

Increasing Human Capital of Coaches—An Investigation Into Individual and Organizational Factors

Christoph Breuer, Svenja Feiler, and Lea Rossi

German Sport University Cologne

Coaches play a vital role in providing sports programs. Investing in formal coach education can serve to increase coaches' human capital, which in turn, has a positive effect on their coaching practice. The present study investigates factors influencing coaches' intention to get training for their coaching activity on an individual and organizational level. Nationwide online surveys were conducted in Germany on both nonprofit sports clubs and coaches being active within these clubs. Data were analyzed using multilevel regression analysis on a sample of $n = 2,384$ coaches in $n = 1,274$ clubs. Results show that especially the expiring validity of the coaching license, aspects of personal development, and low transaction costs are crucial factors for the intention to obtain a qualification. The results lead to several implications for theory and practice. Clubs could enhance the qualification intention and, thereby, the quality of sports programs by appointing a contact person who informs about qualification possibilities.

Keywords: human resource management, nonprofit sports organizations, sports clubs, volunteers

Coaches in sports are central to providing high-quality sports programs. They rely on their human capital in the form of education, training, and previous experiences to learn how to coach (Lemyre, Trudel, & Durand-Bush, 2007). There are many ways for coaches to learn and, thus, increase their human capital (Trudel, Milestetd, & Culver, 2020), including self-reflection (Downham & Cushion, 2020), coaching conferences (Reade, Rodgers, & Hall, 2008), or digital platforms (Sperlich & Wicker, 2021). Previous research has shown that coaches mostly rely on exchange with other coaches and reflections to increase their coaching knowledge and less on formal education programs (Gilbert, Côté, & Mallett, 2006; Lemyre et al., 2007). Coaching courses offered by national sport governing bodies are even viewed as relatively ineffective (Piggott, 2012) as coaches feel that they do not offer good content apart from sport-specific skills (Nash & Sproule, 2012).

This lack of investment into formal qualifications can be problematic as coach education has been found to increase coaching efficacy (Malete & Feltz, 2000; Sullivan, Paquette, Holt, & Bloom, 2012), perceived coaching abilities, and skills (Bertram, Culver, & Gilbert, 2016; Driska, 2018) and to correlate positively with motivation (Thieme & Wallrodt, 2018). Moreover, a high level of agreement exists among coaches, parents, and administrators that formal coach education should be required to account for the critical

role that coaches play in young people's lives (Bolter, Petranek, & Dorsch, 2018).

From an organizational perspective, increasing coaches' human capital is crucial. It positively impacts club operations (Doherty & Cuskelly, 2019) and is part of the psychological contract between clubs and coaches (Harman & Doherty, 2019). However, many active coaches have no formal training (Breuer, Rossi, & Feiler, 2020). Therefore, it is essential to identify the drivers of coaches' intention to invest in formal coach education to create more targeted motivational campaigns and identify underserved populations.

Whereas previous research has focused more on the outcomes of coaches' human capital, including coach salary (Barros & Barros, 2005; Inoue, Plehn-Dujowich, Kent, & Swanson, 2013; Soebbing, Wicker, & Watanabe, 2016; Wicker, Orlowski, & Breuer, 2016), team performance (Bykova & Coates, 2020; Cunningham & Sagas, 2004; Dawson & Dobson, 2002; Roach, 2016), and player mobility (Glenn et al., 2001), the focus of this study lies on the antecedents of coaches' intention to invest in their human capital. The central research question is:

RQ: Which individual and organizational factors impact coaches' intention to obtain a qualification?

To answer the research question, data on coaches in Germany, who can be both club members and nonmembers, were gathered and built the basis for this study, which is structured as follows: First, an overview of the qualification system in Germany is given, which shares similarities with other qualification systems, for example, in Australia (Community Coaching General Principles), Canada (National Coaching Certification Program), and the United Kingdom (U.K. Coaching). Next, the theoretical framework in combination with related literature for the underlying study is presented. Building upon that, the present study's methods and results are introduced and discussed in light of previous findings. The study concludes with an outlook of practical and theoretical implications and a discussion of limitations and pathways for future research.

Research Context

The formal qualification system in Germany is organized by the German Olympic Sports Confederation. It differentiates between coaches and trainers, with coaches being responsible for one sport and trainers being active in more than one sport, including fitness and rehabilitation activities. Coaches and trainers in nonprofit sports clubs in Germany can obtain a variety of licenses and qualifications. The qualification system offers licenses for trainers (not sport specific) and coaches (sport specific) on four levels: C, B, A, or diploma licenses. The latter is the higher level license. Whereas the license Level A and diploma are only offered for coaches, the lower two levels (C and B) aim especially at coaches and trainers active in both competitive and noncompetitive sports activities provided by sports clubs.¹ For ease of reading, the term coaches will be used in the remaining text, including both coaches and trainers.

The last qualification report provided by the German Olympic Sports Confederation in 2012 reported 582,412 valid licenses in Germany with an average increase of 40,000 new licenses per year (Deutscher Olympischer Sportbund, 2013). In total, coaches invested around 3.57 million working hours in formal coach education in 2012. The qualification report's descriptive results showed that men were more likely to obtain a qualification than women in almost all license levels except for licenses on Level C and Level B with a specialization in "sport for prevention" and "sport for rehabilitation." The national associations with the highest number of licenses were the German Gymnastics Association with 76,661 licenses, followed by the German Football Association (65,365 licenses) and the National Paralympic Committee Germany (37,723 licenses).

Theoretical Framework and Literature Review

This article is based on two theoretical approaches. First, human capital theory (Becker, 1967) is applied, and second, aspects of rational choice theory (Becker, 1976) serve as a theoretical foundation of the underlying study.

Following human capital theory (Becker, 1967, 1993), coaches' intention to do a training course for their coaching activity can be understood as an intention to invest in their human capital. Generally, individual human capital can be increased in different ways: from schooling to personality training to health investments (Becker, 1993). As Becker (1993) pointed out, the principal investments in human capital are made through education and training. When it comes to on-the-job training, general and specific on-the-job training must be differentiated (Becker, 1967). Whereas individuals would benefit from general on-the-job training in situations other than just in their current occupation, they would benefit from specific on-the-job training mainly in their current occupation. A training course for coaches can be both. It can be very specific such that coaches acquire only skills and competencies relevant for their sport and target group. It can also be more general to benefit them in different situations outside sports.

Related to Becker's argument regarding the investment in human capital, rational choice theory (Becker, 1976) argues that the decision (or the intention) to invest or not invest in human capital is based on a rational evaluation. From a large number of different alternative actions, the one that promises the greatest benefit-to-cost ratio is selected. Accordingly, the opportunity costs are included in the overall consideration. Rational choice theory has been previously employed in the context of volunteers in sports

organizations to explain individuals' decisions from an individual and organizational perspective (e.g., Erlinghagen, 2003; Flatau, 2009; Wicker, Swierzy, & Breuer, 2018). It is now assumed that coaches (both volunteers and paid staff in the context of the underlying study) intend to invest in formal coach education when the expected benefits exceed the costs.

Formal coaching education leads to increased skills and knowledge (Bertram et al., 2016; Driska, 2018). These, in turn, can contribute to the achievement of personal goals, which can be monetary or nonmonetary. The greater the importance of the activity as a coach to achieve personal goals, the more likely the person might be to take part in formal coach education. Moreover, coaches with a higher financial motive might have a higher intention to invest in formal coach education as they might expect to receive higher expense allowances when they have a formal coach qualification. Previous studies have shown that coaches' motivation and dispositions of intentionality (e.g., in the form of open-mindedness and inquisitiveness) and reciprocity impact coaches' engagement with formal education activities (Griffiths & Armour, 2013; Thieme & Wallrodt, 2018).

Coaches will also benefit from a formal coach education if they feel constrained in their engagement due to their (limited) knowledge and skills. Previous research has shown that coaches feel mostly strained by problematic interactions with parents of children in the training group (McCallister, Blinde, & Kolenbrander, 2000) and, therefore, desire communication skills to be conveyed in coach education programs (Vargas-Tonsing, 2007). Moreover, licenses only remain valid if they are renewed regularly. If they are not renewed through additional investments in human capital, past investments in licenses are lost and become sunk costs. Thus, investment in further formal education represents a benefit to the holder of valid licenses in particular. Based on this argument, the following hypothesis is derived:

H1: The higher the individual benefits of coaching activities, the higher the intention to invest in formal coach education.

The resulting benefits are greater the longer, and more frequently, coaches can profit from the investment (Becker, 1967). Accordingly, it can be assumed that coaches who plan to continue working as coaches for a longer time, give many training hours, or are active in several clubs will benefit more from an investment. Consequently, they are more likely to invest. Based on these theoretical considerations, it is assumed that:

H2: The longer and more frequently coaches can profit from the investment, the higher is the intention to invest in formal coach education.

The costs of investment decisions also include opportunity costs. Participation in training means an investment of time. Moreover, this time cannot be invested elsewhere in a meaningful way. Time is usually invested alternatively mainly in professional work or family (Coleman, 2002; Lindner, Johns, & Butcher, 1991; Schlesinger & Nagel, 2013). Accordingly, a heavy work or family schedule signals significant opportunity costs of taking part in a coach education program. This assumption is in line with previous research, which has identified volunteers' demands as a barrier to coach education (Wiersma & Sherman, 2005). Moreover, high time demands have been identified as one reason to discontinue the coaching activity altogether (O'Connor & Bennie, 2006). Consequently, the higher their time opportunity costs, the less likely coaches will participate in coach education programs. It can be expected that:

H3: The higher the opportunity costs of time, the less likely coaches intend to participate in formal coach education.

Moreover, the organizational setting and work environment influence coaches and their decisions (Knight, Rodgers, Reade, Mrak, & Hall, 2015; Rundle-Thiele & Auld, 2009; Swierzy, Wicker, & Breuer, 2018a). The club can reduce the individual's direct and transaction costs of formal coach education by taking over costs, looking for appropriate programs, supporting registration, and reimbursement. Thus, it can be expected that:

H4: The more a club reduces the costs, the higher the coaches' intention to invest in formal coach education.

The club can also increase the individual nonmonetary benefits of coach education programs by providing recognition and giving freedom for coaches' new ideas. A positive organizational environment that increases benefits is likely to increase the intention to participate in coach education programs. Thus, the last hypothesis reads:

H5: The more a club provides nonmonetary benefits, the higher the coaches' intention to invest in formal coach education.

Methods

Data Collection and Sample

To answer the research question, a quantitative study was conducted. Data were retrieved from two online surveys of nonprofit sports clubs and coaches undertaken as part of the seventh wave of the *Sport Development Report*. The *Sport Development Report* is a large-scale, longitudinal online survey of nonprofit sports clubs in Germany and has been carried out since 2005. From the seventh wave (2017/2018) onward, apart from sports clubs, individual stakeholder groups have been surveyed. The survey design of both the club survey and the stakeholder surveys were developed based on relevant existing literature and theory (e.g., Clary et al., 1998; Farrell, Johnston, & Twynam, 1998; Hall et al., 2003; Hoye, Cuskelly, Taylor, & Darcy, 2008; Rittner & Breuer, 2004; Wang, 2004; for a detailed overview of the method see Breuer & Feiler, 2020a). For this study's purpose, data from the first stakeholder survey of coaches were used and matched with data from the club survey of the seventh wave.

The 16 state sports confederations provided e-mail addresses of their respective sports clubs to contact the clubs. The online club survey was conducted between October and December 2017, was voluntary and anonymous, and resulted in $n = 19,889$ returned questionnaires, which presented a response rate of 25.7%. To comply with research ethics, clubs could interrupt or stop the survey at any point and were informed about data protection regulations according to the valid data protection laws in Germany and North Rhine-Westphalia. At the end of the questionnaire, clubs were asked for their willingness to participate in the stakeholder survey on coaches. Overall, 4,202 clubs agreed to participate in the coaches' survey. These clubs that had voluntarily agreed to participate in the survey on coaches were contacted for this survey in spring 2018 and asked to distribute an individual club link for the online survey to their coaches. The clubs and the coaches were informed that participation in the survey was voluntary and anonymous and that each participant could stop the survey at any time. This approach resulted in a total sample of $n = 6,752$ coaches from

$n = 2,352$ clubs. However, the final sample for the underlying study amounted to $n = 2,384$ coaches in $n = 1,274$ sports clubs due to missing values.

The sample characteristics of these clubs and coaches are displayed in Table 1. There was a variation concerning club size, type of club, community size, and foundation years of the clubs. Club size varied between small clubs with up to 100 members (23.2%) and very large clubs with more than 2,500 members (2.3%). The largest share of clubs (31.4%) had between 101 and 300 members. More than half of the clubs were multisports clubs, that is, offering more than one type of sport. Concerning the clubs' location, about 46% of clubs were situated in rather smaller communities with up to 20,000 inhabitants, whereas 10.3% were located in large communities or cities with more than 500,000 inhabitants.

Sports clubs in Germany have a long tradition, which was also reflected in the sample of this study. About 15% of the clubs were founded before 1900 and a further 23% between 1900 and 1930. Every fourth club was founded between 1961 and 1990, and another 22% had foundations years after the reunification of former eastern and western Germany (Table 1). The organizational survey was mainly answered by volunteer board members (93.2%). In 6.1% of the clubs, a paid club employee was involved in filling out the online survey.

Pertaining to coaches, variation can be seen concerning age, gender, type of employment, and most frequently coached sports. About 39% of the surveyed coaches were women. This share was slightly higher than the average share of female sports club members in 2017, which amounted to nearly 36% (Breuer & Feiler, 2020b). The majority of the sampled coaches was between 41 and 60 years old, whereas a quarter was between 27 and 40. Almost 83% were voluntary coaches, whereas about 14% worked on a part-time basis, and about 3.3% of the coaches had a full-time coaching position. The most frequent sports of the coaches in this study were football (15.6%), apparatus gymnastics (9.5%), track and field (5.2%), swimming (4.8%), and volleyball (4.7%). Thus, both individual as well as team sports were taught and practiced by the coaches.

Measures and Variables

An overview of the variables in the models is presented in Table 2. The dependent variable, namely the intention of coaches to invest in formal coach education, was assessed with the statement: "I plan to do a training course for my coaching activity in the next year" (*intention_to_qualify*) and measured on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) (Table 2). This variable was developed in addition to existing items that reflected intentions to continue volunteering, as measured and investigated by Hoye et al. (2008) for Australian rugby clubs. These researchers followed a general approach to measure and assess volunteers' motives by Clary et al. (1998).

Individual level. Based on the theoretical framework and related literature, the independent variables on the individual level reflected the following areas: individual benefits (H1), cumulative benefits (H2), and opportunity costs (H3).

Individual benefits (H1) in the form of personal goals were reflected by six variables of which four were related to nonmonetary goals. These items reflected a feeling of personal constraint for the coaching activity due to a lack of knowledge and skills (*knowledge*), the aim to develop personally (*development*), the aim to share their knowledge and skills with others (*skills*), and the goal of learning for other areas in life (*learning*). The fifth variable

Table 1 Sample Characteristics (n = 2,384 Individual Level; n = 1,274 Organizational Level)

Clubs	Categories	Share (in %)
Club size (members)	≤100	23.16
	101–300	31.40
	301–1,000	30.60
	1,001–2,500	12.56
	>2,500	2.28
Type of club	Single sport club	47.49
	Multisports club	52.51
Community size (inhabitants)	≤20,000	45.76
	20,001–100,000	30.30
	100,001–500,000	13.66
	>500,000	10.28
Foundation year	Before 1900	14.85
	1900–1930	22.56
	1931–1945	2.20
	1946–1960	13.76
	1961–1990	24.68
	since 1991	21.95
Person(s) filling out the questionnaire	Voluntary board member	93.16
	Paid employee	6.13
	Volunteer outside the board	4.01
	Another person	1.42
Coaches	Categories	Share (in %)
Gender	Male	60.70
	Female	39.30
Age (years)	≤14	0.04
	15–18	1.13
	19–26	11.33
	27–40	24.71
	41–60	51.97
	>60	10.82
Type of employment	Volunteer	82.71
	Part time	14.02
	Full time	3.27
Main sport (10 most frequent)	Football (soccer)	15.58
	Apparatus gymnastics	9.45
	Track and field	5.17
	Swimming	4.83
	Volleyball	4.66
	Fitness	3.95
	Handball	3.49
	Dancing	3.15
	Gymnastics	3.15
	Table tennis	2.86

reflected whether a coach carried out his or her activity because he/she was paid for it (*money*), that is, a monetary goal. Except for *knowledge*, which was measured on the same 5-point Likert scale as the dependent variable, the four variables *development*, *skills*, *learning*, and *money* were measured on a 7-point scale ranging from 1 (*completely disagree*) to 7 (*completely agree*). These items

were derived from existing research on volunteer motivation (Clary et al., 1998; Farrell et al., 1998; Hoye, et al., 2008; Wang, 2004) and adapted to the research context of coaches in sports clubs. Finally, past investment in coach qualification in the form of licenses was measured by a nominal variable, which reflected whether a coach was a current license holder (*valid_license*).

Table 2 Overview of Variables and Summary Statistics (n = 2,384 Individual Level; n = 1,274 Organizational Level)

Variable	Operationalization	Mean	SD	Min	Max
Dependent variable					
Intention_to_qualify	I plan to do a training course for my coaching activity in the next year. (1 = <i>strongly disagree</i> to 5 = <i>strongly agree</i>)	3.68	1.37	1	5
Independent variables					
Individual benefits (H1)					
Knowledge	My knowledge and skills constrain me in my activity as a coach (1 = <i>strongly disagree</i> to 5 = <i>strongly agree</i>)	1.70	0.95	1	5
Development	I carry out my activity as a coach to develop personally (1 = <i>completely disagree</i> to 7 = <i>completely agree</i>)	5.45	1.42	1	7
Skills	I carry out my activity as a coach to share my knowledge and skills with others (1 = <i>completely disagree</i> to 7 = <i>completely agree</i>)	6.01	1.09	1	7
Learning	I carry out my activity as a coach to learn things that I can apply to other areas (1 = <i>completely disagree</i> to 7 = <i>completely agree</i>)	5.13	1.52	1	7
Money	I carry out my activity as a coach because I get paid for it (1 = <i>completely disagree</i> to 7 = <i>completely agree</i>)	2.42	1.80	1	7
Valid_license	I have a currently valid license from a federation or state sports confederation as a coach (1 = yes)	0.64	—	0	1
Cumulative benefits (H2)					
Coach_in3years	I am likely to be volunteering as a coach at this club 3 years from now (1 = <i>strongly disagree</i> to 5 = <i>strongly agree</i>)	3.90	1.16	1	5
Otherclubs	Coach in more than one club (1 = yes)	0.16	—	0	1
Coaching_hours	Number of coaching hours per week	4.14	3.90	0.2	50
Opportunity costs (H3)					
Working_time	Weekly working time (in hours)	32.95	15.06	0	98
Care_time	Weekly time spent for caring for children or household members in need of care (in hours)	12.97	25.67	0	168
Clubs' cost-oriented measures (H4)					
Administration	Club takes over administrative tasks (1 = <i>not at all</i> to 5 = <i>very strongly</i>)	3.41	1.22	1	5
Travel_allowances	Club pays travel allowances (1 = <i>not at all</i> to 5 = <i>very strongly</i>)	3.07	1.44	1	5
Expense_allowances	Club pays expense allowances (1 = <i>not at all</i> to 5 = <i>very strongly</i>)	3.43	1.40	1	5
Costtakeover	Club takes over cost of further and advanced training (1 = <i>not at all</i> to 5 = <i>very strongly</i>)	4.29	1.07	1	5
Fee_reduction	Club grants reduction in membership fees (1 = <i>not at all</i> to 5 = <i>very strongly</i>)	2.09	1.47	1	5
Person_qual	Our club has a person in charge of taking care of further qualification and training for volunteers and/or paid staff (1 = yes)	0.56	—	0	1
Clubs' benefit-oriented measures (H5)					
Recognition	Clubs grants recognition of coaches in the club media (1 = <i>not at all</i> to 5 = <i>very strongly</i>)	3.33	1.21	1	5
Honors	Club grants honors and awards to coaches (1 = <i>not at all</i> to 5 = <i>very strongly</i>)	3.15	1.34	1	5
Newideas	Club supports new ideas of coaches (1 = <i>not at all</i> to 5 = <i>very strongly</i>)	3.96	0.91	1	5
Controls					
Age	Age in years	44.53	13.47	14	89
Age_sq	Squared term of age	2,164	1,196	196	7,921
Gender	Gender (female = 1)	0.39	—	0	1

Cumulative benefits (H2) of a coach qualification were measured by three variables reflecting long-term plans and the coaching activity frequency. The first variable reflected whether a coach planned to be active for the club in 3 years (*coach_in3years*) as benefits of investments in coach qualification were assumed to be larger the more prolonged the activity lasted. This item was derived from prior research on volunteers' intention to continue their activity (Clary et al., 1998, Hoye et al., 2008). Two other variables measured the

frequency of the coaching activity. These variables reflected whether a coach was acting in more than one sports club as a coach (*otherclubs*) and measured the hours spent on coaching per week (*coaching_hours*). Working in more clubs and higher invested time volumes indicate a higher commitment by coaches, which in turn, increases their benefits derived from coaching qualifications.

Two variables measured opportunity costs (H3) of coaches. These were the weekly working time (*working_time*) and weekly

time spent for care work (*care_time*) for children or household members in need of care.

Moreover, the study included controls for age and gender based on the current situation of coach qualification in Germany (Deutscher Olympischer Sportbund, 2013). Thus, age (*age*), its squared term (*age_sq*), and gender (*gender*) of coaches were included as variables on the individual level.

Organizational level. As explained in the theoretical framework, it was essential to take the organizational level, that is, the club level, into account when investigating coaches' intention to invest in qualification. The independent variables on the club level reflected the organizational setting in which the coaches performed their coaching activity. These could be subdivided into cost- (H4) and benefit-oriented measures (H5).

Possible reductions of direct and transaction costs for coaches by the clubs were reflected by six variables (H4) of which five were measured on a 5-point Likert scale from 1 (*not at all*) to 5 (*very strongly*). The following five variables reflected how far clubs offered support to their coaches: the club took over administrative tasks for coaches (*administration*), the club paid a travel allowance to coaches (*travel_allowance*), the club paid an expense allowance to coaches (*expense_allowance*), the club took over the cost of further and advanced training for coaches (*costtakeover*), and the club granted a reduction in membership fees for coaches (*fee_reduction*). The sixth variable reflected whether the club had a person who took care of further qualification and training for volunteers and paid staff (*person_qual*). Such a person would serve as a contact for coaches in case of questions regarding qualification.

A positive organizational environment was further created by organizational support in the form of benefit increases for coaches. These benefits were measured with three variables (H5), which were all measured on a 5-point scale. The clubs' benefits for coaches were reflected by clubs granting recognition of coaches in the club media (*recognition*), by providing honors and awards to coaches (*honors*), and by supporting new ideas of coaches to give them design freedom in their teaching activities (*newideas*).

Data Analysis

As coaches were nested within sports clubs and could be traced back to their clubs via individual club links, data were analyzed using multilevel analysis to consider the hierarchical structure of the data. Applying multilevel analysis was preferred to ordinary regression to take into account that individuals belonging to the same social group, in this case, sports clubs, were likely to be more similar to each other compared with individuals from other sports clubs as they were influenced by the social group they belonged to (Maas & Hox, 2005). Thus, individual coaches were clustered within sports clubs (Rabe-Hesketh & Skrondal, 2012). Therefore, the assumption of independent observations does not hold for hierarchical data structures as observations are assumed to be independent across clubs but not necessarily within clubs, that is, the same cluster. For the data used in this study, this meant that coaches belonging to the same club were likely not to be independent of each other due to unobserved club-specific features (Andreß, Golsch, & Schmidt, 2013). The test statistics confirmed this assumption as described next.

Data were analyzed applying two-level random intercept models with covariates from both Level 1 (i.e., coaches) and Level 2 (i.e., clubs). Two multilevel models were estimated: one model

on the full sample ($n = 2,384$ coaches from $n = 1,274$ clubs) and one model on a reduced sample with $n > 1$ observation per sports club ($n = 1,528$ coaches from $n = 418$ clubs) as the distribution of observations showed that 856 clubs within the sample were represented by only one coach. Although group sizes of one observation per group were not considered problematic as long as there were more clubs with more than one observation on the lower level (Rabe-Hesketh & Skrondal, 2012), the approach of estimating two multilevel models was chosen as a robustness check. Such an analysis approach has previously been taken by Swierzy, Wicker, and Breuer (2018b).

The sample size on the organizational level was considered sufficient to run multilevel models as the number of cases was larger than 50 (Maas & Hox, 2005). In addition, the different test statistics suggested an application of multilevel modeling in both models. The intraclass correlation coefficient, which represents the correlation between individuals from the same group (Hox, 2010), that is, the degree of similarity between coaches of the same club, was $p = .053$ in the unconditional model, that is, the random intercept-only model (null model) without any covariates of Model 1, and also $p = .053$ in the unconditional model of Model 2. In the full model including covariates from both levels, the intraclass correlation coefficient was $p = .038$ for Model 1 and $p = .034$ for Model 2. In cross-sectional research studies, intraclass correlation coefficient values of between .05 and .25 are common, although lower values have been reported in sport management studies (cf. Swierzy, Wicker, & Breuer, 2019). In addition, the likelihood ratio test, which checks whether there is sufficient between-cluster, that is, club variance, also indicated that multilevel modeling should be preferred to ordinary regression analysis for both models as the test was significant.

Results

Descriptive Statistics

An overview of the summary statistics is presented in Table 2 and the distribution of the dependent variable in Table 3. The results show that coaches indicated a high intention to invest in formal coach education. About 39.1% of the coaches strongly agreed on planning to do a training course for their coaching activity in the next year, and about 22.2% rather agreed to this statement. About 10.5% rather disagreed, and about 11% strongly refused to further qualify for their coaching activity. About 17.2% were undecided (Table 3). Overall, the mean of the dependent variable was 3.68 (Table 2).

Coaches strongly derived individual benefits of their coaching activity from nonmonetary goals, that is, sharing their knowledge and skills with others ($M = 6.01$), from personal development ($M = 5.45$), and by learning things that can be used in other areas ($M = 5.13$). In line with these results, only a few coaches felt constrained by their knowledge and skills ($M = 1.70$). Monetary goals were, on average, weak among coaches ($M = 2.42$). Concerning a previous investment in coach qualification, about 64% of coaches owned a currently valid license.

Coaches rather strongly agreed on staying with the club as a coach for another 3 years ($M = 3.90$). Overall, 16% of the coaches stated that they were coaching in more than one sports club with the average number of coaching hours amounting to 4.14 per week.

Concerning opportunity costs, coaches worked, on average, 33 hr/week in their regular job and spent 13 hr for care work, that is, for children or household members. Regarding sociodemographics,

Table 3 Distribution of the Dependent Variable ($n = 2,384$)

I plan to do a training course for my coaching activity in the next year	Share (in %)
Strongly disagree	10.99
Rather disagree	10.49
Neither agree nor disagree	17.24
Rather agree	22.19
Strongly agree	39.09

coaches were, on average, 45 years old. The minority of them were female (39%).

In terms of the organizational setting, the results show that clubs tried to reduce coaches' individual and transaction costs by taking over the cost of further and advanced training ($M = 4.29$). Moreover, clubs also stated that they paid expense allowances ($M = 3.43$) and took over administrative tasks for coaches ($M = 3.41$). On the other side, travel allowances ($M = 3.07$) and membership fee reductions ($M = 2.09$) were less often used by clubs. More than half of the clubs (56%) reported having a person in charge of organizing further qualification and training for volunteers and paid staff (Table 2).

To increase benefits for coaches, clubs also used further measures. New ideas of coaches were especially supported by clubs ($M = 3.96$). Moreover, clubs showed recognition to their coaches by mentioning them in the club media ($M = 3.33$) and granting honors and awards to coaches ($M = 3.15$).

Multilevel Models

Overall, the multilevel analyses showed rather consistent results in the two estimated models (Table 4). In both models, individual- and organizational-level factors played a role in explaining the intention to invest in further training. This result was supported by similar R^2 values for both levels and both models (R^2 calculated as suggested by Snijders and Bosker (1994)). In Model 1 (Model 2), 24.3% (25.2%) of the variance was explained by individual-level factors and 24.5% (27.5%) by organizational-level factors.

Individual-level factors, particularly individual benefits in the form of personal development and holding a valid license, increased the intention to invest in further training significantly in both models, thus, at least for two of six variables, H1 can partially be confirmed. Moreover, cumulative benefits that arose due to a more prolonged and more frequent coaching activity showed positive and significant effects on the intention to qualify in both models. This result applied to all three variables used to test H2, that is, being active in more than one sports club, spending more hours weekly on coaching, and a longer term plan to stay as a coach with the club. Thus, H2 can be confirmed.

The two variables reflecting opportunity costs, that is, time spent on the job and the care for family members, did not show any significant effects on the intention to invest in formal coach education. Therefore, H3 is rejected.

On the club level, three variables reflecting organizational support for coaches through direct or transaction cost reduction were found to significantly affect coaches' intention to invest in formal coach education. First, having a person in charge of organizing further education and training for volunteers and paid staff showed a positive and significant effect in both models. Second, reducing membership fees for coaches had a positive and

significant effect on the coaches' intention to qualify in Model 1. Third, paying expense allowances to coaches by clubs had a significant negative effect on the intention to qualify in Model 2. Therefore, H4 can only partly be confirmed, and H5 has to be rejected as none of the three variables reflecting organizational benefits showed significant effects.

Finally, the control variables show that female gender was significantly positively correlated with the intention to qualify.

Discussion

The present study's results show that coaches' intention to invest in formal coach education is determined both by individual factors and by organizational factors and that both levels seem to be equally important.

At the coaches' level, a range of expected benefits determines the intention to invest in formal coach education significantly. This result applies to the individual benefits but also, especially, to the cumulative benefits. At the level of individual benefits, the intention to invest in formal coach education is particularly high if it allows coaches to renew their existing license. This process prevents them from losing the return on previous investments in formal coach education. At the level of individual benefits, it is also relevant whether the coaches would like to develop personally through their activity. If this is the case, the intention to qualify increases significantly. For investing in formal coach education, the motive of personal development through the coaching activity is, thus, more important than other coaching motives, such as sharing knowledge, financial remuneration, or benefiting from the activity in other contexts. Interestingly, overcoming a lack of knowledge and skills limiting the coaches' ability to perform their job also does not increase the intention to qualify. Thus, the results on the individual benefits confirm and specify general findings from the sport volunteering literature that point to the importance of personal goals and intrinsic motives (Clary et al., 1998; Hoye et al., 2008; Wang, 2004). Consequently, aspects of personal development play a decisive role in the area of coach education. However, even more significant is that the investment in earlier training is not lost but retained.

In addition to these individual benefits, the so-called cumulative benefits are also decisive for the consideration of participating in a formal educational measure. The benefits of a formal education increase significantly if the coach can profit from it disproportionately: in many training hours, over many years, in several clubs. This result is in line with the theoretical assumptions based on human capital theory (Becker, 1967, 1993) and provides the first evidence on the relationship between coach commitment and investments in formal coach education.

Unlike the cumulative benefits, opportunity costs do not seem to influence the intention to qualify. Thus, our results contrast with previous findings on barriers to coach education (Wiersma &

Table 4 Results of the Multilevel Analyses

Intention to qualify	Model 1: Full sample	Model 2: Reduced sample
Individual level		
Individual benefits (H1)		
Knowledge	0.031 (1.151)	0.007 (0.225)
Development	0.160 (7.238)***	0.176 (6.396)***
Skills	-0.019 (-0.743)	-0.031 (-0.974)
Learning	0.018 (0.894)	-0.008 (-0.329)
Money	0.004 (0.262)	0.024 (1.297)
Valid_license	0.768 (14.246)***	0.736 (11.108)***
Cumulative benefits (H2)		
Coach_in3years	0.275 (12.300)***	0.290 (10.516)***
Otherclubs	0.291 (4.302)***	0.370 (4.311)***
Coaching_hours	0.022 (3.359)***	0.022 (2.560)**
Opportunity costs (H3)		
Working_time	-0.001 (-0.587)	-0.000 (-0.018)
Care_time	0.001 (0.995)	0.001 (0.409)
Club level		
Clubs' cost-oriented measures (H4)		
Administration	-0.011 (-0.446)	0.023 (0.741)
Travel_allowances	0.019 (0.909)	-0.022 (-0.826)
Expense_allowances	-0.016 (-0.719)	-0.066 (-2.208)**
Costtakeover	0.035 (1.193)	0.013 (0.300)
Fee_reduction	0.031 (1.767)*	0.023 (1.061)
Person_qual	0.111 (2.074)**	0.122 (1.767)*
Clubs' benefit-oriented measures (H5)		
Recognition	0.020 (0.800)	0.013 (0.390)
Honors	0.005 (0.215)	0.014 (0.471)
Newideas	0.031 (0.936)	0.015 (0.337)
Controls		
Age	0.014 (1.128)	0.012 (0.803)
Age_sq	-0.000 (-0.692)	-0.000 (-0.445)
Gender	0.156 (2.831)***	0.152 (2.240)**
constant	0.167 (0.497)	0.626 (1.402)
Test statistics		
ICC	0.038	0.034
LR test (<i>p</i>)	4.56 (.016)**	3.69 (.027)**
Wald χ^2	759.25***	510.24***
Log likelihood	-3,795.29	-2,436.90
$R^2_{Coaches}$.243	.252
R^2_{Clubs}	.245	.275
$n_{Coaches}$	2,384	1,528
n_{Clubs}	1,274	418

Note. *z* values in parentheses. ICC = intraclass correlation coefficient; LR = likelihood ratio.

p* < .1. *p* < .05. ****p* < .01.

Sherman, 2005) and coach engagement (O'Connor & Bennie, 2006). According to our findings, possible alternative use of time does not influence the intention to participate in formal coach education.

The organizational setting is also crucial. Overall, the organizational level has the same influence on the intention to invest in formal coach education as the individual level. However, concrete

factors influencing the intention to qualify could only be identified to a modest extent. It should be noted, however, that, for one, cost-oriented measures are more effective than benefit-oriented measures. No significant influence was found for the latter. Second, among the cost-oriented measures, transaction cost reducing measures seem to be the most effective. Actions that help reduce the coaches' transaction costs for finding a suitable qualification

measure are particularly effective. This process of finding an appropriate qualification possibility can be achieved, in particular, if the club differentiates a position that takes care of the training and further education of full-time and voluntary club employees. Other cost-oriented measures have either no effect or only an unclear effect. General findings on the role of the club itself (Knight et al., 2015; Rundle-Thiele & Auld, 2009; Swierzy et al., 2018a) are, thus, partially confirmed and specified with regard to the effectiveness of a special functional role.

From a theoretical perspective, the study specifies the applicability of human capital theory to coach education issues in three ways, which, conversely, could also stimulate the general human capital theory: (a) it shows the importance of subjective aspects for cost-benefit estimation; (b) it points out the importance of short-term benefits, whereas classical human capital theory poses that individuals invest in their human capital to acquire long-term benefits (Becker, 1967, 1993); and (c) the findings reveal that transactions costs matter in the area of human capital investments.

With regard to the application of rational choice theory, the study emphasizes that organizational contextual factors are important in rational choice decisions and that focusing solely on individual factors is likely to lead to inaccurate or false conclusions.

Conclusion

To conclude, the underlying study has shown that individual factors in the form of individual and cumulative benefits drive coaches to invest in further qualifications. However, organizational factors can also influence the coaches' decisions to qualify further, namely by offering support through a dedicated contact person.

Implications

The results of this study have both theoretical and practical implications. In terms of theory, the study reveals the applicability of human capital theory to the coach education context. It could be shown that coaches act rationally in their intention to invest in further qualifications as they take into account the expected benefits, mainly concerning personal benefits. Moreover, it was highlighted that the intention to invest in further training—which might lead to the decision to invest in a qualification—is determined individually and structurally. Thus, both levels play an essential role in determining coaches' qualification intention.

The study has several implications for the management of sports clubs and policymakers aiming to increase coaches' qualification status in nonprofit sports clubs. For one, clubs should be advised to appoint a dedicated person in their organization to manage and advance qualification programs for coaches. These contact persons should have general knowledge about the license system (e.g., in Germany) and should be able to offer advice for interested coaches and other staff members. This would decrease the transaction costs of coaches in the form of search costs. Moreover, clubs should be aware of the relationship between coach qualifications and the commitment to the coaching activity. Offering coaches a long-term perspective in the club or more engagement opportunities in other clubs can increase the benefits for coaches and motivate them to invest in formal coach education.

Sports federations that offer formal coach education should also emphasize their respective contributions to personal development. A focus on personal and social skills should be put in coach education programs to increase coaches' motivation to invest in formal qualifications. In addition, federations should make it even more transparent in their communications that licenses become invalid if coaches do not continue their education. Finally, sports organizations should be aware of the higher intention to invest in further training by female coaches. Programs should be designed in a way that they are especially attractive to female coaches, especially as they are underrepresented in higher license levels.

Limitations and Future Research

Although the study has been carefully planned and conducted, certain limitations need to be addressed. First, the dependent variable was measured as the intention to invest in further training rather than actual behavior—meaning the actual investment into a qualification. This operationalization could lead to an overestimation of positive indications as it might be socially desirable to indicate an intention to invest in formal coach education. However, as previous research has shown (Webb & Sheran, 2006), intention is an important antecedent of actual behavior. The findings provide important insights for sport managers who aim to motivate their coaches to get further training.

Second, due to the study design of first surveying clubs and then surveying individuals of a selection of clubs that agreed to participate in the stakeholder surveys, there might be a problem of self-selection bias. This means that only coaches from clubs who took part in the club survey could participate in the coach survey. Second, coaches who took part in the coach survey might be particularly engaged in their coaching activity and their intention to qualify further. Nevertheless, this study is one of the only large-scale, recent nationwide studies on sports clubs, including information on clubs' coaches—at least to the authors' knowledge. The study can thus be regarded as a starting point to develop methodological shortcomings further.

Future research should extend the present findings by (a) considering characteristics of the coach education program which coaches intend to invest in (e.g., price, duration), (b) investigating the determinants of other club staffs' qualification behavior (e.g., club officials), and (c) exploring other forms of learning within the context of sports. These pathways for future research would help to get a more holistic picture of the lifelong learning processes within sports. As nonprofit sports clubs are valuable players for many different population groups and society, high-quality sports programs through qualified coaches will help clubs keep this distinct and vital position.

Note

1. Moreover, there are licenses offered for youth leaders, club managers, and sports physiotherapists and a variety of further qualifications that are not specific to coaches (e.g., Wicker et al., 2016). However, as the focus is on coaches, these are not considered further.

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