The professional careers of retired football players

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Abstract

Professional football player careers have a shorter duration than most common careers and players retire at a young age. However, contrarily to common belief, not all retired athletes can financially rely on their revenues from sport for the rest of their lives, and some retired players will pursue a secondary professional activity, either as a salaried employee or as an entrepreneur. The goal of this dissertation is to study how players' human capital and career characteristics influence the probability of returning to the labour market upon retiring from football, and in the case of doing so, the choice of becoming an entrepreneur versus an employee. We used data from the years of 1991 to 2017, provided by the dataset Quadros de Pessoal, and applied Logit models using the Stata software. The results suggest that an increase in the total amount received in wages as players decreases the probability of pursuing a secondary career, while a higher retirement age and a longer player career increases it. Regarding the probability of pursuing entrepreneurship, the retirement age, the gap between retirement and reemployment and the total of the wages, all show a positive relation with this probability. We conclude that an additional job during the athletic career translates in higher chances of returning and experience as entrepreneur increases the probability of becoming one. The education level effects are not significant to the return decision but having secondary education increases the chances of becoming an entrepreneur.

Key words: sports career retirement, reemployment, entrepreneurship, Logit model, discrete choice model, professional football

1. Introduction

The growing commercialization and professionalization of sports throughout the last decades has resulted in an increase in the time and energy demands of the athletic career, which can take a parallel course to the period of educational and professional qualification, decreasing the level and quality of education and the development of other interests and skills. On the other hand, the increase in the public interest and media coverage of top-performance sports such as football, has led to a rise of the incomes and popularity of the most successful athletes. However, not all athletes receive such amounts of attention and recognition and are able to accumulate enough financial capital to rely on the revenues from sports and maintain their lifestyle during retirement, which creates the need to return to the job market. If deciding to pursue a second career, former players can opt for working as salaried employees or becoming entrepreneurs or investors.

Many factors might impact the professional opportunities that former athletes might encounter after the end of their careers, such as in which club they played on, the level of income or other occupational experiences. However, despite the questions that arise from this topic, very few research has been made in this area of sport economics. The goal of this work is to study which human capital and career characteristics do influence the probability of returning, or not returning, to the labour market, and the choice of returning as an entrepreneur or employee. Using data from a Portuguese longitudinal matched employer-employee dataset, we identified both professional football players as well as former football players who have returned to the job market after retiring from football and who are pursuing another professional activity, from the years of 1991 to 2017 and we applied Logit models using the Stata software.

2. Literature Review

Factors influencing professional opportunities

Engagement in top-performance sports can positively or negatively influence professional opportunities upon career ending. On one hand, the high energy and time requirements restrict the available time to be allocated to educational and other vocational careers, which results in a decreased level and quality of qualifications and delays the entry into an alternative occupation (Conzelmann & Nagel, 2003).

However, on the other hand, the mediatization of popular sports has allowed the most successful athletes to gain popularity and public recognition, to enlarge their social networks and to acquire contacts that can increase their professional opportunities (Conzelmann & Nagel, 2003). An individual's network and personal contacts are often sources of information about job and occupational possibilities, which can enable labour mobility (Granovetter, 2018). In addition, athletes develop transferable skills during their participation in elite sports, such as discipline, commitment, high stress tolerance (Dewenter, & Giessing, 2014), efficient time management under pressure (Burlot, Richard, & Joncheray, 2018) and drive for greater career achievements (Long & Caudill 1991), which can also be useful in an alternative career and that can be favoured in recruitment processes.

The type of career followed can also impact prospective opportunities. While focusing only on sports can allow more time for training and improving performance, following a dual career, having an additional occupation working or studying, allows to gain skills and knowledge in alternative fields, which can increase professional opportunities upon sport retirement, ease the transition out of sport and facilitate the integration in the labour market (Barriopedro et al., 2018).

Career choice motivations

The career choice between a salaried employment position or becoming an entrepreneur can depend on various factors. Having job security and stability, a fixed workload and schedule, more certain wages, a larger social environment and career promotion opportunities are motives why some people prefer organizational employment over self-employment (Kolvereid, 1996). On the other hand, people desire to start-up a business for various reasons such as the need for approval, personal development and achievement, independence, autonomy and flexibility, financial improvement, or due to job dissatisfaction or job loss (Birley & Westhead, 1994; Dubini, 1989; Scheinberg & MacMillan, 1988; Shapero, 1975). Cooper (1981) considered three main sets of factors that can affect a potential entrepreneur's decision of founding a new firm: its background, the organization where he previously worked at and external environmental factors. The background characteristics can include family influences, educational choices and previous career experiences, which can affect the knowledge and skills that are acquired and the individual's perceptions and motivations. The organization where the individual works can provide him with industry specific knowledge, managerial skills and a network of useful contacts that might be advantageous for starting a business in the same environment. In addition, external factors such as the economic conditions, accessibility and availability of capital to invest may facilitate or discourage entrepreneurial actions.

Human, social and financial capital can be used to understand the choice of occupational careers and the likelihood of becoming an entrepreneur. Human capital can be distinguished into general human capital, which considers formal education and general work experience, and specific human capital, which includes prior experience in the industry, prior self-employment experience and leadership experience in managing or directing positions (Brüderl et al., 1992). Individuals with higher human capital might have a better ability to perceive a business opportunity and better knowledge and skills to exploit it. Particularly, previous start-up experience was proven to be the most influential type of human capital in the discovery of business opportunities (Davidsson & Honig, 2003). On the other hand, over-investment in human capital, and therefore high levels of certification, might result in risk aversion attitudes, discouraging exploiting a new business (Davidsson & Honig, 2003). Social capital can be based on strong ties, such as having family members or close friends who have had their own businesses or who encourage him to do so, or based on weak ties, such as being involved in a business network or having contacts and friendships with other businesspersons or business advice organizations (Davidsson & Honig, 2003). During the process of firm creation, apart from seeking financing capital and necessary assets, the entrepreneur also seeks for advice, guidance, and crucial information (Birley, 1985). These networks may facilitate the identification and discovery of opportunities and help to exploit them, by providing useful resources, knowledge, and insights (Davidsson & Honig, 2003). In addition, people with higher earnings as employees before founding a new firm are in a better position to financially invest and create a larger business, while people with lower human capital, who are often unemployed and forced into self-employment by necessity, might not be able to pursue the best opportunities and with the most appropriate knowledge and resources (Brüderl et al., 1992).

Fit between athletes & entrepreneurship

The nature of the professional sports environment, its internationalization, the increase in the funding of teams and events, sponsorships and mediatic coverage have offered

opportunities for business creation (Ratten, 2015). The visibility and brand image of successful athletes can be particularly valuable, providing external remunerations to the professional athletic career, which they can still benefit from even after their career ending (Parmentier & Fischer, 2012). Many athletes take advantage of their success in sports to involve themselves in business deals, from marketing campaigns to launching their own products (Ratten, 2015). The social network developed, useful contacts acquired and the past business experience can be an advantage for following an entrepreneurial career. In addition, Steinbrink, Berger & Kuckertz (2019) proved a match between professional athletes' and entrepreneurs' personality characteristics, which suggests they are suitable for an entrepreneur's position. Both athletic and entrepreneurial careers are often subjected to high workloads, constant pressure, and risk of failure, so they must be resilience and motivated to deal with these circumstances (Steinbrink, Berger & Kuckertz, 2019). Athletes are often competitive, goal oriented and hard-working. They also develop confidence, leadership, and communication skills during their athletic careers, especially in team sports, which are important attributes for entrepreneurial success.

The relocation in sports is another occupational possibility. Transitioning to coaching, clubs and associations management or administrative positions allows former athletes to exploit their experience and knowledge in the field, transferring a portion of the expertise they had previously developed to the new career.

Despite the few studies on what can impact occupational opportunities of retired athletes and on how their characteristics can match an entrepreneur's profile, we found no studies covering the choices of returning or not to the job market and between becoming an entrepreneur or employee, for the cases of former athletes. Thus, the goal of this work is to contribute to this gap in the literature and better understand which variables actually impact this decisions and the magnitude of their effect.

3. Data and Methodology

Data set

For this study we used information on personnel records from the dataset Quadros de Pessoal (QP). QP is a mandatory national survey collected yearly by the Portuguese Ministry of Labour and Social Security and a longitudinal matched employer-employee dataset, where firms and workers are identified by a unique number, which allows us to track and merge information about the firms and workers overtime. We observed professional football players and former professional football players that upon retiring from the football career returned to the database, engaging in another career, between the years of 1991 and 2017 and identified 35 001 observations, including 8 809 distinct individuals.

Variables

The information available from QP, allows to define a set of variables associated with the players which can impact the probability of each possible outcome. The dependent variables refer to the two binary outcomes of our study: returning to the labour market and returning as an entrepreneur. The explanatory variables that we used in our Logit models are summarized in table 3.1. Part of the variables were used for studying the comeback to the labour market, others for the entrepreneur/employee choice models, and some are shared by both.

Table 3.1 – Explanatory variables used in the models

Variable	Description
Education level	Number of years completed at school
Portuguese	If the individual is Portuguese
Retirement age (years)	Individual 's age at the time of retirement from football
Gap (years)	Time period between retirement and reemployment
Number of clubs	Number of clubs where the individual played
Player career length (years)	Number of years the individual was a player
Additional job once	If the player had an additional job during anytime of the football career
Additional job last year	If the player had an additional job during the last year of the football career
Last wage (euros)	The value of the salary received in the last year of the professional player career
Total wage (euros)	The total value accumulated in salaries during all the years of the professional player career in Portugal
Last league	The football league where the individual played during the last year of his football career
Highest league	The highest football league where the individual played during all his career
Entrepreneur once	If the individual had entrepreneurial experience during the player career

Having an additional job during the player career was identified when the same worker had two different professional

categories in the same year (player and non-player). If his professional situation corresponded to the entrepreneur's one, it means that the additional experience was as an entrepreneur. For the education level we defined four categories based on the completed years at school: Low (Less than 4 years), Basic (9 years), Secondary (12 years) and Tertiary (a higher education degree). For the 'Last league' and 'Highest league' variables, we defined 3 categories: First league, Second League and Semi-professional leagues (third and fourth league).

Methodology

In order to relate the decisions being studied with the variables available from QP, we used the Logit model, a binary choice regression model, which allows us to predict the probabilities of two possible qualitative and binary outcomes (pursue another career or stay retired; become an entrepreneur or become an employee). The probability of a binary event can be modelled by equation 1:

$$P(y = 1|x) = G(\beta_0 + \beta_1 x_1 + \beta_2 x_2 + \cdots + \beta_n x_n + u) = G(X\beta) \quad (1)$$

where P is the probability of the outcome and y is the dependent or explained variable, x_n are the independent or explanatory variables, collected from QP, β_0 is the intercept and β_n are the parameters associated with the x_n. The term u models the error term, which includes all other unobserved variables that impact the probability. In the Logit model, G is a non-linear function that ensures that the probability $P(y = 1|x)$, always fits between 0 and 1 for all values of the β_n and the x_n- the cumulative logistic function:

$$G(z) = \frac{e^z}{1 + e^z} \quad (2)$$

In order to explain the effects of an explanatory variable x_n on the response probability of study, $P(y = 1|x)$, we calculate the marginal effects of the variables of our model, which can be interpreted as the effect that a change in an explanatory variable has on the change in the probability of the positive outcome, holding everything else constant. To obtain such values in Stata, we use the average marginal effect method, which results from calculating the average of the individual marginal effects across the sample.

4. Results

Descriptive analysis

About 33% of the football players in our database pursued an alternative professional occupation upon retiring from sports, in Portugal, and from this portion, only 8% returned to the market as an entrepreneur, while the rest pursued secondary careers as salaried employees. The most common career choices among retired players that get reemployed are in public administration and defence, compulsory social security, wholesale and retail trade, repair and maintenance of motorcycles and vehicles, and in sporting, artistic, entertainment and recreational activities, where the careers in coaching, club administration and sports management are included.

Active football players do not have high education levels. About 69% does not have complete secondary educataion (the mandatory school attendance in Portugal since 2012) and only about 1% has any type of higher education degree. Regarding wages, there is a wide pay scale, and the wages vary a lot between leagues. While first league players earn on average 140 192 euros annually, 50% of the players (of all leagues) receive not more than 15 960 euros per year.

On average, players retire at 25.8 years old, after playing for 2.6 years, in 1.6 clubs. 71% of the players are Portuguese, but when solely considering the reemployed, this value raises to 92%, since foreign players leave the country either to return to their own, or to play professionally in a club from another country. The reemployed players usually retire with an older age, with more career years and club participations. The retired players that decide to get reemployed, do it on average at 26.9 years old, 3.2 years after retirement. The ones who become entrepreneurs have a higher average reemployment age and gap, and also played during more years and in more clubs. There is a higher percentage of Portuguese individuals in the entrepreneurs' group, as well as individuals with previous entrepreneurial experience. Considering education, entrepreneurs have a higher percentage of individuals with the secondary level, while employees have a bigger percentage of individuals with higher education degrees.

Regarding wages, we observe that the players who did not return to the labour market accumulated on average the double of the amount of the players who returned to pursue an alternative career, and players who became entrepreneurs also accumulated on average the double in wages during their football careers than the players who became employees.

Table 4.1 summarizes information about the players who did and did not pursue a secondary activity, and table 4.2. summarizes information about the retired players who got reemployed, either as employees or entrepreneurs.

Table 4.1- Football career variables and education levels of retired players (1991-2017)

	Does not Return		**Does Return**		**All retired players**	
	Average	SD	Average	SD	Average	SD
Retirement age (years)	25.3	5	26.9	5.5	25.8	5.2
Player career length (years)	2.4	2.1	3	2.4	2.6	2.2
Number of clubs	1.5	1	1.9	1.2	1.6	1.1
Total earned as player (euros)	216 663	787 276	103 897	407 823	180 064	689 475
% of portuguese	58%		92%		71%	
% with an additional job	0.35%		1.75%		0.81%	
Education			%			
Low	5.3		6.6		5.8	
Basic	60.8		63.8		61.8	
Secondary	32		28		30.7	
Tertiary	1.4		1.6		1.4	
NA	0.5				0.3	
Number of individuals	**5 950**		**2 859**		**8 809**	

Note: This values refer to the last year of each distinct individuals' careers as professional players.

Table 4.2- Football career variables and education levels of reemployed players (1991-2017)

	Becomes Employee		**Becomes Entrepreneur**		**All reemployed players**	
	Average	SD	Average	SD	Average	SD
Reemployment age (years)	26.7	5.6	28.8	4.4	26.9	5.5
Gap to reemployment (years)	3.1	3.5	4.4	4	3.2	3.6
Player career length (years)	2.9	2.4	3.5	2.6	3	2.4
Number of clubs	1.8	1.2	2.3	1.4	1.9	1.3
Total earned as player (euros)	96 562	371 934	191 027	701 848	103 897	407 823
% of portuguese	92%		97%		93%	
% with entrepreneurial experience as players	0.04%		1.8%		0.17%	
Education			%			
Low	2.6		0.9		2.4	
Basic	56.3		52.7		56	
Secondary	33.3		40.1		33.9	
Tertiary	7.8		6.3		7.7	
Number of individuals	**2 637**		**222**		**2 859**	

Logit model results: Return upon retirement

Our first model includes a set of base variables that remain on every subsequent model: whether the individual is Portuguese or not, his education level and his age at the time of retirement. The effects of other variables are analysed from model 2 through model 10, which includes the whole set of variables used in previous models. In addition to the variables presented before, dummies for each year were included in every model, in order to capture fixed effects that could influence the decision in each year and that we are not able to observe.

Regarding the variables related to the player's salaries, we used the log of the total earned in wages during the player career and the log of the last wage as player since the yearly wages of the players are widely distributed. The control group is a non-Portuguese individual, with a low level of education (less than 4 years completed at school), with no additional job during the player career or during the last year of the player career, that played on the first league on his last career year and that the highest league where he played was the first league.

Table 5.1 – Marginal effects for the Logit model- Return after retirement

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
Portuguese	0.338***	0.328***	0.328***	0.337***	0.336***	0.317***	0.281***	0.303***	0.329***	0.246***
	(0.012)	(0.013)	(0.013)	(0.012)	(0.012)	(0.013)	(0.014)	(0.013)	(0.013)	(0.015)
Education level:										
Basic	-0.088	-0.084	-0.089	-0.089	-0.088	-0.098	-0.108*	-0.129*	-0.095	-0.100
	(0.069)	(0.068)	(0.068)	(0.069)	(0.069)	(0.067)	(0.066)	(0.067)	(0.069)	(0.064)
Secondary	-0.067	-0.063	-0.069	-0.067	-0.066	-0.075	-0.083	-0.107	-0.074	-0.074
	(0.069)	(0.069)	(0.069)	(0.069)	(0.069)	(0.068)	(0.066)	(0.067)	(0.069)	(0.064)
Tertiary	-0.052	-0.036	-0.038	-0.056	-0.054	-0.084	-0.099	-0.105	-0.066	-0.075
	(0.084)	(0.084)	(0.083)	(0.084)	(0.084)	(0.082)	(0.080)	(0.082)	(0.084)	(0.078)
Retirement age	0.005***	0.002*	0.002**	0.005***	0.005***	0.009***	0.007***	0.004***	0.006***	0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Player career length		0.013***								0.036***
		(0.003)								(0.005)
Number of clubs			0.026***							-0.004
			(0.005)							(0.008)
Additional job once				0.197***						0.028
				(0.068)						(0.100)
Additional job last year					0.348***					0.267**
					(0.095)					(0.135)
Log of total wage						-0.032***				-0.060***
						(0.004)				(0.013)
Log of last salary							-0.064***			-0.011
							(0.005)			(0.013)
Last league:										
Second								0.126***		0.089***
								(0.017)		(0.023)
Semi-professional								0.150***		0.164***
								(0.015)		(0.027)
Highest league:										
Second									0.070***	-0.042**
									(0.016)	(0.021)
Semi-professional									0.046***	-0.141***
									(0.015)	(0.023)
N	4,880	4,880	4,880	4,880	4,880	4,880	4,880	4,880	4,880	4,880

Note: All models control for the year. The base value of every categorical variable is not displayed (education level= low, last league= first and highest league= first). The standard error for each marginal effect is displayed below it, in the brackets. *significant at 10%; **significant at 5%; ***significant at 1%.

The results show that the effect of being Portuguese is significant across all models and that being Portuguese increases the probability of finding reemployment in Portugal by 24.6 percentage points.

Concerning the effect of education, contrarily to what we could expect, its marginal effects are in general not statistically significant, and we cannot conclude that education levels affect the probability of choosing reemployment.

The effects of the retirement age and the number of club participations along the playing career are positive and significant when modelled with the base variables, but loose significance on the last model, which considers all variables, including the player career length, since there may be some relation between them: a higher career length may imply a higher retirement age since most players start playing at around the same ages, and can also be related with more club participations. The effect of the length of the player career is positive and statistically significant both when modelled on its own with the base variables and on the last model, according to which, one additional year in the career of a football player increases its chance of finding an alternative occupation instead of remaining unemployed, by 3.6 percentage points. The positive results for the retirement age of the football player, as well as the length of the football career and the number of club participations, may be due to the fact that they can capture industry-specific human capital, which can be valuable for finding an alternative occupation, especially in the sports industry or related fields. In addition, we can think that the more clubs the player belonged to or the longer his career

lasted, the more contacts he might have acquired, and as we have seen, contacts and networks might be important sources of information about job opportunities, and therefore can increase chances of finding employment.

The results obtained show that having had an additional job while playing professionally increases the probability of returning by 19.7 percentage points, but this effect loses significance when modelled together with the effect of having an additional job on the last year before retirement, which is the variable highest effect of all. According to the results of model 5, having had a job outside the professional player career on the last year before retirement increases the chance of returning by 34.8 percentage points. We can think that when a player who has another occupation while being a professional footballer retires from sports, he can keep on with this alternative activity.

The estimation results related with the log of the total amount earned in salaries during the career and with the log of the last salary earned from the player career are negative and statistically significant, showing a trend that the more financial capital the player acquired and the higher his last salary was, the lower the likelihood of getting reemployed and pursuing a secondary career. This result is expected, since we can think that the higher the player's wage, the more he might have been able to save and accumulate, and therefore the more possibilities of being financially stable after retirement he has. When modelled together, once again, one of the variables loses significance. Model estimates show that the logarithm of the total wage is the predominant effect and that a 100% increase in the value of total amount in wages decreases the probability of pursuing an alternative occupation by 6 percentage points.

Results shows that the effect of the league the player last played on is significant and positive. Having played on the second league on the last year before football retirement increases the probability of returning by 12.6 percentage points when in comparison with an individual who last played on the first league, while this probability increase rises to 15 percentage points for someone who played on the semi-professional leagues (third and fourth leagues). The results for the effect of the highest league played during the whole career are similar, despite being lower in value. However, when both variables (last and highest leagues) are included in the same model, the last league results in higher (and positive) marginal effects and the effects of the highest league become negative.

Logit model results: Return as entrepreneur

In these models, the control group is a non-Portuguese individual, with a low level of education, with no previous entrepreneurial experience, that the last league he played on was the first league and that the highest league he played on during the whole career was the first league.

Results show that after the decision of returning is made, being Portuguese only increases the probability of becoming an entrepreneur by 3 percentage points.

The effect of the level of education on the probability of becoming an entrepreneur is only significant for the secondary education group, increasing the probability of being an entrepreneur by around 7 percentage points, when comparing to someone with low level of education. Schooling allows to capture general human capital and individuals with higher levels of education might be more likely to perceive a business opportunity (Shane, 2000) and more confident and successful at exploiting it, and therefore might be more prone to becoming an entrepreneur. However, someone who has high formal education levels (for instance higher education), might be less prone to the take the risk usually involved in creating and investing in his own business and might opt for a safer income source as an employee.

The retirement age is also significant and positive across all models, allowing to conclude that the older the player retires, the higher the chances of finding a professional occupation as an entrepreneur. This can result from the older the individual is, the more money he might have accumulated to finance his business, as well as creating more or better contacts. Similar results were obtained for the year gap between retirement and reemployment: the higher this gap, the more likely the individual is to become an entrepreneur. It has been stated that human capital is likely to depreciate during career interruptions due to unemployment periods (Baptista et al., 2014), and that firms perceive employment gaps negatively (Blanchard & Diamond, 1994). Therefore, it can happen that an individual that has been unemployed for a longer period has more difficulty in finding a job as a salaried employee and consequently decides to create his own business.

The effect of the length of the player career is significant and positive when modelled along the base variables, showing that one additional year on the individual's career increases his chances of becoming an entrepreneur by 0.6 percentage points.

Despite being a relatively small value, it can be due to the fact that a longer career may result in more financial capital that is accumulated in the form of salaries and a bigger network of contacts, which might create favourable conditions to invest and create business opportunities. However, the effect of player career length becomes negative and not significant on the last model, when included along other variables, such as the logarithm of the total wage accumulated, for instance.

Having been an entrepreneur at least once during the player career is the variable with the biggest effect on the outcome probability, increasing the probability of the positive outcome by 73.8 percentage points. Entrepreneurial human capital in the form of ownership experience and managerial competencies have been associated with better chances of identifying and exploiting more business opportunities (Ucbasaran, et al., 2008). Someone who has had some type of entrepreneurship experience is more likely to recognize opportunities and pursue an entrepreneurial path as an alternative career.

The log of the last wage and the log of the total wage accumulated during the career have statistically significant and positive effects, when modelled with the base variables. However, when all the variables are included the value of the effect of the log of the total wage increases, but makes the effect of the log of the last wage negative and not significant. According to the results, a 100% increase of the total wage increases the probability of becoming an entrepreneur by 2.9 percentage points, while the log of the last salary is irrelevant for the analysis. The effect of the total value obtained in salaries was expected, since that, considering job options when returning to the job market, someone who has accumulated higher capital during their career as a player might be more capable to create their own business that someone with fewer accumulated capital.

Table 5.2 – Marginal effects for the Logit model- Entrepreneur upon reemployment

Variables	**Model 11**	**Model 12**	**Model 13**	**Model 14**	**Model 15**	**Model 16**	**Model 17**	**Model 18**
Portuguese	0.034*	0.031*	0.033*	0.036**	0.035**	0.034*	0.034**	0.032*
	(0.018)	(0.019)	(0.018)	(0.017)	(0.017)	(0.018)	(0.018)	(0.018)
Education level:								
Basic	0.030	0.033	0.028	0.034	0.038*	0.031	0.032	0.034
	(0.025)	(0.023)	(0.025)	(0.023)	(0.021)	(0.024)	(0.024)	(0.022)
Secondary	0.066**	0.068***	0.065**	0.069***	0.070***	0.067***	0.067***	0.067***
	(0.026)	(0.025)	(0.027)	(0.025)	(0.023)	(0.026)	(0.025)	(0.024)
Tertiary	0.029	0.034	0.029	0.032	0.038	0.030	0.031	0.038
	(0.030)	(0.029)	(0.031)	(0.028)	(0.027)	(0.030)	(0.029)	(0.029)
Retirement age	0.004***	0.003***	0.004***	0.004***	0.003***	0.004***	0.004***	0.003**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Gap	0.006***	0.007***	0.006***	0.006***	0.007***	0.006***	0.006***	0.007***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Player career length		0.006***						-0.004
		(0.002)						(0.004)
Entrepreneur once			0.740***					0.738***
			(0.175)					(0.181)
Log of last wage				0.010*				-0.015
				(0.005)				(0.009)
Log of total wage					0.015***			0.029***
					(0.004)			(0.010)
Last league:								
Second						0.009		0.021
						(0.019)		(0.022)
Semi-professional						-0.011		-0.003
						(0.013)		(0.018)
Highest league:								
Second							-0.030*	-0.020
							(0.016)	(0.017)
Semi-professional							-0.024**	0.013
							(0.012)	(0.020)
N	2,269	2,269	2,269	2,269	2,269	2,269	2,269	2,269

Note: All models control for the year. The base value of every categorical variable is not displayed (education level= low, last league= first and highest league= first). The standard error for each marginal effect is displayed below it, in the brackets. *significant at 10%; **significant at 5%; ***significant at 1%.

The last league where the individual played during his career is not significant for this decision, on both models where the variable appears. The highest league is statistically significant when modelled with the base variables but not on the final model. Model 17 estimates show that someone who played on the second league or on the semi-professional leagues has lower probability of becoming an entrepreneur than someone who played on the first league.

5. Conclusion and future work

This work studies how retired players' characteristics influence the choices of returning to the labour market upon sports retirement or staying retired, and the choice of doing so as an entrepreneur or as an employee, using the QP dataset, which allows us to track information over time, given its longitudinal nature. We obtained a total of 35 001 observations, corresponding to 8 809 distinct individuals, who are either active professional football players or retired football players that engaged in another career, in Portugal, during the period of 1991 to 2017. We applied a discrete choice model- the Logit model- to these data, using the Stata software, and obtained the average marginal effects of the explanatory variables on the response probabilities of both outcomes.

About 33% of the football players in our database pursued an alternative professional occupation upon retiring from sports, in Portugal, and from this portion, only 8% returned to the market as an entrepreneur, while the rest pursued secondary careers as salaried employees.

The results obtained indicate that being Portuguese increases the probability of returning to the labour market, in Portugal, by 25 percentage points, which is expected since about 30% of the players are not Portuguese, and probably return to their countries or leave to play in another one. A higher retirement age and a higher career length are both associated with higher chances of finding a secondary career, while for the number of clubs, despite there being some evidence that it can increase this probability, we cannot confirm it with certainty. The level of formal education, contrarily to expected, does not have an effect on the probability of pursuing an alternative occupation upon sports retirement, while the effects of the last and highest leagues, when modelled with the base variables, both show the lower the league, the higher the chances of returning. Regarding players' wages, as expected, the total amount received during the players' careers decreases the probability of pursuing an alternative professional occupation after leaving football. Having an additional job while on the last year of the football career is the variable with the biggest effect on the return decision, increasing the chances of the positive outcome by 27 percentage points.

The results suggest that once the decision of returning to the labour market is made, being of Portuguese nationality only increases the chances of becoming an entrepreneur by 3 percentage points. Both a higher retirement age and a longer gap between retirement and reemployment increase the probability of pursuing an entrepreneurial path. Having the secondary level of education, increases the probability of becoming an entrepreneur by 7 percentage points when comparing to someone with a low level of education, while the effects of the basic and tertiary levels are not statistically significant. The effects of the last and highest leagues were not very relevant for the entrepreneurship decision but having had entrepreneurial experience during the player career is the biggest predictor of becoming one upon football retirement, increasing this probability by 74 percentage points. Also, as expected, receiving higher wages increases the probability of becoming entrepreneur.

When individuals decide to pursue a professional or semi-professional career in sports, they should keep in mind that they might need to find an alternative professional career after retiring from the athletic career, and therefore they should develop other interests, create contact networks, and acquire additional experience on other areas, which can be valuable for finding occupational opportunities.

Some limitations of our work include the fact that a lot of the players are not Portuguese and either move to another country to play in another club or return to their home countries upon retirement, and therefore we do not have information about their professional statuses. We also do not have information of the retired players that chose to work as self-employed without creating a company.

A potential improvement of the present work would be to include interactions between the explanatory variables in the models, in order to capture possible differences in an independent variable's effect on the outcome, depending on the values of another independent variable. In the future, our study could be extended to other sports and to other countries where these type of data is available, namely to Swedish and Danish football leagues, which we believe to be possible to obtain information from.

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