Life cycles or longer tenures? A performance and employment duration model for Spanish basketball coaches

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This study analyses the effect of basketball coaches on performance and the question of life cycles on their tenures. From theoretical perspectives like coach-performance relationship, succession theories, life cycle theory,and based on a longitudinal analysis from 1997 to 2012 of a professional Spanish basketball league, we show that the objective established at the season's start and coach quality positively influence team performance, that a mid-season coaching change negatively influences performance, and the existence of longer tenures coaches that improve team performance. The work is especially interested for sport managers, sport coaches in their decisions-taking, but it is useful to general management to understand the consequences of the tenures or dismissals of their key managers on results

Keywords: coach succession, performance, life cycles, longer tenures, Spanish basketball

Introduction

It is widely accepted that leaders positively influence organisational performance (Ancona, Goodman, Lawrence, & Tushman, 2001; Boal & Hooijberg, 2000; Hambrick & Fukutomi, 1991). The analysis of a sports organisation's management style is useful to understand the relationship between leadership, succession and performance because the basic objective is similar in every sports organisation: winning games; and most sports organisations operate according to same regulations, so it is possible to generalise research results (Lewis, 2004; Rowe, Canella, Rankin, & Gorman, 2005;).

However, if leadership is important and influential, a change of a team's key leaders must be associated with substantial effects on organisational performance. Leadership change is a critical decision that influences organisational performance (Miller, 1991), however, the inconsistency of the research findings (Greiner, Cummings, & Bhambri, 2002) has resulted in three contrasting theories to explain the association between leadership change and organisational performance: common-sense, vicious-circle and ritual-scapegoating theories. In scapegoating theory, the loss of specific knowledge acts as a mechanism explaining why performance does not improve after the process of changing managers (Sakano & Lewin, 1999). Vicious circle theory also mentions loss of specific knowledge as a mechanism to explain the greater performance deterioration that occurs after the change (Grusky, 1963). Common sense theory, in turn, establishes that change improves performance (Kesner & Sebora, 1994).

The research on performance of coaches and the impact of leadership change has examined different sports, such as baseball (Smart, Winfree, & Wolfe, 2008), basketball (Fizel & D´itri, 1996; Giambatista, 2004; Martínez & Caudill, 2013), rugby (Carmichael & Thomas, 1995) and soccer (Audas, Dobson, & Godard, 1997; Dawson, Dobson, & Gerrad,

2000a, 2000b). There is a research gap with respect to European leagues, in which rules, norms and characteristics differ from those of leagues in other regions: there is no lottery pick selection, salary cap in Europe, or teams that perform poorly lose their status and play their next season in the second division. This relegation can mean diminished income and social support and have a negative impact on media coverage and human capital (González-Gómez, Picazo, & Garcia-Rubio, 2011).

We seek to ascertain in the first part of the work, in a European context, which factors characterise the relationship between the coaches, their tenures and team performance. We start from the models proposed by Giambatista (2004) and M. Hugues, P. Hugues, Mellani, and Guermat (2010) to introduce our theoretical ideas, review the literature and develop our hypotheses. In the second part, we empirically analyse our hypotheses based on the widest survey possible using official data: from the 1997-1998 season to the 2011-2012 season. We show our results supporting the different hypotheses. Finally, we discuss our results and offer conclusions with limitations of the paper.

Theoretical framework and hypotheses

The influence of basketball coaches on performance

Several recent studies analyse the importance of team coaches to the achievement of favourable results in different sports, e.g., basketball (Fizel & D´itri, 1999, Giambatista, 2004), hockey (Audas, Goddard, & Rowe, 2006), baseball (Fabianic, 1994) and soccer (Audas et al., 1997, 2002; Bruinshood & Ter Weel, 2003; De Paola & Scoppa, 2008; Koning, 2003; Salomo & Teichmann, 2000; Tena & Forrest, 2007).

Similar to business managers, coaches play different key roles in improving the performance of their teams. Coaches prepare their players developing their skills and applying collective tactics and strategies to link the different talents of the players to improve team performance. Planning, motivation, and conflict management or direction are tools that coaches use to this end and collaborate with team management to create the best possible roster to get good performance (Hughes et al., 2010) .

Coaches assume directive, leadership and affective aspects with the team that they manage. According to research, company executives focus on non-sport objectives, e.g., finance or promotion, however, coaches focus exclusively on team performance establishing clear, real and specific goals coaches so they are better than chairmen or other managers for empirical analysis (Locke & Latham, 1990).

Coaches do not work independently, but they occupy the most vulnerable position in a sports organisation. Coaches are admired when teams produce good results. However, when the results are poor, the coaches are held primarily responsible for this poor performance by the team supporters, the mass media and team management (Koning, 2003; Martínez & Caudill, 2013).

In principle, it is assumed that all teams share the same goal, that is, to win as many games as possible and to maximise team performance (Giambatista, 2004). However, certain facts must be described before the comparative statistical analysis can proceed: In European competitions teams that perform poorly during the season suffer relegation and play the next season in the second division. Relegation involves substantial economic, promotional, financial and human-capital repercussions; and there is no salary cap to facilitate equality between teams (Table 1) .

Insert Table 1 here

This economic inequality indicates that although the main objective for sports teams is to win as many games as possible, not all of the teams have the same objective. Sport organisations with high budgets share more ambitious goals, such as playing in the postseason playoffs. In contrast, sport organisations with low budgets desire to win a number of games sufficient to maintain their presence in first division. Planning and direction process are designed to achieve the goal established by the coach previously. Keeping first division requires a large effort for certain small sport organisations necessary to gain experience, notoriety and recognition, so after analysing the human, technical and financial resources, coaches establish team goals for the season. Thus, team performance depends on the objectives that the coach establishes during the preseason.

Coaches´ technical and tactical knowledge, leadership and ability to resolve conflicts are important to positive results (Fizel & D´itri, 1999, Giambatista, 2004). The presence of a coach with highly developed skills has two effects: a) There is an impact on the cumulative performance by the coach during his or her career (a coach with more skills is more likely to train high-performance teams, which affects the coach's performance); b) The coach gains experience during his or her career (a good coach with a long career accumulates experience that helps resolve specific problems of sport organisations). Career victories, experience accumulated managing teams and the other circumstances and problems that the coach has addressed show coach's quality (Giambatista, 2004) because provide a knowledge basis that helps team performance. Thus, a better coach positively influences team performance.

Research indicates how coaches positively influence a team's performance. However, when a team fails or performs inadequately, sports organisations feel compelled to make changes. Coaches' proximity with performance group and their influence on decisions about team design, season goals and strategies focus to dispute their tenure if performance is inadequate (Koning, 2003). A coaching change is disruptive, and time is required for a team to adapt to the vision, strategy, and knowledge of the new coach.

The succession literature offers different theories and analytical results to explain the process. There are three possibilities: change improves performance (the common-sense theory) (Kesner & Sebora, 1994); change worsens performance (the vicious-circle theory) (Greiner et al.., 2002; Grusky, 1963; Rowe et al., 2005); or the coach's role is not as important, and the coaching change does not affect performance (the ritual-scapegoating theory) (Khanna & Poulsen, 1995; Sukano & Lewin, 1999).

In the sports context, specifically on basketball, recent empirical research has established that a mid-season coaching change negatively affects team performance because the new coach inherits a non-motivated group that performs poorly. Thus, it is difficult to positively influence the team before it competes (Canella & Rowe, 1995; Giambatista, 2004).

Next, we present our hypotheses regarding the coach's influence on team performance for basketball.

H1a: The type of objective established during the preseason has a positive effect on team performance.

H1b: The coach's ability positively influences team performance.

H1c: The coach's experience positively influences team performance.

H1d: A new coach at the beginning of a season positively influences team performance.

H1e: A coaching change during the season negatively influences team performance.

Life cycles or longer tenures of coaches

Maintaining an adequate level of performance is essential to the interests and the financial circumstances of sports organisations because there is a direct correlation between results and new revenue through ticket sales, commercial rights and marketing (González-Gómez, et al. 2011; Madichie, 2009). Thus, when an organisation performs poorly, it is generally considered that the coach should be replaced by a new leader to improve the team's performance. Because seasons are carefully planned in advance, a mid-season coaching change is an event that an organisation doesn´t prepare for, which helps us understand certain results in the succession literature (Carmichael & Thomas, 1995; Fizel & D'itri, 1996; Giambatista, 2004).

Although there are conflicting theories, the models focused on basketball teams first assume that a mid-season coaching change is associated with poor performance (Giambatista, 2004, McTeer, White, & Persad, 1995). However, the literature does not establish that we should not ever change; if winning constantly occurs (to infinity), a change is rarely necessary unless the leader is removed or dies. Therefore, we should also recognise the existence of the rigour mortis phenomenon (Boal & Hooijberg, 2000) or dysfunction (Hambrick & Fukutomi, 1991).

For this analysis of the evolution of tenure in an organisation, the time frame must be extended. In sports, time is required to establish objective measures of performance, so it justifies the use of the percentage of wins during a season as a natural and objective means to analyse the impact of a leader's tenure (Giambatista, 2004, Hughes et al., 2010).

One possibility that explains the evolution of tenure and performance is the inverted-U model. This model can explain the relationship between a leader's tenure and the results obtained. The inverted-U model is characterised by low but incremental performance during the early years of tenure, based on organisational learning, high-interest tasks, increased power and a capacity for openness to experimentation, and coaches' performances begin to decrease between the sixth and the eleventh year (Hambrick & Fukutomi, 1991). Giambatista (2004) demonstrated that this model explains using a database on the coaches on NBA.

During the early years of a coach's tenure, adaptation and learning between the coach and the players contribute to the steady improvement of organisational performance (in sporting terms). After a number of years, overconfidence, repetition of the same messages and communication techniques or stagnation in the use of training techniques and players cause a decrease in the performance (Einhorn, 1980, Giambatista, 2004; Hambrick & Fukutomi, 1991). The time of this decline varies according to the study consulted. The decline commences between the sixth and the eleventh year (Hambrick & Fukutomi, 1991), between the eighth and the eleventh year (Miller & Shamsie, 2001), from the fourth year (Katz, 1982), after two-and-a-half years (Gabarro, 1987) or after the sixth year (Giambatista, 2004). The literature indicates that if there is an inverted U-shaped relationship for the life cycle of NBA coaches, there may be one for European professional coaches.

H2: The life cycle of European basketball coaches is characterised by an inverted U-shaped relationship between job tenure and performance.

However, Giambatista's finding may be valid, and the inverted-U model may not be valid for European leagues. In leagues in which poor performance can result in relegation to the second division, the potential economic loss or the loss of the opportunity to participate in playoffs through which a team can advance to lucrative Europe-wide competitions (and

access to increased resources from sponsors, supporters, the sale of commercial rights and the mass media) can encourage teams to make a coaching change faster than other leagues like NBA.

In fact, this possible exception is attributed to the nature of competition or organisational pressure. The pressure to obtain adequate performance can result in a adaptive work progress to medium and long term so that performance levels are not reduced (Hambrick & Fukutomi, 1991; Hughes et al., 2010).

Additionally, this increased pressure can result in a coaching change. So, it would be opting for a solution to a potential problem based on the scapegoating theory, with little empirical evidence on the performance improvement obtained in the change (Audas, Dobson, & Goddard, 2002; Bruinshoofd & ter Weel, 2003; Koning, 2003).

Inevitably, problems occur and performance varies during a coach's tenure with a team. However, a long tenure by the same coach in a team creates a work environment in which players acquire a thorough knowledge of the organisation and the industry in general. Thus, managers have a means to retain knowledge in their organisations and possess the human capital and strategies required to identify and correct weaknesses and regain adequate performance (Simsek, 2007).

This point has already been raised with respect to other European sports, such as soccer, in which performance improves faster in organisations that retain coaches instead of firing them (Bruinshoofd & ter Weel, 2003). Even less talented teams improve if coaches are retained (Brady, Bolchover, & Sturgess, 2008) because obtaining the necessary cohesion requires strategies that involve different talents, resources and knowledge. Long tenures increase the level of awareness regarding an organisation's manager, technical resources, and available human capital. Thus, opportunities for improvement can be more easily identified

(Kor, 2003), and the time required to prepare and train human capital is less (Rowe et al., 2005). In the long term, performance can improve faster using existing structures and resources than a complete renewal that requires the repetition of the entire learning process (Hughes et al., 2010).

H3: Longer manager tenure is positively related to performance.

Research method and analysis

Industry

This paper analyses basketball organisations from the ACB Spanish League, which is considered one of Europe's strongest leagues. As a research focus, this sector has a number of advantages, including a minimisation of the random effect of the forces of the industry, which are homogeneous for all of the organisations. In addition, these organisations have simple structures with no limitations on mergers, and the members of the board of directors of one club cannot be directors of other clubs. Additionally, these organisations are limited in their ability to acquire new resources (Giambatista, Rowe, & Riaz, 2005; Pitcher, Chreim, & Kisvalfi, 2000). Generally, the general manager and the primary decision-makers possess the power to hire or dismiss the coach. The general manager acts as the chief owner and exercises budgetary powers, whereas the coach is responsible for directing and coaching the team, signings, strategy and team performance.

Sample and data

The data were obtained from the ACB basketball league through the league's website (www.acb.com). The ACB (Asociación de Clubes de Baloncesto - Basketball Clubs Association) began in the 1983-1984 season and replaced the Spanish Basketball Federation,

which ceased to exist. Although the league saves all of the data, the only officially available data begin with the 1997-1998 season. Therefore, the data sample used is for the range of years for which the league provides data: the 1997-1998 season through the 2011-2012 season.

Given the open nature of the ACB, according to which teams are demoted and play in a lower division, we find a highly heterogeneous sample of teams. A total of 28 organisations played at least one season in the ACB league in the period studied. Each season, the league has 18 clubs; nine organisations played in all of the seasons during the study period, and one club played only one season. Therefore, we have a complete panel dataset.

Measures

The dependent variable was considered to be team performance measured by winning percentage (the number of games won divided by the total number of games played) achieved each season. This measure has been used in other studies (Brown, 1982; Cannella & Rowe, 1995; Pfeffer & Davis-Blake, 1986; Rowe et al., 2005). A delay of this variable will be used as the independent variable.

In addition, we considered six independent variables, three of which were binary. The team's goal every season, or *objective*, was coded 0 when the goal was to remain in the upper division and one when the goal was to play during the postseason (playoffs).

Although all of the teams intend to obtain the highest possible winning percentage for a given season (and thus improve their performance by increasing the percentage), these data are not useful unless we consider the objectives of the teams before the start of a new season. As shown in Table 1, large budgets differences imply different objectives during the season. Organisations with larger budgets choose more ambitious performance targets from the

beginning of the season, such as qualifying for the playoffs, which can involve a chance to win the league championship and participate in the following season of European competitions. Such success results in a larger quantity of advertising revenue, increased television exposure and the opportunity to sign better players.

To determine whether a team aspired to maintain upper-division status or qualify for the playoffs requires the consideration of several factors: the number of consecutive seasons in the league (the primary goal of a newly promoted team is always to remain in the league because such teams are relatively weak) and whether the club has played in the playoffs the last three seasons (the top eight teams qualify for post-season play), including those teams that finished ninth and tenth. A team that has qualified for the playoffs for three consecutive years has enough experience in the league so that its goal is to keep playing it next years. Based on these two factors, we coded the teams as 0 (the goal was to remain in the division) or 1 (the goal was to qualify for the playoffs).

To measure the coach's quality, we considered a team's success in terms of the winning percentage of each coach in the ACB league (Coach Ability) and the experience (Coach Experience), measured as the natural logarithm of the number matches officiated by everyone within the ACB. When a coaching change occurred before the season started (New Coach) was coded as 1, and as 0 otherwise (Giambatista, 2004).

Additionally, if there was a mid-season coaching change (Coach Succession) variable was coded as 1 and as 0 otherwise. Finally, the permanence of a coach with one team was reflected in the variable Coach Tenure. All the measures can be seen on Table 2.

Insert Table 2 here

The variables for the coach's experience and ability were considered to avoid spurious relationships between the coaching change and the tenure (Giambatista, 2004). Moreover, the longevity of a coach with the same team was considered to examine the life-cycle type of the coaches in the league.

Table 3 shows the main descriptive statistics of the variables. The variable Average Objective was interpreted as the proportion of teams whose objective was to qualify for the playoffs. New Coach and Coach Succession variables indicated the proportion of teams with new coaches at the beginning of the season and of those teams that changed the coach during the season, respectively. Thus, 53% of the teams sought to qualify for the playoffs, 26% started the season with a new coach and 23% changed the coach during the season. The coaches remain with their teams on average for 2.13 years. The average number of games coached was 213.06 and the average winning percentage was nearly 50%. All of these measures are representative because they exhibit low dispersion (standard deviation) except the number of games coached.

Insert Table 3 here

Table 4 shows the correlations between the variables, specifically, the correlation coefficient of Spearman's Rho (Pérez, 2005). Team performance is positively correlated with

the initial objective and the capacity of the coach and negatively correlated with a coaching change. The objective is positively correlated with the coach's ability and a coaching change early in the season. In addition, the coach's experience positively correlated with the coach's ability and tenure with a team and negatively correlated with the coach's dismissal during the season and to have a new coach at the beginning. Moreover, the coach's ability positively correlated with the coach's tenure and negatively with the coach's dismissal during the season and to have a new coach at the beginning. Finally, a new coach at the start of the season positively correlated with being dismissed during the season and negatively correlated with permanence with the team.

Insert Table 4 here

Results

In this section, we analyse six regression models using panel data to test the previously presented hypotheses. The data were structured as a set of cross-section time-series observations ordered according to teams and seasons. Then, the data were analysed using the STATA programme. This programme is robust against to missing data which solves the problems existing in databases that lead to unbalanced or incomplete panels as discussed in this paper (the number of team-year-observations varies between 197 and 214, see table 3). It is also robust against heteroscedasticity problems between individuals (in this case, teams) and correlations with the same individual.

We analysed four models (Table 5). In models 1 and 2, the individual effects are correlated with the independent variables. Thus, the fixed effects were estimated (the p-value

associated with the Hausman test was less than 0.05; therefore, we reject the null hypothesis of random effects or correlation between the individual effects and the independent variables). Models 3 and 4 are dynamic models, which are introduced as an independent variable delay device for performance. In all of the models, the joint significance test is significant at 5%. Therefore, these models are valid.

Model 1 indicates that the objective type and the coach's winning percentage positively influence a team's winning percentage. Thus, the higher the target (H1a) and quality of the coach (H1b) positively influence on team performance (these results recur in all of the static models: Models 2, 5 and 6). In model 2, we include as independent variables a coaching change before the season's start and a mid-season coaching change. In this case, the results indicate that a new coach at the beginning of the season is not significant, whereas a mid-season change is negatively significant. That is, a coaching change during the season negatively affects the winning percentage (H1e). Modelos 3 and 4 are the dynamic versions of two previous modelos whre we introduce a delay on performace of each team as an explanatory variable.

Insert Table 5 here

Model 5 examines the inverted U-shaped relationship with respect to the coach's life cycle. In this case, although the signs of coach tenure and tenure squared are correct (positive and negative, respectively), variables are not significant (table 6). Therefore, we cannot state that there is an inverted U-shaped relationship with respect to the longevity of the coach. Therefore, we cannot confirm H2. However, model 6 is significant. Thus, we can confirm

that longer tenures positively influence team performance (H3). Therefore, there is a linear

relationship (Figure 1) between coach tenure and team performance (significant to 5%).

Insert Table 6 here

Insert Figure 1 here

Discussion

The research results are consistent with the literature that analyses the impact of leaders and

coaches on the performance of the teams that they manage based on the factors that influence

team performance and provide insight into the life cycles of coaches.

In the case of our sample (Spain's ACB basketball league coaches; the ACB is one of

Europe's most powerful leagues), the coach influences team performance through the

objective that is defined at the beginning of the season (H1a) and the coach's skill and quality

as measured by the percentage of wins achieved earlier in the coach's career (H1b).

Hypothesis 1a was supported in models 1 and 2. However, this hypothesis was not significant

when we introduced the team's results in the previous season as a variable (models 3 and 4).

This outcome is reasonable if we consider that the objectives defined during a season will

have a relation to the results achieved during the previous season. For example, a team from

the bottom of the division does not change its objective from maintaining its presence in the

division to winning a championship within one year unless the team's budget changes substantially. However, such a case would be exceptional.

Whereas the coach's ability positively influences team performance in all models supporting H1b (Martínez & Caudill, 2013), the experience variable (H1c), which was not supported in any of the models, does not. Thus, in Spanish professional basketaball, more experience does not correlate with positive results. This outcome can be explained by considering that differences in budget and objectives establish different levels within the same league and that there are coaches who can always change teams (for instance, to a lower-division team or a team that performs poorly). In the latter case, the coach's risk of being dismissed increases if the coach does not attain the expected results, which in any case will always be lower for lower-level teams.

The presence of a new coach (H1d) and a coaching change (H1e) are introduced later in the model (Models 2 and 4). A new coach is only positive in model 4, in which the retarded variable (prior performance) is considered. Thus, the hypothesis is only partially supported. Further analysis should help clarify this relationship. However, hypothesis H1e is supported in both models. Therefore, the results confirm that a mid-season coaching change negatively affects performance. These results agree with previous studies (Audas et al., 2002; Giambatista, 2004; Koning, 2003; Soebbing & Washington, 2011).

Models 3 and 4 are the dynamic versions of the previous two models. We introduced a delay in the team's number of victories as an explanatory variable. Although in both cases we find that the number of victories of the previous year positively influences the next season, we should compare the models to arrive at a conclusion.

- A comparison of models 1 and 3 indicates that the introduction of an independent delayed variable as the objective type is not significant. Because the previous year's

winning percentage affects future goals, the delayed variable reflects the significance of the objective type.

- A comparison of models 2 and 4 results in the same conclusion. That is, the number of wins in the previous year affects the next season's objective. In addition, a coaching change early in the season appears to be a (positively) significant variable, which did not occur previously. Therefore, when coach change is at the beginning of a season can improve team's performance (Giambatista, 2004).

The other question addressed in this study relates to the relationship between coach's tenure on team performance. Giambatista demonstrated that for NBA basketball coaches, tenure follows an inverted U-shaped curve, according to which from the sixth or seventh year of a coach's tenure with a team, the team's performance begins to deteriorate. In this study, this hypothesis (H2) is not supported for several reasons. The average longevity of an ACB coach is slightly more than two years (Table 2), whereas Giambatista established that the average NBA coach longevity is four years. In Spain and across Europe, the demand for immediate results is considerable and the pressure on the coaches is high. Mid-season coaching changes occur frequently. Thus, coaches seek to generate immediate positive results. These circumstances result in significantly shorter life cycles. In Spanish professional basketball, Giambatista's U-shaped tenure model, which includes tenures of up to 11 years, is inapplicable.

However, we believe that increased longevity influences performance, as demonstrated by hypothesis H3. The pressure of competition and high expectations result in increased managerial control, which changes the life-cycle model towards a more linear form (H3). Thus, to avoid a decrease in performance levels, coaches should be retained for the medium to long term.

Conclusions

The research results are consistent with the literature that analyses the impact of leaders on the performance of the teams that they manage based on the factors that influence team performance and the existence of coaches´ tenures. This study has focused on European competitions and basketball leagues, whereas most studies on team performance and basketball coaches are focused on the American NBA.

The literature recognises that the coach has a positive influence on team performance (Hughes et al., 2010, Rowe et al., 2005). The coach's knowledge, work planning, development tasks, motivational approach and direct relationship with the team are the factors that correlate with the performance of these organisations (and their players). The literature of sport management has focused on coaches as key managers rather than presidents or general managers because they are nearer of the mainly group of performance.

In the first part of the work, some of factors analysed on the research was totally supported (H1b, H1e), partially supported (H1a, H1d) and other were not supported with the data (H1c). In the second part, we analysed the life cycle models of coaches, not supporting the U-inverted model showed by Giambatista (2004), but we support the model that we improve the performance when tenure increase (Hughes et al., 2010). The Spanigh (and generally in Euroepan professional sports), the lower life cycles of sport professional coaches is important to understand the results obtained.

We believe that this study agrees with the views currently expressed in the sport management literature regarding leadership and retention functions and their relationship to performance. However, this study has several limitations, including the exclusive modelling of a specific European league (Spain's ACB League). We believe that the league we have investigated represents the best example for the European context and has made it possible to

differentiate European tendencies from those of the NBA. However, the study should be extended to other leagues that are socially and economically significant, such as the French, Italian or Greek leagues, to enable more definitive conclusions. Similarly, the dataset should be expanded to include ACB seasons prior to 1997-98, and new factors should be introduced. For example, it would be interesting to analyse team budgets and the number of new players signed between seasons and to continue research on the role of coaching change by investigating variables such as the time during the season when the change occurs or whether the change is accompanied by roster changes.

The non-confirmation of H1b or some hypotheses confirmed partially leads us too to continue researching manager or technical staff characteristics that can affect results, e.g., distinguishing whether the manager is an internal or external substitute or searching for new ways of measuring coach experience. In this paper, we have only used one performance measurement (win percentage), but there are other measurements that could help us to see possible team improvements, such as the TER or TENDEX index rating systems.

For authors, this work is importante because open specific future research lines on the context of sport coaching: better measurement of coaching performance and factors that influence on it, consequences of coach change, strategic decisions about succession or not. Although the framework is so specific (sport coaching and performance), we start form general theories of management like characteristics of leaders, succession theories or life cycles theory. Adequate previous training, the effect of unexpected coach succession on performance and the tenure of coaches are common to business direction, and the results are agreed with specific sport management theory and general management too.

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Table 1. Spanish basketball team budgets for 2012-2013 season

Team	2012-2013 Budget (Millions €)
Barcelona	28
Real Madrid	25
Caja Laboral	12
Unicaja	11.5
Valencia Basket	10.5
Gescrap Bilbao	8
Gran Canaria	5.6
Cajasol Sevilla	5.5
Cai Zaragoza	5
Lagún Aro GBC	4
Blue Sens Monbus	2.8
UCAM Murcia	2.7
Manresa	2.7
Estudiantes	2.5
FIACT Joventut	2.1
CB Valladolid	1

Min: 1; Max: 28; Median: 7,46; DT: 7,60; Variation index: 1,03; Gini index: 0,50

Source: Marca Sport Paper (2012)

Table 2. Measures

Type	Variable	Description
DV	Performance	Winning percentage (the number of games won divided by the total number of games played) achieved each season
IV	Objetive	Coded 0 when the goal was to remain in the upper division and one when the goal was to play during the postseason (playoffs)
IV	Coach Ability	Team's success in terms of the winning percentage of each coach in the ACB league
IV	Coach experience	Natural logarithm of the number matches officiated by everyone within the ACB
IV	New coach	If a coaching change occurred before the season started was coded as 1 and as 0 otherwise
IV	Coach succession	If there was a mid-season coaching change was coded as 1 and as 0 otherwise
IV	Coach tenure	Permanence of a coach with one team

Table 3. Descriptive statistics of variables

Variable	N	Mean	St. Dev.
Objective	214	0'53	
Coach Ability	197	0'464	0'213
Coach Experience	197	213'06	203'134
New Coach	213	0'26	
Coach Succession	214	0'23	
Coach Tenure	216	2'13	1'314
Performance	214	0'499	0'172

Table 4. Correlation between independent variables

	Performance	Objective	Coach ability	Coach Experience	New Coach	Coach Succession	Coach Tenure
Performance.		0'715*	0'529*	0'087	0'122	-0'254*	0'082
Objective	0'715*		0'516*	0'123	0'152*	-0'005	-0'045
Coach ability	0'529*	0'516*		0'461*	-0'177*	-0'165*	0'207
Coach Experience	0'087	0'123	0'461*		-0'179*	-0'185*	0'243*
New Coach	0'122	0'152*	-0'177*	-0'179*		0'144*	-0'645*
Coach Succession	-0'254*	-0'005	-0'165*	-0'185*	0'144*		-0'593
Coach Tenure	0'082	-0'045	0'207	0'243*	-0'645*	-0'593	

* α = 0,05

Table 5. Static and dynamic regression (performance as a dependent variable).

	Model 1	Model 2	Model 3	Model 4
Objective	0.113*	0.101*	0.126	0.073
Coach Ability	0.0013*	0.001*	0.002*	0.002*
Coach Experience	0.0078	-0.005	0.029	0.015
New Coach		-0.02		0.09*
Coach Succession		-0.115*		-0.09*
Prior Performance			0.385*	0.516*
Joint significance	136.46*	291.17*	89.47*	103.8*

* $\alpha = 0,05$.

Table 6. Static regression (performances as dependent variable).

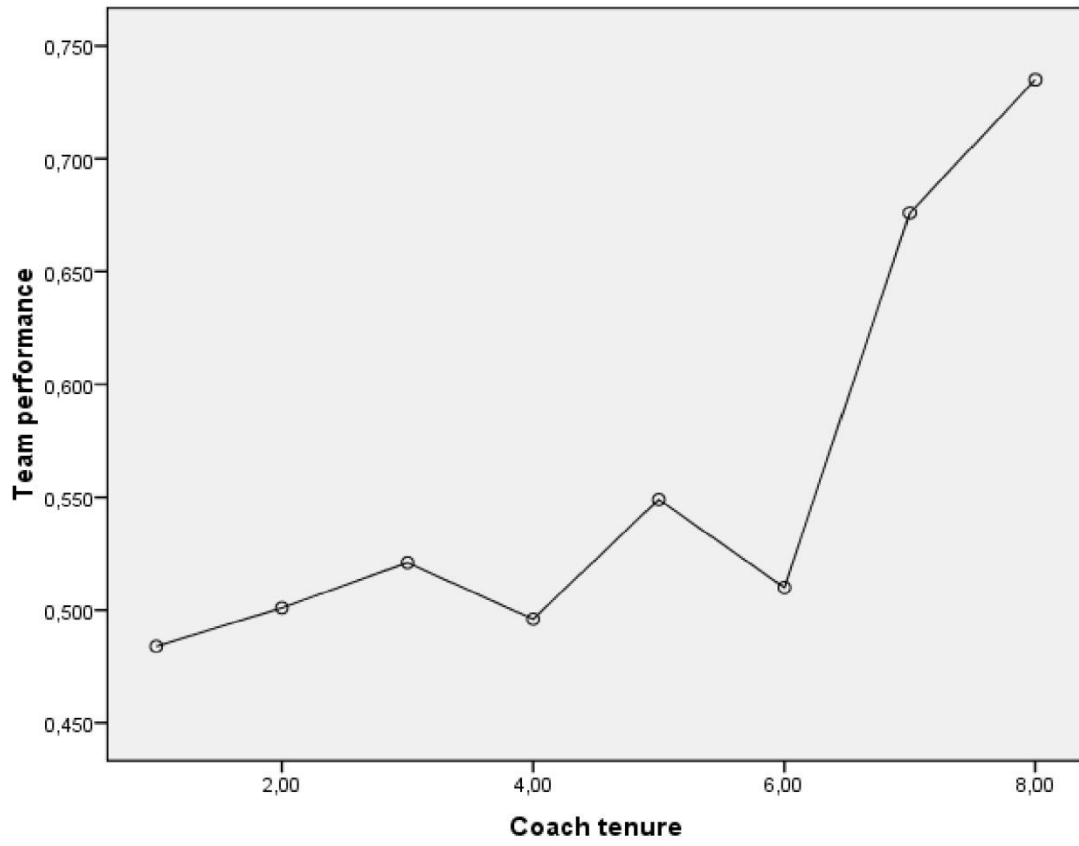|	MODEL 5	MODEL 6
OBJECTIVE	0.107*	0.108*
COACH ABILITY	0.0017*	0.0017*
COACH EXPERIENCE	0.0005	0.0013
COACH TENURE	0.03	0.024*
COACH TENURE SQUARED	-0.001	
Joint significance	144.47*	165.28*

* $\alpha = 0{,}05$

Figure 1. Relation between coach tenure and team performance