leana & Van Buren, 1999; Nahapiet & Goshal, 1998; Reagans et al., 2005). In smaller organizations, the stability of relationships among managers and employees that facilitates knowledge sharing is particularly important (Goswami, McMahan, & Wright; 2006). In this study we examine the stability of relationships between coaches and players on offensive and defensive units of National Collegiate Athletic Association (NCAA) American football teams and test their relationships with players' task behaviors and offensive and defensive unit performance.

The stability of relationships among individuals facilitates greater rapport, friendship, and chemistry among individuals in an organization (Inkpen & Tsang, 2005). This stability allows people to gain a greater understanding of the work they are performing, the people they are working with, and how their individual work contributes to the work of others (Faraj & Sproull, 2000; Subramaniam & Youndt, 2005). Therefore, stable relationships encourage the sharing of knowledge among people in the relationship which may facilitate greater performance (Reagans et al., 2005). If units are able to maintain members they may develop long-lasting interpersonal relationships (Inkpen & Tsang, 2005). Ultimately, when units encourage stable tenure, they may perform better than organizations that only focus on individual

contributions (Leans & Van Buren, 1999). To examine the stability of relationships, we measure overlapping tenure, which is the amount of time coaches have been with the players on the team (Harris, McMahan, & Wright, in press).

In organizations, labor is divided both horizontally and vertically. With football teams, labor is divided horizontally by offensive and defensive units and vertically by coaches and players. These units have different coaches and players; therefore different relationships are built among defensive coaches and defensive players and between offensive coaches and offensive players. Additionally, players on offensive and players on defensive are expected to exhibit different behaviors that lead to performance outcomes. In this study we examine the influence of overlapping tenure on the different behavioral and performance outcomes of offensive and defensive units. Therefore, we contribute to human resource management by focusing on the different behaviors and performance outcomes of different units within the same organization.

In this study, we follow a systems perspective (Delery & Shaw, 2001; Wright & McMahan, 1992, Wright & Snell, 1991) and literature on interpersonal relationships and knowledge sharing. The systems perspective states the influence of people on performance acts as an input, throughput, output system. In this system, characteristics of people (i.e., interpersonal relationships) are the inputs that are transformed through the behaviors (throughput) of the people into an output of performance (Wright & Snell, 1991). Following these theories, we contribute to human resource management research by examining task behaviors as mediators of the overlapping tenure – performance relationship.

THEORETICAL BACKGROUND AND HYPOTHESES

Interpersonal Relationships

As mentioned previously, the relationships between people in organizations have been recognized as an important element in the success of organizations (Makela & Brewster, 2009; Inkepn & Tsang, 2005; Kase, et al., 2009; Reagans, et al., 2005). Interpersonal interactions between people during their daily work in organizations can be fundamental to the way the work of the organization is accomplished (Mintzberg, 1973). For example, interpersonal relationships may serve as an avenue for knowledge sharing to occur (Brass et al., 2004; Cummings, 2004; Gagne, 2009; Nahapiet & Goshal, 1998). Interpersonal relationships can form between many different parties in organizations, such as employees and managers.

Interpersonal relations have been broken down into three different types of relations: structural, affective, and cognitive (Nahapiet & Goshal, 1998). The structural aspect refers to the linkages between people and the frequency with which they interact (Nahapiet & Goshal, 1998). The relational aspect “describes the kind of personal relationships people have developed through a history of interactions” (Nahapiet & Goshal, 1998: 244). The relational aspect includes trust and associability among people (Leana & Pil, 2006; Leana & Van Buren, 1999; Nahapiet & Goshal, 1998). The cognitive aspect states that as people interact with each other they are able to develop shared goals and a shared vision (Nahapiet & Goshal, 1998).

Our focus on overlapping tenure most closely fits with the structural aspect of interpersonal relationships. It has been noted that the structural aspect of interpersonal relationships can be analyzed from the perspective of the stability of the relationships among individuals in organizations (Inkepn & Tsang, 2005). This indicates that turnover among members of a unit can lead to instability in the relationships among the people in the unit which may create performance deficiencies in the unit (Inkepn & Tsang, 2005; Reagans et al., 2005). Additionally, with the structural aspect, face-to-face interaction has been emphasized because it is argued to be a necessary condition for knowledge sharing (Hansen, 1999; Nohira & Eccles, 1992). This notion is important to our assessment of the stability of the relationships between coaches and players as the relationships between coaches and players on a football team are mainly defined by their face-to-face interactions at practices and film evaluation sessions. Thus, through practices and film evaluations coaches are able to share knowledge with players which may improve performance.

Overlapping Tenure of Coaches with Players and Unit Performance

Overlapping tenure is defined as the amount of time people have worked together towards common performance outcomes. The stability of relationships between managers and employees has been recognized as an important element in the success of organizations. For example, when a stock analyst moves to a different organization, his or her group at the new organization performs better when the stock analyst is able to bring with them, his or her team of research analysts, salespeople, and traders than when a stock analyst switches organizations alone (Groysberg et al., 2004). Additionally, when former GE executives took CEO positions at other organizations and were able to bring with them a team of three or more from GE, the new organization performed better than when the GE executives were not able to bring anyone along with them to the new organization (Groysberg, McLean, & Nohira, 2006). From both of these examples it can be seen that organizations may perform better when employees and managers are able to work together for a sustained period of time. This may be because the manager has people that he or she has worked with, developed, and shared knowledge with over time.

Human resources are one of the few organizational resources that are under direct control of managers (Wright et al., 1994). Therefore, managers play a large role in the development of human resources as a source of competitive advantage (Wright et al., 1994). Specifically with NCAA football teams, as coaches develop greater overlapping tenure with players, they spend more time in practices and film evaluations with the players. This greater amount of time together allows coaches to share knowledge and develop players which should have a positive influence on the performance of offensive and defensive units.

Knowledge is defined as “a fluid mix of framed experiences, values, contextual information, and expert insights” (Davenport & Prusak, 1998: 5). Additionally, knowledge sharing involves the collaboration of individuals working towards common goals (Boland & Tenkasi, 1995) and is important to the effectiveness of organizations (e.g., Bock & Kim, 2002; Kogut & Zander, 1996; Nahapiet & Goshal, 1998; Tsai, 2001). The greater amount of time coaches are with players on football teams, the greater amount of face-to-face interaction they have, which should allow more opportunities for knowledge sharing to occur (Haas & Hansen, 2007). On the other hand, when people leave a unit they may take knowledge with them that was crucial for unit success. The turnover of members of a unit may also negatively impact knowledge sharing that takes place through formal or informal exchanges (Inkpen & Tsang, 2005). Specifically with football teams, if a coach leaves a team, he may take with him knowledge of the game that is important to share with players on the team.

When coaches develop overlapping tenure with players, it creates more opportunities for knowledge sharing to occur. Through practices and film evaluations, coaches are able to share knowledge with players about playing football and executing the team’s strategy. Additionally, because knowledge sharing is a collaborative effort, players may share knowledge with coaches about their experiences in playing against certain teams or knowledge they have accumulated through practices and film evaluations.

As coaches and players develop greater overlapping tenure, not only are they able to share knowledge with each other, but coaches are also better able to recognize the capabilities of players on the team (Reagans, et al., 2005). This recognition of player capabilities may allow coaches to have players play positions on the field that fit with their capabilities or adjust the strategy to match the capabilities of players (Wright, Smart, & McMahan, 1995).

Hypothesis 1a: The overlapping tenure of offensive coaches with offensive players will be positively related to offensive unit performance.

Hypothesis 1b: The overlapping tenure of defensive coaches with defensive players will be positively related to defensive unit performance.

Overlapping Tenure of Coaches with Players and Unit Behaviors

Hackman and Wageman (2005) developed a theory of team coaching. They stated that coaching behaviors can focus on helping individual members strengthen their personal contributions to the team and working with the team to use resources effectively. Hackman and Wageman (2005) identified behavioral models of team coaching. For example, Schwarz (1994) focused on observing actual behaviors and identifying the behaviors that inhibited or facilitated team performance. In this situation, the behaviors would be described to team members and coaches would assist members in adjusting their behaviors to facilitate greater team functioning. This is applicable to football teams, as coaches work with players, over time they are able to recognize the behaviors players are exhibiting that either inhibit or facilitate unit performance. Once coaches recognize these behaviors, they are able to share knowledge with players about exhibiting the proper behaviors and why these behaviors are important to unit success.

It has been noted that organizations are more successful when they are able to create conditions in which the knowledge shared by providers is actively put to use by the recipients of the knowledge (Argote, Beckman, & Epple, 1990; Baum & Ingram, 1998). Knowledge sharing can then be looked at as the receipt of task information, know-how, and feedback (Hansen, 1999). Therefore, the sharing of knowledge should influence the task behaviors exhibited by people (Cummings, 2004; Haas, 2006; Hansen, 1999; Tsai, 2001).

It has also been noted that direct contact between people tends to be needed when one person advises another on how to complete a specific task (e.g., Cummings & Cross, 2003; Hansen, 1999; Reagans & McEvily, 2003; Tsai, 2001). In practices and film evaluation, coaches have direct contact with players. This direct contact allows coaches to share knowledge with players regarding the behaviors they would like the players to exhibit. Film evaluation should allow coaches to show players the behaviors they want them to exhibit and then through practices, coaches allow players to practice the behaviors. As coaches develop overlapping tenure with players it allows for more direct contact between coaches and players to occur which allows coaches to continually share knowledge and reinforce the behaviors they would like their players to exhibit. Specifically on offense, coaches would want the offensive unit to gain as many yards as possible and allow as few quarterback sacks as possible. Then on defense, coaches would want the defensive unit to allow as few yards as possible and accumulate as many tackles for loss as possible. This leads to the following hypotheses:

Hypothesis 2a: The overlapping tenure of offensive coaches with offensive players will be positively related to the amount of yards gained and negatively related to the amount of quarterback sacks allowed.

Hypothesis 2b: The overlapping tenure of defensive coaches with defensive players will be negatively related to the amount of yards allowed and positively related to the amount of tackles for loss.

Unit Behaviors and Unit Performance

According to Wright et al. (1994), people must exhibit the necessary behaviors for a unit to perform at a high level. Additionally, models proposed by Wright and McMahan (1992) and Wright and Snell (1991) indicate a relationship between the behaviors of people and unit performance. Previous research has found that when people exhibit necessary behaviors, greater performance can be achieved. For example, teams that display coordination behaviors have been found to perform at a high level (Stewart, 2006; Stewart & Barrick, 2000). Additionally, organizational citizenship behaviors have been found to be positively related to unit performance (Sun, Ayree, & Law, 2006). Therefore, when people working in units exhibit the behaviors necessary for performance, unit performance may increase.

In this study we examine the different behaviors exhibited by two different units in the same organization. Offensive and defensive players exhibit a variety of behaviors that enable their units to be successful. On offense, the goal is to score as many points as possible; therefore performance of the offensive unit is measured by the number of points scored. In order to score points players on the

offensive unit must exhibit certain behaviors. For example, offensive units must gain yards and must not allow their quarterback to get sacked. Thus, offensive units that are able to gain a greater amount of yards and allow a low number of quarterback sacks should score more points. On the defensive side of the ball, the goal is to not allow points. Therefore, defensive unit performance can be assessed by the number of points allowed. Behaviors that should allow defensive units to perform at a high level include the number yards allowed and the number of tackles for loss accumulated. Thus, defensive units that allow fewer yards and accumulate more tackles for loss should allow fewer points.

Hypothesis 3a: Offensive unit behaviors will be related to greater offensive unit performance

Hypothesis 3b: Defensive unit behaviors will be related to greater defensive unit performance.

Unit Behaviors as Mediators

As mentioned previously, the systems perspective proposes that characteristics of the workforce act as inputs that are transformed through behaviors of the workforce to result in performance outcomes (Delery & Shaw, 2001; McMahan et al., 1999; Wright & McMahan, 1992; Wright & Snell, 1991). Therefore, behaviors should mediate the relationship between characteristics of the workforce and performance. According to Wright et al. (1994), the human resource capital pool is a necessary, but not sufficient condition for people to act as a source of competitive advantage. People must exhibit the necessary behaviors for a unit to perform at a high level.

The overlapping tenure that develops between coaches and players and the knowledge that is shared between coaches and players should influence the behaviors exhibited by the players and player behaviors should influence unit performance. Therefore, with offensive and defensive units of NCAA football teams, the overlapping tenure between offensive and defensive coaches and players should be transformed through the behaviors of the offensive and defensive units to influence the performance of the offensive and defensive units respectively.

Hypothesis 4a: Offensive unit behaviors (yards gained and quarterback sacks allowed) will mediate the relationship between the overlapping tenure of offensive coaches with offensive players and offensive unit performance.

Hypothesis 4b: Defensive unit behaviors (yards allowed and tackles for loss) will mediate the relationship between the overlapping tenure of defensive coaches with defensive players and defensive unit performance.

METHODS

Sample

This study required a sample of organizations from the same industry that operate under the same rules and regulations, have shared metrics of behaviors and performance, and that make these metrics available and accessible. For the reasons listed above, National Collegiate Athletic Association (NCAA) Football Bowl Subdivision (formerly Division One) American football teams provided a useful sample for this study. By choosing a sample of organizations from the same industry, it allows for many controls to be built into the study. For example, the NCAA sets rules on the number of scholarships each team has, it also sets recruiting regulations, and the NCAA sets limits on the amount of time each team can practice.

All data for this study were archival in nature and the data set was compiled by the researchers. Of the 120 NCAA Football Bowl Subdivision football teams that competed in the 2008 season, complete data were able to be obtained for 119 teams.

Measures

Offensive and Defensive Coaches and Players Overlapping Tenure

Rosters for each team were obtained from an online database maintained by the NCAA (<http://web1.ncaa.org/mfb/mainpage.jsp>). We first identified whether each player played on offense or defense. Offensive players included quarterbacks, running backs, wide receivers, tight ends, offensive linemen, and kickers. Defensive players included defensive linemen, linebackers, cornerbacks, safeties, and punters. Then, based on the rosters, the number of seasons each player had been with each team was determined.

One simple way of computing tenure would be to attribute years tenure based on year in school (freshman, sophomore, junior and senior being attributed 1, 2, 3, and 4 years, respectively). Redshirts (when a student athlete does not participate in the sport for an entire academic year) and transfers make this an inaccurate measure of overlapping tenure. In some cases players had been redshirted. When a student-athlete redshirts he or she may practice with the team, but cannot compete against outside competition. Thus, the student-athlete would not use a year of eligibility. For those players in this situation a season was added on to the amount of time a player had been with a team. For example, a junior who redshirted a season would be considered as being with the team for four seasons as opposed to three seasons for a junior who did not redshirt.

Junior college transfers were also an issue. When junior college players transfer to Football Bowl Subdivision colleges or universities they may join the football team at the Football Bowl Subdivision college or university level already having used two seasons of eligibility based on NCAA rules. For example, a junior college player may be listed as a junior on a roster, but it may be the player's first season with the team. In this situation, the player was considered to be with the current team for one year.

We obtained the number of seasons each coach had been on the coaching staff of each team from each school's athletics website. Each Football Bowl Subdivision team has a website and these websites list the coaching staff, the number of seasons they have been with the team, and what position they coach. Based on the position that a coach coached we were able to determine whether the coach was an offensive or defensive coach. Offensive coaches included: offensive coordinator, quarterbacks coach, running backs coach, wide receivers coach, tight ends coach, and offensive line coach. Defensive coaches included: defensive coordinator, defensive line coach, linebackers coach, and defensive backs coach.

The tenure of both the players and the coaches with the current school is essential when calculating overlapping tenure. A simple example will demonstrate this importance. For example, a coach may have been with the current school for five years and two players may have been with the school for two years and four years respectively. Therefore, the overlapping tenures between the players and the coach are two years and four years respectively. On the other hand, a coach may have been with the school for two years and two players may have been with the school for four years and two years, respectively. In this example, the overlapping tenures are both two years. Therefore, the overlapping tenure between players and coaches is dependent upon the tenure with the current school of both the coaches and the players.

To calculate the overlapping tenure between coaches and players we first divided the coaches and players into offense and defense. We then compared the tenure of each offensive coach to the tenure of each offensive player to determine the number of seasons each coach had been with each player. We then averaged the individual overlapping tenure scores of each offensive coach with each offensive player to arrive at an average overlapping tenure between coaches and players for the offensive unit. We followed the same procedure for calculating the average overlapping tenure between defensive coaches and defensive players to arrive at a defensive unit level overlapping tenure.

Offensive and Defensive Unit Behaviors

Offensive and defensive units on football teams exhibit a number of different behaviors. We based offensive and defensive behaviors on statistics that are collected and maintained by the NCAA. We obtained these statistics from the same database that gave us the rosters for each team. The offensive unit behaviors we assessed were the average number of yards gained per game and the average number of

quarterback sacks allowed per game. The defensive unit behaviors we assessed were the average number of yards allowed per game and the average number of tackles for loss per game.

Offensive Unit Performance and Defensive Unit Performance

Offensive unit performance and defensive unit performance were based on statistics maintained by the NCAA. For the offensive units we assessed performance as the average number of points scored per game. As the goal of the offensive unit is to score as many points as possible, the average number of points scored per game represents performance for offensive units. For the defensive units we assessed performance as the average number of points allowed per game. The goal of defensive units is to prevent the opposing team from scoring; therefore the average number of points allowed represents performance of defensive units.

Bowl Championship Series (BCS) Conference

We controlled for whether teams were members of a conference that received an automatic bid to a BCS bowl game. Within the Bowl Championship Subdivision the winners of the Big 10, Big 12, Pac 10 (now Pac 12), Atlantic Coast Conference (ACC), Southeastern Conference (SEC), and Big East conferences receive automatic bids to a BCS bowl game. This is important because the estimated pay out for a BCS bowl game is \$18 million. This amount of money is very important to teams as they use the money to improve their respective football programs. Additionally, many conferences have revenue sharing of the pay outs from bowl games, therefore the entire conference may benefit when a team receives a BCS bowl bid. Additionally, there are only five BCS games, thus only 10 teams are selected to play in those games. Therefore, it is difficult to receive a BCS bowl game invitation. Due to the payout and the difficulty of getting into a BCS bowl game, the teams that are in conferences with an automatic bid to a BCS game may have an advantage over teams that are not in conferences with an automatic bid to a BCS bowl game. We dummy coded based on whether a team was in a BCS automatic qualifier conference or not. Teams that were in the Big 10, Big 12, Pac 10, ACC, SEC, and Big East received a one coding and the remaining teams received a zero coding.

Head Coaches' Human Capital

Head coaches' human capital was controlled for with two measures. The number of games a head coach had coached in a head coaching position at the collegiate level entering the 2008 season was collected. Second, the winning percentage for each head coach while in a head coaching position at the collegiate level entering the 2008 season was collected. The winning percentage for each head coach was calculated by dividing the number of games won by the total number of games coached. The number of games each head coach has coached at the collegiate level and each head coach's winning percentage were collected from each head coach's biography listed on the athletics website of each college or university that has a Bowl Championship Subdivision team.

Results

Table 1 displays the means, standard deviations, and correlations of the variables of interest in this study. Hierarchical regression was used to test each of the hypotheses in this study. The control variables of BCS conference membership and head coaches' human capital were entered in the first step of each regression analysis. The results for hypothesis 1 are presented in Table 2. Hypothesis 1a predicted offensive coaches overlapping tenure with offensive players would be positively related to offensive unit performance. After controlling for BCS conference and head coaches' human capital, the beta weight for offensive coaches overlapping tenure with offensive players was just barely non-significant ($p = .058$). In support of hypothesis 1b, defensive coaches overlapping tenure with defensive players was negatively related to points allowed by defensive units (Beta = $-.22$, $p < .05$). This result shows that defensive units allow fewer points when defensive coaches have longer overlapping tenure with their defensive players.

TABLE 1
MEANS, STANDARD DEVIATIONS, AND CORRELATIONS

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10
1. BCS Conference	.54	.50										
2. Number of Games as a Head Coach	101.37	94.57	.22									
3. Winning Percentage as a Head Coach	.51	.22	.32	.48								
4. Offensive Coaches and Players Overlapping Tenure	1.89	.43	-.07	.29	.25							
5. Defensive Coaches and Players Overlapping Tenure	1.90	.52	.12	.33	.28	.58						
6. Total Yards Gained	370.22	66.11	-.08	-.03	.11	.17	.07					
7. Sacks Allowed	1.91	.66	.12	.02	-.16	-.26	-.26	-.38				
8. Total Yards Allowed	359.61	57.47	-.33	-.27	-.45	-.23	-.34	.05	.14			
9. Tackles for Loss	5.84	1.12	.23	.34	.31	.03	.10	.20*	-.08	-.47		
10. Offense Points Scored	26.99	7.61	.05	.05	.20	.21	.12	.90	-.37	-.10	.29	
11. Defensive Points Allowed	25.84	6.94	-.27	-.25	-.38	-.21	-.31	-.05	.32	.84	-.47	-.22

n = 119; Correlations .20 and above significant at $p < .05$, Correlations .25 and above significant at $P < .01$; BCS = Bowl Championship Series

Hypothesis 2a predicted the overlapping tenure of offensive coaches with offensive players would be related to offensive unit behaviors. The results for hypothesis 2a are displayed in Table 2. The overlapping tenure of offensive coaches with offensive players was not significantly related to total yards gained (Beta = .16, $p > .05$). The overlapping tenure of offensive coaches with offensive players was negatively and significantly related to the number of quarterback sacks allowed (Beta = -.24, $p < .05$). Therefore, hypothesis 2a was partially supported.

Hypothesis 2b predicted the overlapping tenure of defensive coaches with defensive players would be related to defensive unit behaviors. These results are displayed in Table 2. The overlapping tenure between defensive coaches and defensive players was negatively and significantly related to the total number of yards allowed (Beta = -.23, $p < .01$). These results show that defensive units allow less yards when defensive coaching staffs have longer overlapping tenure with their defensive players. Additionally, the overlapping tenure of defensive coaches with defensive players was not significantly related to the number of tackles for loss accumulated (Beta = .04, $p > .05$). These results provide some support for hypothesis 2b that the overlapping tenure between defensive coaches and defensive players influence the behaviors of defensive units.

TABLE 2
OFFENSIVE AND DEFENSIVE OVERLAPPING TENURE BETWEEN COACHES AND PLAYERS PREDICTING PERFORMANCE AND BEHAVIORS

Independent Variables	D.V. Offensive Points Scored	D.V. Defensive Points Allowed	D.V. Total Yards Gained	D.V. Sacks Allowed	D.V. Total Yards Allowed	D.V. Tackles for Loss
Step 1						
BCS Conference	-.01	-.16	-.12	.18	-.21*	.12
Number of Games as a Head Coach	-.06	-.07	-.09	.11	-.05	.24*
Winning Percentage as a Head Coach	.23*	-.30**	.19	-.27*	-.36**	.16
R ²	.04	.18	.03	.07	.24	.16
Step 2						
Offensive Coaches and Players Overlapping Tenure	.19		.16	-.24*		
Defense Coaches and Players Overlapping Tenure		-.22*			-.23**	-.04
Δ R ²	.03	.04*	.02	.05*	.05**	.00
Total R ²	.07	.22*	.05	.12	.29	.16

n = 119 * p < .05, ** p < .01, BCS = Bowl Championship Series

Hypothesis 3a predicted that offensive unit behaviors would predict offensive unit performance. The results are shown in Table 3. To test hypothesis 3a we entered the offensive unit behaviors (total yards gained and quarterback sacks allowed) simultaneously into the regression predicting offensive unit performance. The total number of yards gained (Beta = .89, p < .01) was significantly related to offensive unit performance. However, the number of quarterback sacks was not significantly related to offensive unit performance (Beta = -.04, p < .05). These results indicate that the more yards offensive units gain, the more points they score.

Hypothesis 3b predicted that defensive unit behaviors would predict defensive unit performance. The results are shown in Table 3. To test hypothesis 3b we entered the defensive unit behaviors (total yards allowed and tackles for loss accumulated) simultaneously into the regression predicting defensive unit performance. The total number of yards allowed (Beta = .80, p < .01) was significantly related to defensive performance. These results indicate that when defensive units allow a lower amount of yards, they give up fewer points to opposing teams' offensive units. Tackles for loss (Beta = -.10, p < .05) was not significantly related to defensive unit performance. Overall, these results provide some support for hypothesis 3b.

TABLE 3
OFFENSIVE AND DEFENSIVE BEHAVIORS PREDICTING PERFORMANCE

Independent Variables	D.V. Offensive Points Scored	D.V. Defensive Points Allowed
Step 1		
BCS Conference	-.01	-.16
Number of Games as a Head Coach	-.06	-.07
Winning Percentage as a Head Coach	.23*	-.30**
R ²	.04	.18
Step 2		
Total Yards Gained	.89**	
Sacks Allowed	-.04	
Total Yards Allowed		.80**
Tackles for Loss		-.10
Δ R ²	.80**	.54**
Total R ²	.84	.72

n = 119, * p < .05, ** p < .01, BCS = Bowl Championship Series

Hypothesis four predicted behaviors would mediate the relationship between overlapping tenure and performance. To test for mediation, Baron and Kenny (1986) stated four conditions need to be satisfied. First, the independent variable should be related to the dependent variable. Second, the independent variable should be related to the mediator. Third, the mediator should be related to the dependent variable. Finally, the fourth condition stipulates that when the effect of the mediator is accounted for, the direct relationship between the independent and dependent variables should become non-significant (full mediation) or substantially smaller (partial mediation).

For the offensive unit, the conditions to test for mediation were not present. Thus, hypothesis 4a was not supported. For the defensive unit the conditions needed to test for mediation were met when total yards allowed was used as the mediating variable. Table 4 displays the results of the mediation test. As stated previously, the overlapping tenure of defensive coaches with defensive players was significantly related to defensive unit performance (Beta = -.22, p < .01). When the overlapping tenure between defensive coaches and defensive players was entered in the regression simultaneously with total yards allowed the Beta weight for overlapping tenure predicting performance reduced to -.03, and became non-significant (p > .05). This indicates that total yards allowed fully mediated the relationship between the overlapping tenure of defensive coaches with defensive players and defensive unit performance.

Overall, these results provide some support for hypothesis 4b that behaviors mediate the relationship between overlapping tenure and performance.

**TABLE 4
MEDIATION**

Independent Variables		D.V. Defensive Points Allowed	
Step 1			
BCS	-.16	-.16	.01
Number of Games as a Head Coach	-.07	-.01	-.02
Winning Percentage as a Head Coach	-.30**	-.27**	.00
Step 2			
Defensive Coaches and Players Overlapping Tenure		-.22*	-.03
Step 3			
Total Yards Allowed			.83**
ΔR^2		.04*	.49**
Total R ²	.18	.22	.71

n = 119, * p < .05, ** p < .01, BCS = Bowl Championship Series

DISCUSSION

In this study, we followed the literatures on relationship stability and knowledge sharing to theoretically develop and empirically test relationships among the overlapping tenure of coaches with players, unit behaviors and unit performance in a sample of NCAA American football teams. We found the overlapping tenure of defensive coaches with defensive players was positively related to defensive unit performance. This result demonstrates that stable relationships between coaches and players have a positive influence on unit performance. Through their time together coaches and players are able to share knowledge with each other. Specifically, coaches are able to share knowledge with players about the game of football and the overall strategy of the unit. Additionally, when coaches and players have stable relationships, over time coaches are able to recognize the capabilities of players. By recognizing player capabilities, coaches should be able to place players in the proper positions on the team and place them in situations where they can be successful. Therefore, when stable relationships are developed between coaches and players, greater performance may result.

We also found overlapping tenure between offensive coaches and offensive players predicted offensive unit behaviors and the overlapping tenure between defensive coaches and defensive players predicted defensive unit behaviors. Specifically on offense, greater overlapping tenure was associated with fewer quarterback sacks allowed and on defense; greater overlapping tenure was associated with less yards allowed by the defense. These results point to the importance of coaches being able to work with their players for a sustained amount of time in order to share knowledge and shape the behaviors of the players. Through the time spent in practices and film evaluation, coaches are able to demonstrate the necessary behaviors and allow players repetition in executing the behaviors. These results indicate the importance of overlapping tenure to the different behaviors exhibited by different units in the same organization. Additionally, these results indicate that players take the knowledge they receive from their

coaches and turn it into behaviors that are necessary for unit success (Argote, Beckman, & Epple, 1990; Baum & Ingram, 1998).

We also found that offensive unit behaviors were significantly related to offensive performance and defensive unit behaviors were related to defensive unit performance. The offensive unit behaviors of total yards gained and quarterback sacks allowed explained an additional 80% of the variance in offensive unit performance above and beyond the control variables. Additionally, the defensive unit behaviors of total yards allowed and tackles for loss accumulated explained an additional 54% of the variance in defensive unit performance, above and beyond the control variables. This amount of explained variance in performance demonstrates the importance of the linkage between behaviors and performance. These results provide evidence that different behaviors are needed to produce the different performance outcomes expected in different units. Therefore, an organization that has people that exhibit the behaviors necessary for the organization to be successful may develop a competitive advantage.

The behaviors exhibited by players were also found to mediate the relationship between the overlapping tenure of coaches with players and unit performance. The mediation effect was found on the defensive unit for the total amount of yards allowed. The mediation finding lends some support to the notion that the human resource capital pool is a necessary, but not sufficient condition for unit performance (Wright et al., 1994). People must exhibit the proper behaviors in order for a unit to perform at a high level. Specifically in this study, when coaches are able to develop stable relationships with their players and share knowledge with their players about football, the players are able to take this information and transform it into behaviors that are exhibited on the field that allow the unit to perform at a higher level. Thus, through their behaviors, players are able to use the knowledge they gain from their coaches to positively influence performance.

The results of this study point to the importance of relationship stability and knowledge sharing among leaders and subordinates in organizations. Additionally, our study demonstrates that different behaviors are necessary to produce performance in different units. When coaches and players develop stable relationship, coaches share knowledge with their players that encourage players to exhibit the behaviors necessary for greater performance. Therefore, one way in which coaches influence the behaviors and performance of offensive and defensive units is through the stable relationships and knowledge they share to develop their players.

Limitations

We recognize a limitation with the potential generalizability of the sample used in this study. The knowledge sharing that occurs between NCAA football coaches and players may be different than the knowledge shared between managers and employees of business organizations. Additionally, the skills that are developed through knowledge sharing in football teams are different from those developed in business organizations. While these differences do exist, overlapping tenure between managers and employees is important to the development of knowledge sharing, regardless of the type of organization. While differences do exist between NCAA football teams and business organizations, similarities do exist. For example, both types of organizations operate in highly competitive environments. Additionally, both types of organizations encourage knowledge sharing which can help develop employees to exhibit the required behaviors necessary for high performance. Finally, a NCAA football team is a year round organization, and a player is a part of that organization for four or five years, most likely just as long, if not longer than the average number of years of employment of members of business organizations (Wright et al., 1995).

We also recognize a limitation with our measures of behaviors. While some may argue these measures are proxies, they are in fact industry accepted statistics and crucial for football teams to perform in order to perform at a high level. Additionally, the behaviors assessed in this study are consistent across all teams; therefore we are able to evaluate the influence of overlapping tenure on the behaviors and the influence of the behaviors on performance across multiple units.

Conclusion

The following quote from Nick Saban, the head football coach at the University of Alabama demonstrates the importance of the relationships between coaches and players and the approach he and his coaching staff has taken to develop players since he became the head coach at Alabama in 2007. "Every day, we coach every player, try to get everyone better, get the best players on the field and get them to play together and have good team chemistry and a trust and respect for each other. ... I think the thing we've done here is we recruited some good players, but we also have a lot of players who were here that have improved dramatically. That's a tribute to our coaching staff and support staff. That's always important. We try to keep positive energy around these guys. They want to get better, they want to be good. That's how we approach it" (Dienhart, 2009).

The above quote from Nick Saban illustrates the importance of stable relationships between coaches and players. By having stable relationships, coaches are able to share knowledge with players to develop them and coaches are able to recognize the capabilities of players to help ensure the best players are on the field. Additionally, over time, coaches are able to develop players to exhibit behaviors on the field that lead to the success of offensive and defensive units. If other organizations take a similar approach and develop stable relationships among managers and employees that encourage employees to exhibit the necessary behaviors for performance, these organizations may be able to develop a competitive advantage over competing organizations.

REFERENCES

- Argote, L., Beckman, S.L., Epple, D. (1990). The persistence and transfer of learning in industrial settings, *Management Science*, 36: 140-154.
- Barney, J. (1991). Firm resources and sustained competitive advantage, *Journal of Management*, 17(1): 99-120.
- Baron, R.M. & Kenny, D.A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations, *Journal of Personality and Social Psychology*, 51: 1173-1182.
- Baum, J.A. & Ingram, P. (1989). Survival-enhancing learning in the Manhattan hotel industry, *Management Science*, 44: 996-1016.
- Bock, G.W. & Kim, Y. (2002). Breaking the myths of rewards: An exploratory study of attitudes about knowledge sharing, *Information Resource Management Journal*, 15: 14-21.
- Boland, R.J. & Tenkasi, R.V. (1995). Perspective making and perspective taking in communities of knowing, *Organization Science*, 6(4): 350-383.
- Brass, D.J., Galaskiewicz, J., Greve, H.R., & Tsai, W. (2004). Taking stock of networks and organizations: A multilevel perspective, *Academy of Management Journal*, 47(6): 795-817.
- Collins, C.J. & Clark, K.D. (2003). Strategic human resource practices, top management team social networks, and firm performance: The role of human resource practices in creating organizational competitive advantage, *Academy of Management Journal*, 46(6): 740-751.
- Cumming, J.N. (2004). Work groups, structural diversity, and knowledge sharing in a global organization, *Management Science*, 50(3): 352-364.

- Cummings, J.N. & Cross, R. (2003). Structural properties of work groups and their consequences for performance, *Social Networks*, 25(3): 352-364.
- Davenport, T. & Prusak, L. (1998). *Working knowledge: How organizations manage what they know*, Boston: Harvard Business School Press.
- Delery, J. E., & Shaw, J. (2001). The Strategic Management of People in Work Organizations: Review, Synthesis, and Extension, In G. Ferris and J. Martocchio (eds) *Research in Personnel and Human Resource Management*, Vol. 20, pp 165-197.
- Dienhart, T. (2009). "One-on-one with Alabama coach Nick Saban", <http://www.rivals.com/content.asp?CID=1000906>.
- Faraj, S., Sproull, L. (2000). Coordinating expertise in software development teams, *Management Science*, 46(1): 1554-1568.
- Gagne, M. (2009). A model of knowledge-sharing motivation, *Human Resource Management*, 48(4): 571-589.
- Goswami, R.M., McMahan, G.C., & Wright, P.M. (2006). Toward an understanding of strategic human resource management in entrepreneurial firms: Opportunities for research and action, J.W. Tansky & R.L. Heneman (Eds.) *Human resource strategies for high growth entrepreneurial firms*, pp. 13-50.
- Hackman, J.R. & Wageman, R. (2005). A theory of team coaching, *Academy of Management Review*, 30(2): 269-287.
- Haas, M.R. (2006). Knowledge gathering, team capabilities, and project performance in challenging work environments, *Management Science*, 52(8): 1170-1184.
- Haas, M.R. & Hansen, M.T. (2007). Different knowledge, different benefits: Toward a productivity perspective on knowledge sharing in organizations, *Strategic Management Journal*, 28: 1133-1153.
- Hansen, M.T. (1999). The search transfer problem: The role of weak ties in sharing knowledge across organization subunits, *Administrative Science Quarterly*, 44(1): 82-111.
- Harris, C.M., McMahan, G.C., & Wright, P.M. (2012). Talent and time together: The impact of human capital and overlapping tenure on unit performance, *Personnel Review*, 41(4): 408-427.
- Hitt, M.A., Bierman, L., Shimizu, & Kochhar, R. (2001). Direct and indirect effects of human capital on strategy and performance in professional service firms: A resource-based perspective, *Academy of Management Journal*, 44 (1): 13-28.
- Inkpen, A.C. & Tsang, E.W.K. (2005). Social capital, networks, and knowledge exchange, *Academy of Management Review*, 30(1): 146-165.
- Kang, S.C., Morris, S.S., & Snell, S.A. (2007). Relational archetypes, organizational learning, and value creation: Extending the human resource architecture, *Academy of Management Review*, 32(1): 236-256.
- Kase, R., Paauwe, J., & Zupan, N. (2009). HR practices, interpersonal relations, and intrafirm knowledge transfer in knowledge-intensive firms: A social network perspective, *Human Resource Management*, 48(4): 615-639.

- Kogut, B. & Zander, U. (1996). What do firms do? Coordination, identity, and learning, *Organization Science*, 7: 502-518.
- Leana, C.R. & Pil, F.K. (2006). Social capital and organizational performance: Evidence from urban public schools, *Organization Science*, 17(3): 353-366.
- Leana, C., & Van Buren, H. (1999). Organizational social capital and employment practices, *Academy of Management Review*, 24: 538-555.
- MacDuffie, J.P. (1995). Human resource bundles and manufacturing performance: Organizational logic and flexible production systems in the world auto industry, *Industrial and Labor Relations Review*, 48: 197-221.
- Makela, K & Brewster, C. (2009). Interunit interaction contexts, interpersonal social capital, and the differing levels of knowledge sharing, *Human Resource Management*, 48(4): 591-613.
- McMahan, G.C., Virick, M. & Wright, P.M. (1999). Alternative theoretical perspectives for strategic human resource management: Progress, problems, and prospects, *Research in Personnel and Human Resource Management, Supplement*, 4: 88-122.
- Mintzberg, H. (1973). *The nature of managerial work*, New York: Longman.
- Nahapiet, J. & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage, *Academy of Management Review*, 23: 242-266.
- Reagans, R., Argote, L., & Brooks, D. (2005). Individual experience and experience working together: Predicting learning rates from knowing who knows what and knowing how to work together, *Management Science*, 51(6): 869-881.
- Schwarz, R. (1994). *Team facilitation*, Engelwood Cliffs, NJ: Prentice-Hall.
- Stewart, G.L. (2006). A meta-analytic review of the relationship between team design feature and team performance, *Journal of Management*, 32(1): 29-54.
- Stewart, G.L. & Barrick, M.R. (2000). Team structure and performance: Assessing the mediating role of intrateam process and the moderating role of task type, *Academy of Management Journal*, 43: 135-148.
- Sun, L., Aryee, S., & Law, K.S. (2007). High performance work practices, citizenship behavior, and organizational performance: A relational perspective, *Academy of Management Journal*, 50(3): 228-577.
- Takeuchi, R., Lepak, D., Wang, H., & Takeuchi, K. (2007). An empirical examination of the mechanisms mediating between high-performance work systems and the performance of Japanese organizations, *Journal of Applied Psychology*, 92: 1069-1083.
- Tsai, W. (2001). Knowledge transfer in intraorganizational networks: Effects of network position and absorptive capacity on business unit innovation and performance, *Academy of Management Journal*, 44(5): 996-1004.
- Wright, P.M. & McMahan, G.C. (1992). Theoretical perspectives for strategic human resource management, *Journal of Management*, 18(2): 295-320.

Wright, P.M. & McMahan, G.C. (2011). Exploring human capital: Putting “human” back in strategic human resource management, *Human Resource Management Journal*, 21(2): 93-104.

Wright, P.M., McMahan, G.C., & McWilliams, A. (1994). Human resources and sustained competitive advantage: A resource-based perspective, *International Journal of Human Resource Management*, 5: 301-326.

Wright, P.M., Smart, D.L., & McMahan, G.C. (1995). Matches between human resources and strategy among NCAA basketball teams, *Academy of Management Journal*, 38(4): 1052-1074.

Wright, P.M. & Snell, S.A. (1991). Toward an integrative view of strategic human resource management, *Human Resource Management Review*, 1: 203-225.