Learning and knowledge transfer by humans and digital platforms: which tools best support the decision-making process?

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Abstract

Purpose – *This study aims to investigate the impact of technologies on the knowledge transfer process. In particular, the authors aim to analyze the topic of knowledge brokers and the relationship between broker and digital tools in the knowledge transfer process in the sport context. The study developed, therefore, aims to investigate the creating of this environment for knowledge transfer and knowledge sharing between man and machine, looking to improve the planning of technical sports projects of the clubs.*

Design/methodology/approach – *This paper presents a qualitative approach aimed at analyzing how platforms and the players' agents can be useful tools in the knowledge transfer process. The research was conducted through a survey with a structured questionnaire via e-mail to 64 managers at the head of clubs playing in the Italian Series B basketball in the 2021–2022 championship. The total number of questions administered is 21.*

Findings – *The results demonstrate how sports directors, for the construction of a technical sports project, in addition to learning off the pitch by interactions with media, fans, pressure management, leadership skills, positive attitude, tolerance, understanding of other opinions, background and cultures, see the athletes' agents as the main stakeholder of the managers. The research resulted, by the clubs' managers, in both formal learning and informal-type learning. Informal learning, by far the most frequently used and most important in the general learning process of executives, is identified in the use that executives make of information available on digital platforms and of the fiduciary relationships that management has with players' agents.*

Originality/value – *The results demonstrate the valuable opportunities for executives, coaches, managers and clubs to strategically manage learning and knowledge sharing. Improving and managing knowledge-sharing strategies would help increase knowledge, not only of the sports directors but also of the entire club, thus improving the absolute quality of the game within the Italian basketball divisions. The authors have developed an innovative framework regarding the construction of a "typed sports technical project", and the authors have identified a series of crucial phases capable of determining the creation of a new roster of athletes.*

Keywords *Knowledge transfer, Sport, Knowledge learning, Digital platform, Basket, Knowledge broker*

Paper type *Research paper*

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1. Introduction

Learning in the workplace and interactions between peers have become important issues for knowledge-intensive firms. The literature asserts that the level of workplace knowledge is directly linked to the efficacy of both formal and informal learning (Poell, 2013). Previous research has focused on formal learning opportunities among employees, such as face-to-face learning events with a designated teacher or trainer (Eraut, 2000). Although informal learning is considered a more effective way of learning (Boud and Garrick, 1999; Garrick, 1998), only a few

scholars have addressed informal learning in the workplace (Manuti *et al.*, 2015; Marsick and Volpe, 1999).

Learning improves not only the basic knowledge and skills of each individual but also that of the entire organization (Senge, 1990). Indeed, it is through organizational routines that individual knowledge is converted into organizational knowledge (Eisenhardt and Santos, 2002). The ability of an organization to create and use this knowledge is the key to gaining sustainable competitive advantage (Nonaka and Takeuchi, 1995). Advanced organizations manage knowledge in the sense that they strategically construct, transform, organize, distribute, use and transfer knowledge (Wiig, 1993).

On that assumption, our research aims at investigating the importance of learning and transferring knowledge to set up an efficient decision-making process. In particular, we want to investigate whether the human capital represented by players' brokers or the innovation represented by digital platforms offers a more useful tool in informal workplace learning.

The research context for the analysis is sport. In the sports context, formal learning is identified as the knowledge that managers acquire from sporting contexts, such as training, matches and official events. Informal learning, by far the most frequently used and the most important in the general learning process of executives, is the use that executives make of information available on digital platforms and in the fiduciary relationships, they have with the players' brokers. The above assertion supported by previous studies that demonstrate the significance of informal learning (Boud and Garrick, 1999; Cushion and Nelson, 2013; Garrick, 1998; Mallett *et al.*, 2009).

Effective management of high-performance athletes and teams to build competitive advantage is receiving increased practitioner interest (Sotiriadou and Shilbury, 2013). However, research is relatively sparse and further studies would help in clarifying the complexity of the task of managing athletes and the decision-making process around identifying and recruiting athletes for high-performance teams.

However, when it comes to learning and knowledge sharing, sports management scholars focus primarily on the role of the coach and the knowledge transfer skills between players (Cassidy *et al.*, 2006; Coté and Gilbert, 2009; Kellett, 1999; Werner and Dickson, 2018). Previous research has focused on formal learning opportunities among employees, such as face-to-face learning events with a designated teacher or trainer (Eraut, 2000). Although informal learning is considered a more effective method (Boud and Garrick, 1999; Garrick, 1998), only a few scholars address this style of learning in the workplace (Manuti *et al.*, 2015).

Moreover, in the sporting context, studies of the learning and knowledge transfer between players and their brokers have been mainly focused on the football industry, with other sports receiving limited attention. With this in mind, our research seeks to fill this gap by analyzing the basketball sector.

In Italy, sports associations and clubs produce annual revenues of over €40bn in an average year. In this context, the importance of sports disciplines is affirmed, and of these, we find basketball is the third most practiced sport, with 346,144 participants registered in various capacities. The Italian Basketball Federation recognizes the A1, A2 and B series championships as categories of national interest. Series B is the championship with the largest number of teams involved, divided geographically by contiguous regions. We decided to investigate Series B because it provides a homogeneous sample of as many sports clubs as possible.

We adopted a qualitative methodology (Bell *et al.*, 2018; Hair *et al.*, 2019) to analyze the data. This is a particularly suitable method for studying phenomena about which little is known and in a context where there is still a lack of understanding of the fundamental

factors (Denzin and Lincoln, 2005). The research was carried out through a survey, a structured questionnaire sent via e-mail to 64 sporting directors of the clubs participating in the 2021–2022 championship. The data were collected through structured questionnaires. To reach a meaningful vision of the context in which executives, athletes and professionals of sports clubs live, play and interact, and to interpret their construction of the technical-sports project, the questionnaire was structured into four sections with a total of 21 questions.

Thematic analysis – a method that searches for themes or patterns in qualitative data – was used for the data analysis. Thematic analysis is very flexible, as it can summarize the key characteristics of a large body of data and can also generate unexpected insights into the topic. Furthermore, thematic analysis is very useful for highlighting similarities and differences in the data set (Braun and Clarke, 2006).

This paper is organized as follows. After the introduction, Section 2 presents the literature review and research question. Section 3 outlines the methodological approach. Section 4 reports on the findings and discusses the insights arising from the research. Section 5 identifies the implications, draws conclusions and proposes a future research agenda.

2. Literature review and research question

2.1 Innovation in Industry 4.0

Technological innovation is the greatest source of competitive advantage and is essential for the success of an organization and for its survival (Del Giudice *et al.*, 2010; Egbu, 2004): it is a guide for competitive behavior. In organizations, the implementation of evolutionary processes is mainly based on technological progress and managerial innovation, knowledge and best practice (Chesbrough, 2006).

According to Kim *et al.* (2012), various authors have provided classifications of innovation in digital content services, such as Freeman and Hagedoorn (1995), Jenkins (2001) and Nordmann (2004), who link the divergence and convergence of existing services into new creative services under the concept of incremental innovation. This allows the application of a single existing service to other content or platforms to create new services and also facilitates recombinative innovation, i.e. the merging of existing services to produce new ones.

In Industry 4.0, companies acquire a stable and lasting competitive advantage through implementation of enabling technologies because this process produces an enhancement of strategic knowledge related to intellectual capital (Trequattrini *et al.*, 2021). In particular, efficiency and productivity rise through the use of analysis and algorithms, and at the same time, the marginal costs of production and sharing of several products and services are almost entirely eliminated (Rifkin, 2014).

For success, the abilities of machines and humans need to be combined through proper management because, in some activities, machines perform better than humans; in others, humans are better than machines (Brynjolfsson and McAfee, 2014).

The creation of Big Data can be regarded as a process that makes it possible to obtain knowledge from large quantities of data (Harlow, 2018). Furthermore, digital platforms are powered by Big Data: today, the trend is the commercial exploitation of such data acquired from customers (Srnicek, 2017). According to Constantinides *et al.* (2018), digital platforms are a set of digital resources (also services and content) that enable value-creating interactions between external producers and consumers. They simplify the link between supply and demand (Baldwin and Clark, 2000; Gawer, 2014). Platform business models make a firm more efficient. Human intelligence, which is used to link demand and offerings, can be replaced by artificial intelligence and/or collective intelligence. Hence, feedback can be collected in real time and limited internal productive capacity can be replaced with

the illimited external capacity of a community of platforms (Bagnoli *et al.*, 2018). Platforms facilitate mix-and-match innovation (Garud and Kumaraswamy, 1995). In the next paragraphs, we seek to analyze how innovation, digital platforms in particular, can function as useful tools in learning and the transfer of knowledge.

2.2 Formal and informal learning in the knowledge transfer process

According to a knowledge-based view, knowledge is the most strategic and significant resource of a firm and the source of competitive advantage (Alavi and Leidner, 2001). Knowledge as "information with meaning that exists within the individual [...] occurs either as a result of experience, or is generated through thinking or reasoning; otherwise, it remains mere data or information" (Beesley and Chalip, 2011).

Organizations can be seen as social communities specialized in the efficient creation and transfer of knowledge (Kogut and Zander, 1992). "Organizations learn only through individuals who learn. Individual learning does not guarantee organizational learning. But without it no organizational learning occurs" (Senge, 1990, p. 139). Therefore, the knowledge transfer capability of organizations is a critical determinant of sustainable competitive advantage (Grant, 1996). Advanced organizations manage knowledge, which means that they strategically build, transform, organize, deploy, use and transfer knowledge (Wiig, 1993).

Argote and Ingram (2000) stated that "knowledge transfer in organizations is the process through which one unit (e.g. group, department, or division) is affected by the experience of another". Knowledge transfer has also been deeply analyzed in the context of groups or teams. Interestingly, the extent of the knowledge and skills of members belonging to a group change after training that supports knowledge transfer activities (Argote and Fahrenkopf, 2016; Lapré and Van Wassenhove, 2001; Salas *et al.*, 2012). Knowledge is transferred between actors (individuals and organizations) in several ways (Nakauchi *et al.*, 2017): through social practices (Von Krogh, 2012) and via both tacit and explicit means (Nonaka and Takeuchi, 1995).

The workplace is a site of knowledge learning, which in turn facilitates the development of the organization through enhanced production, effectiveness and innovation and which creates individuals with enhanced knowledge skills and learning capacities (Boud and Garrick, 1999). The literature asserts that the level of workplace learning is directly linked to the efficacy of both formal and informal learning (Poell, 2013).

Formal workplace learning is characterized by a prescribed learning framework or a designated trainer, whereas informal learning occurs in situations that are not usually intended for learning or where learning is not the primary goal of the activity (Eraut, 2000). Informal learning requires a blending of individual differences, e.g. intellectual curiosity, self-directedness and self-efficacy (Beckett and Hager, 2002). Informal learning also includes contacting individuals possessing higher levels of insight or competence on a topic (Werner and Dickson, 2018).

Formal and informal learning are complementary and contribute to the efficient workplace learning of individuals (Poell, 2013). Previous research studies have focused on formal learning opportunities among employees, such as face-to-face learning events with a designated teacher or trainer (Eraut, 2000). Although informal learning is considered a more effective learning style (Boud and Garrick, 1999; Garrick, 1998), only a few scholars address this mode of learning in the workplace (Manuti *et al.*, 2015; Marsick and Volpe, 1999). Moreover, informal workplace learning is positively correlated with flexibility, employability, adaptability to context, rapid transfer to practice and resolution of work-related problems through regular review of work practices and performance (Dale and Bell, 1999).

A growing number of social networks and other Web 2.0 and Web 3.0 services can be used for flexible and informal learning, making it possible to share infinite multimedia learning resources in future Industry 4.0 learning (Tvenge and Martinsen, 2018). In particular, in informal workplace learning, digital platforms can support knowledge transfer; indeed, their use is increasing. They support the placement of key knowledge and value creation activities close to demand and they create new ways of building knowledge and relationships (Nambisan *et al.*, 2019).

Digital platforms produce a competitive advantage through interconnections among partners, sharing of knowledge and risk and exercise of collective power. Such platforms also allow increased numbers of different players to cooperate easily; indeed, they allow for an openness and flexibility that transcends the barriers and boundaries of distance, geography and industry (Lusch and Nambisan, 2015).

The search range is increased, the participation cost for each partner is decreased and tacit knowledge is more effectively codified by network models of intermediation and by platform-based knowledge transfer intermediaries enabled by new digital innovations, thus allowing for knowledge transactions on the go (Cahoy, 2020; Dushnitsky and Klueter, 2017; Lee, 2020).

2.3 Learning and knowledge transfer in the sports sector

Knowledge has an important role in sport. Learning and knowledge transfer in cognitive-intensive environments, such as sports clubs (Trequattrini *et al.*, 2018), has been the subject of several research studies (Jones *et al.*, 2003; Potrac and Jones, 2009; Potrac *et al.*, 2007). Sports clubs can be considered communities of practice – vehicles for knowledge creation and sharing in intensive and dispersed settings (Werner and Dickson, 2018). There is a broad consensus that most of the knowledge transfer within sports clubs companies takes place outside formal sporting contexts (Nelson and Cushion, 2006; Stoszkowski and Collins, 2014).

In the sports context, formal learning is identified as the knowledge that managers acquire from sporting contexts, such as training, matches and official events. Informal learning is the use that executives make of the information available on digital platforms and in the fiduciary relationships that management has with the players' brokers; by far, it is the most frequently used and the most important in the general learning process of executives. The above point is supported by previous studies that demonstrate the significance of informal learning (Boud and Garrick, 1999; Cushion and Nelson, 2013; Garrick, 1998; Mallett *et al.*, 2009).

Artificial intelligence and statistical modeling in sports have become increasingly prominent, with analytic strategies and techniques being quickly developed, depending on the type of sport, the data and the goals of the analysis (Brefeld and Zimmermann, 2017; Chmait and Westerbeek, 2021). O'Brien and O'Keeffe (2022) assert that sporting environments continually change, which means that training protocols and development systems will not remain valid indefinitely. Moreover, the capability of contemporary computer systems to analyze and mimic human-cognitive functions creates unprecedented possibilities for developing digital platforms.

Indeed, an increasing number of clubs use data science tools to make increasingly informed decisions during matches and in the transfer market. According to Trequattrini *et al.* (2021), digital platforms can support knowledge transfer in sport in many ways; indeed, some platforms can replace DVDs and VHSs, making it possible to examine a player without needing to send a scout to follow him. Other platforms emphasize the relationship between football and Big Data. Still, others allow athletes to develop a real network of intermediaries and companies in the professional or amateur world: coaches, health professionals, journalists and marketing staff.

Concerning the role of knowledge brokers, the literature asserts that knowledge brokers explore, learn and connect a large number of existing problems, creating innovative solutions through the combination of existing ideas (Phipps and Morton, 2013). In the contribution of Phipps and Morton (2013), the main characteristics of "knowledge brokers" have been outlined:

- ability to understand the needs of knowledge recipients;
- ability to communicate effectively;
- ability to identify and acquire knowledge;
- ability to create and manage knowledge networks; and
- results orientation.

Knowledge brokers work collaboratively with key stakeholders to facilitate the transfer and exchange of information in a given context (Bornbaum *et al.*, 2015). Sports management learning is enhanced by knowledge brokers, a role typically assumed by those who are called "sports agents", who act as representatives of the athletes and who usually advise the executives of sports clubs about the recruitment of certain players rather than others (Willem *et al.*, 2019). However, few researchers have investigated the role of these knowledge brokers (Girginov *et al.*, 2015) and there is a lack of understanding about the extent to which these brokers are able to enhance learning in sports communities and ensure a process for the creation and sharing of knowledge.

Effective management of high-performance athletes and teams to build competitive advantage is receiving increased practitioner interest (Sotiriadou and Shilbury, 2013). However, research is relatively sparse and further studies would help in better explaining the complexity of managing athletes and the decision-making process required to identify and recruit athletes for high-performance teams.

Instead, when it comes to learning and knowledge sharing, sports management scholars focus primarily on the role of the coach and on the knowledge transfer skills between players (Cassidy *et al.*, 2006; Coté and Gilbert, 2009; Kellett, 1999; Sotiriadou and Shilbury, 2013; Werner and Dickson, 2018). The form of knowledge transfer typically analyzed relates to peer learning (Sotiriadou and Shilbury, 2013; Werner and Dickson, 2018). Werner and Dickson (2018) argue that this form of learning constitutes an important way of transferring knowledge within the sporting context, promoting the development of motor, cognitive and social skills and encouraging sharing of knowledge and experience among the individuals involved. Furthermore, the authors argue that clubs should develop an organizational culture that supports knowledge sharing, where their players are encouraged to learn from each other and actively seek to share their knowledge. The learning culture positively impacts productivity and economic growth, leading to the greater motivation of people to learn and develop their skills, increasing their productivity and contributing to the economic development of sports clubs. Previous research has also focused on formal learning opportunities among employees, such as face-to-face learning events with a designated teacher or trainer (Eraut, 2000). Although informal learning is considered a more effective learning style (Boud and Garrick, 1999; Garrick, 1998), only a few scholars investigate informal learning in the workplace (Manuti *et al.*, 2015).

To fill the gap in the literature and to highlight the importance of informal learning, our research aims to investigate whether players' brokers or digital platforms are more useful in the managerial decision-making process of identifying and recruiting athletes for high-performance teams.

Moreover, in the sporting context, studies of the learning and knowledge transfer between sports managers and their brokers have mainly focused on the football industry, with other

sports receiving limited attention. With this in mind, our research seeks to fill this gap by analyzing the basketball sector.

Taking the aims of this paper together with the analysis of the previous literature, we derived the following research question:

RQ1. Which tool is the most effective in management's decision-making process when creating high-performance teams: information transfer from knowledge brokers or information transfer from digital platforms?

3. Methodology

This section describes the research method. First, we describe the research context in the following subsection. Second, we describe the research method, and finally, we describe the sample, the data collection and the analysis.

Our contribution develops the theoretical framework initially proposed by Sotiriadou *et al.* (2008) and reframed by Werner and Dickson (2018). Scholars argue that peer learning and formal and informal learning are important ways of acquiring knowledge within the sporting context, capable of promoting the development of motor, cognitive and social skills (Phipps and Morton, 2013; Sotiriadou and Shilbury, 2013; Werner and Dickson, 2018). The learning model applied to the proposed sports sector is based on four main dimensions:

1. social;
2. cognitive;
3. metacognitive; and
4. emotional (Werner and Dickson, 2018).

This type of learning is based on collaboration and interaction between individuals and can occur in different environments, such as during training, competition or playing on the field (Werner and Dickson, 2018). However, the research proposed by the authors mainly focused on knowledge transfer between players and between players and coaches. Therefore, starting from the theoretical framework considered (Sotiriadou and Shilbury, 2013; Werner and Dickson, 2018), concerning the roles previously analyzed in the literature, our developed framework focuses on the transfer of knowledge between managers of sports clubs and athletes' brokers and between managers and digital platforms. The framework has, thus, been extended to understand how knowledge brokers transfer knowledge and support managers in their decisions.

We adopted a qualitative methodology (Bell *et al.*, 2018; Hair *et al.*, 2019) to analyze the data. This method is particularly suitable for studying phenomena about which little is known in a context where there is still a lack of understanding of the fundamental factors (Denzin and Lincoln, 2005).

The research context is the basketball sector, one of the most important sports in Italy. The research was carried out through a survey with a structured questionnaire sent via e-mail to 64 managers heading the sports side of basketball clubs. The data were collected through structured interviews.

3.1 Research context

Since 2006, the European Union has recognized the significant contribution of sport to the continental economy, not only as an engine of growth and employment but also for its positive effects on citizens' health, territorial development, tourism and social integration. According to a report edited by Ifis Bank (2022), the sport system is a sector of value for the

Italian economy and society, thanks to the contribution of the four subsectors that make it up:

1. manufacturers of sports clothing, equipment and vehicles: 10,000 companies generate over €17bn in revenues;
2. professional and amateur sports clubs and facilities management: 74,000 companies have an annual turnover of €46bn;
3. sports media: expenditure linked to events and sports betting generated almost €23bn in one reference year; and
4. social value: €10bn is generated each year as an indirect economic effect, contributing 0.56% of the Italian GDP.

The last available edition of the Italian Basketball Federation's Social Responsibility Report 2018–2020 discloses that sports associations and clubs produce annual revenues of over €40bn in an average year, 10% of which is from professional clubs alone. In this context, the importance of sports disciplines is affirmed, and in Italy, we find basketball as the third most practiced sport with 346,144 participants registered in various capacities with the Italian Basketball Federation, including athletes, children, coaches, physical trainers, managers, referees, field officials and youth instructors.

Furthermore, from an economic point of view, the impact of basketball is decisive for the Italian economy, with a global turnover of the entire top division of A1 equaling €77m, a figure which positions it as the professional sport with the second-highest number of investments by companies operating in Italy.

The Italian Basketball Federation recognizes the A1, A2 and B series championships as categories of national interest. Series B represents the championship with the largest number of teams involved, divided geographically by contiguous regions. We decided to investigate Series B because it provides a homogeneous sample of as many sports clubs as possible. Having examined a national championship, the information collected still reflects indications from top professionals in the sector.

The Italian Series B basketball championship is the third level of the reference sport in the national context. Sixty-four teams compete in the tournament, divided into four groups of 16 teams. The season runs from September to June, with most games played on Saturdays and Sundays. Series B represents the competition with the largest number of clubs participating in a single championship in the panorama of Italian basketball, as well as being the competition with the largest number of athletes and managers.

3.2 Sample and data collection

The sample consisted of the 64 sporting directors of the clubs participating in the 2021–2022 championship, most of them widely known throughout Italy. The construction of the reference universe and the identification of the relevant electronic addresses (e-mail) commenced with the list surveyed provided by the Lega Nazionale Pallacanestro (www.legapallacanestro.com) (first accessed in September 2022), an association that manages the A2 and B series national championships and was updated with the help of the website of the organization that coordinates the activities of the affiliated companies.

3.3 Data collection

The data were collected through questionnaires presented in the form of structured written interviews. This form was chosen because it was considered most suitable for conducting the research and because ease of answering allowed for greater involvement of the participants. In any case, this method helps in comparing cases, structures or events

(Bryman, 2008) and facilitates comprehensive interviews within a limited time frame (Patton, 2002).

To seek a meaningful vision of the context in which executives, athletes and professionals of sports clubs live, play, interact and interpret their construction of the technical-sports project, the questionnaire was structured into four sections (Table 1). The total number of questions administered was 21.

The questionnaires were produced in Italian. The survey was carried out in 2022 using the Google Forms Webmail application, and the results were subsequently reprocessed using a spreadsheet. The questions were structured to ensure that the participants' important thoughts and perspectives were appropriately captured (Patton, 2002). All respondents were informed that their names and clubs would be removed from the transcript. This was done to encourage respondents to provide information about sensitive issues, such as knowledge sharing between agents and companies and the possible role of digital platforms in this brokerage relationship, which might otherwise have been withheld (Marshall and Rossman, 2011). From the 64 questionnaires sent, a total of 34 responses were received. The research participation rate was, therefore, determined as 53.13%.

3.4 Data analysis

Thematic analysis was used for the data analysis. This is a method that searches for themes or patterns in qualitative data. Thematic analysis is very flexible, as it can summarize the key characteristics of a large body of data and can also generate unexpected insights into the topic. Moreover, thematic analysis is also very useful for highlighting similarities and differences in the data set (Braun and Clarke, 2006). Due to the lack of preexisting research into knowledge sharing between leaders, agents and platforms available to clubs, an inductive approach was adopted. We followed the step-by-step thematic analysis guide from Braun and Clarke (2006). The guide has six phases:

1. familiarization with the data by reading and rereading the transcripts;
2. initial coding;
3. research of the themes;
4. review of the themes to create a thematic map of the analysis;
5. defining and naming the topics under analysis; and
6. production of the report. In an iterative process, the codes and general themes were revisited, double-checked and discussed by the research group to ensure the reliability and consistency of the classification procedure (Bryman and Bell, 2007).

4. Findings

The following section presents the main results according to the issues that emerged from the data analysis (Table 1). In the following part of the research, participants' responses are included to support the findings and claims.

Table 1 Themes from data analysis

No.	*Theme*
1	Essential characteristics for the construction of a technical sports project
2	The use of digital tools applied to sport
3	Useful information contained in the digital platforms
4	Benefits and drawbacks deriving from the use of digital platforms

Source: Authors' own elaboration

4.1 Essential characteristics of the construction of a technical sports project

In the first part of the questionnaire, we wanted to investigate the procedural process that sports directors follow to structure a new sports project. By technical sports project, we mean the programing work aimed at achieving a certain sporting result. Specifically, as regard its implementation, it is important to take into account some important variables, such as:

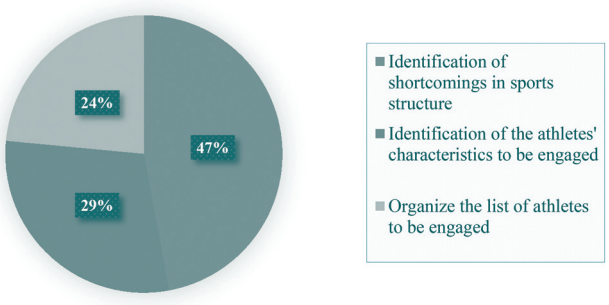
- identification and concrete delimitation of the specific problem or problems of the technical sports structure;
- exhaustive research and collection and analysis of what is deemed necessary information;
- goal construction, i.e. understanding the goal to be achieved with the project in question;
- research that can be undertaken and choice of possible alternatives;
- approach to the actions, tasks and resources, both technically and economically, which can be used for the implementation;
- start-up, i.e. execution of the selected proposal or alternative;
- periodic evaluation of the work done and the progress achieved; and
- voluntary disclosure in making the results obtained from the project known to the participants.

Forty-seven per cent of the interviewees chose the identification of shortcomings in sports structure as the first training step, 29% prioritized identifying the characteristics of the athletes to be engaged, whereas about 24% considered deciding the list of athletes to be engaged was the primary task (Figure 1).

According to most of the interviewees, the role of sports agents was considered relevant and essential, as only 17.6% of respondents gave an answer of less than 3 on a scale of 1–5. This finding is confirmed when one considers that managers themselves have digital platforms as a means of acquiring knowledge, which implies technology is not capable of decreasing the influence of sports agents in the selection of athletes (Figure 2).

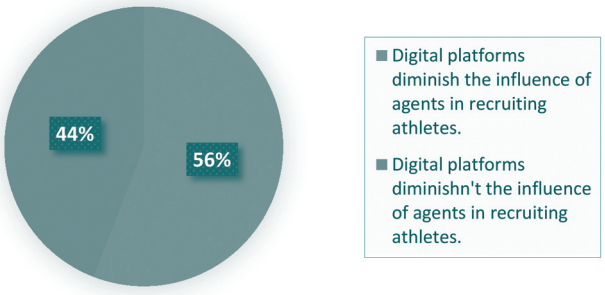
Managers also consider the trust-based relationship established with a specific agent essential for scouting for and choosing athletes. In fact, only 17.6% gave an answer with a

Figure 1 Division of the answers regarding the procedural steps in the structuring of a new sports project



Source: Authors' own elaboration

Figure 2 Division of the answers regarding the consideration of digital platforms as a means of disseminating knowledge capable of decreasing the influence of agents in the recruiting of athletes



Source: Authors' own elaboration

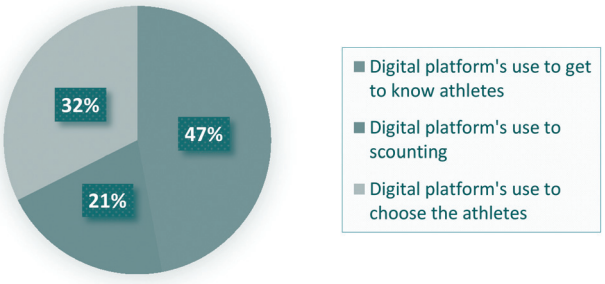
value of less than 3 on a scale of 1–5. Furthermore, if they did not have a good relationship with a particular agent, managers identified the coach as the person capable of increasing the quality of the brokerage relationship. In fact, 73.6% of the interviewees gave an answer with a value greater than 3 on a scale of 1–5. By contrast, sports directors tend to use the current platform containing statistical and technical information on athletes participating in the Italian Series B championship to get to know the athletes, rather than for the purpose of scouting and selection (Figure 3).

4.2 Use of digital tools applied to sport

With regard to the use of digital platforms, the first objective was to investigate the level of satisfaction with the LNP platform, which contains statistical and technical information on the athletes participating in the Italian Series B championship and which is freely accessible to clubs. In response, 61.8% of sports directors seem satisfied with the information available on the platform (Figure 4).

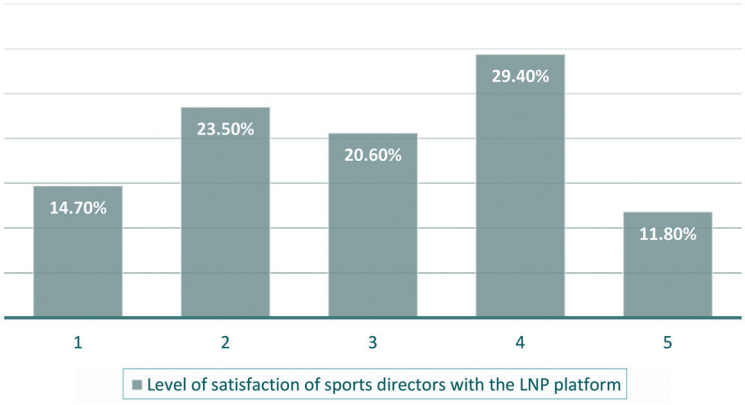
However, despite the fact that digital tools are found to be a great means of support for the management of sports clubs, 50% of respondents believe that such platforms are not able

Figure 3 Division of the answers regarding the use of the LNP digital platform containing the information of the athletes participating in the championship



Source: Authors' own elaboration

Figure 4 Level of satisfaction of sports directors with the LNP platform



Source: Authors' own elaboration

to fully replace the brokerage relationship between agent and club in the acquisition of the athletes.

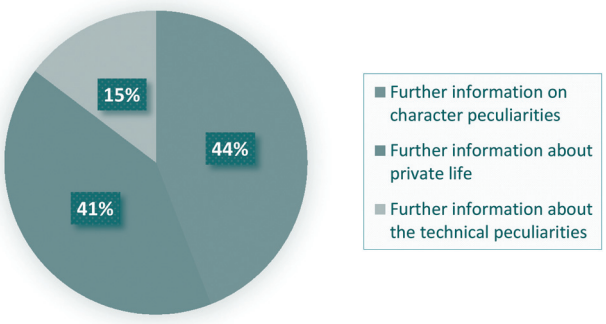
Furthermore, 94.1% of respondents would find useful access shared with all clubs to a platform containing more information than that which is already available. The platform should be usable not only by the technical staff but also by the club's management.

4.3 Useful information contained in the digital platforms

Although there is already much technical information about athletes available on the market, the sports directors of the clubs believe that this information is in some ways insufficient. In fact, 44.1% of the interviewees believe that it would be useful if the platforms contained additional information about character traits, 41.2% wanted news on players' private lives and 14.7% sought additional information of a technical nature (Figure 5).

Beyond mere technical information, further data that sports directors would consider useful for their choice of athletes included the performance and physical characteristics of athletes

Figure 5 Division of the answers regarding additional information that digital platforms should contain



Source: Authors' own elaboration

currently not available in any database. Nevertheless, for 58.8% of the interviewees, if this information was available to the technical staff and the management of the clubs, it would in no way be preferable to the manager's relationship of trust with the athletes' agent.

Furthermore, 100% of the interviewees would consider it appropriate for the league to offer clubs a platform that allowed them to view, in real-time, the possible acquisition of athletes by competing clubs to understand which athletes are actually available on the market.

4.4 Benefits and drawbacks of the use of digital platforms

Despite the information already available on the athletes and any data that could be integrated, 55.9% of the interviewees would in any case accord greater reliability to the knowledge provided by the athletes' agents. Consequently, 67.6% of respondents believe that in no case can the figure of the agent be fully replaced by a digital platform, albeit complete in all its forms in the data provided to sport managers. However, 88.3% of respondents tend not to consider certain players if the latter are assisted by an agent with whom the management of the company does not have a good brokerage trust relationship.

The interviewees believe that additional information contained in the platforms could enhance the brokerage relationship (Figure 6).

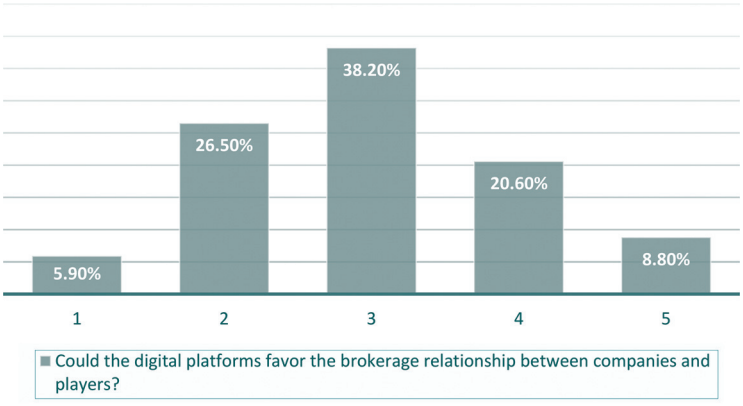
Finally, for 76.5% of sports directors, the use of platforms by management and technical staff does not in any way affect the relationship of the company with the athletes and the companies' stakeholders.

5. Discussion

Our results demonstrate how sports directors see the athletes' agents as the main stakeholders in the construction of a technical sports project. This is in addition to learning off the pitch from interactions with media and fans; from understanding other opinions, backgrounds and cultures; from pressure management; and from the demonstration of leadership skills, a positive attitude and tolerance.

In this research, the sporting aspect is the main focus of the analysis, i.e. all the preliminary working methodologies for the choice of athletes, the relationship with the stakeholders, the

Figure 6 Division of answers on the issue of whether the additional information contained in the platforms could favor the intermediation relationship between sports managers and the athletes' agents



Source: Authors' own elaboration

determination of the club's sporting objectives and how these preliminary practices are then transformed into output. In the sporting panorama of basketball and also of other sports, there is no single recognized framework that managers can use to achieve a specific sporting result within clubs. Therefore, through the research carried out, an attempt was made to build a prototypical technical project that can allow managers to recognize the work to be carried out and the correct information to select and know (input), to achieve a certain result (output), with reference to a predetermined sporting goal.

Research in business science has demonstrated a growing interest in peer learning and formal and informal learning in the professional football sector (Phipps and Morton, 2013). Scholars have argued that these forms of learning should not be seen as an exclusive choice among the three options but rather as a combination of methodologies (Werner and Dickson, 2018). Regarding the research topic, most of the papers focused on analyzing the figures of athletes and coaches (Phipps and Morton, 2013; Sotiriadou and Shilbury, 2013; Werner and Dickson, 2018). Our research explored formal learning (Cushion and Nelson, 2013; Eraut, 2000) and informal learning (Beckett and Hager, 2002; Mallett *et al.*, 2009; Rynne *et al.*, 2017) by the clubs' managers. Considering also the role of digital platforms and agents as knowledge dissemination tools, we have broadened the theoretical framework of Phipps and Morton (2013) by extending it to understand the role of these means as knowledge brokers. As stated in the literature section, formal learning is identified as the knowledge that managers acquire from sports contexts such as training, matches and official events. Informal learning, by far the most frequently used and the most important in the general learning process of executives, is identified as the use that executives make of the information available on digital platforms and from the fiduciary relationships they have with players' agents. The above point is supported by previous studies that demonstrate the significance of informal learning (Boud and Garrick, 1999; Cushion and Nelson, 2013; Garrick, 1998; Mallett *et al.*, 2009). However, in line with previous research (Mallett *et al.*, 2009; Poell, 2013), both informal and formal learning are important and contribute to the success of sports projects undertaken by clubs.

Overall, the results of our study are in line with previous studies showing that improved skills and competencies, as well as greater social and communication skills, are key benefits of the proper development of an adequate sports project (Olaussen *et al.*, 2016).

According to the results obtained, a preferred learning and knowledge transfer tool cannot be identified for managers' decision-making processes. In fact, the interviews largely verified that both digital platforms and athletes' agents are knowledge sources with advantages and disadvantages for sports directors. The platforms provide a better knowledge of the sports context in which the club operates, of the athletes, and of all the information of a technical, physical and personal nature that would otherwise not be available in a complete way. At the same time, however, they provide a multitude of data that can create information overload and stall the decision-making process.

The role of brokers is in no way replaceable, and in some cases, the fiduciary relationship established with sports directors is preferred over the reliability of the information contained in the platforms. Furthermore, broker knowledge and skills can be useful in managing and filtering the information contained in the platform to mitigate information overload and make the decision-making process more efficient.

The digital platforms have been affirmed as a tool that can favor and facilitate the brokerage relationship, not only as a means capable of replacing or modifying the activity of agents but also for helping agents understand which clubs still have need of athletes and for helping sports directors understand which athletes are still available on the market.

The sporting directors, therefore, uniformly agreed that the clubs participating in the Italian Series B basketball championship should make use of such tools to facilitate the process of

learning and knowledge transfer between the various protagonists of the sports scene under study.

Clubs should, therefore, develop an organizational culture that supports knowledge sharing, in which their leaders are encouraged to learn from one other and to transfer knowledge through learning from both digital platforms and players' agents, seeking later to actively share that knowledge (Ipe, 2003). This would help establish a "learning culture" within clubs and management, which could in turn improve the capacity (Senge, 1990) and performance (Frontiera, 2010) of the entire league.

The sharing of knowledge through these means could, therefore, generate new ideas and concepts applied to the context in which people operate (Davenport and Prusak, 2000), as well as lead to the "generation of new knowledge which in turn allows individuals working in a new context to identify new opportunities" (Beesley and Chalip, 2011) related to existing processes. Our results have shown how the sports directors of the clubs constantly try to obtain new information, thanks to the means at their disposal, and subsequently, thanks to the new knowledge acquired, are able to determine what is right for the environment in which they operate.

Thus, it can be concluded that it is not possible to identify a preferred learning and knowledge transfer broker among sports executives in the sporting context under review. In fact, it is only thanks to the interaction and selection of the information found through the primary means of acquiring informal learning, i.e. digital platforms and athletes' agents that managers are able to define the most suitable strategies for the sector and the club in which they operate and to set up an efficient decision-making process.

6. Conclusions, implications and future agenda

This paper presents a qualitative approach aimed at analyzing how platforms and the players' agents can be useful tools in the learning and knowledge transfer process. We intended to answer *RQ1*.

We, therefore, decided to provide information about the essential information-gathering processes of sports managers, with a view to suggesting a methodology for a new technical sports project. According to researchers (Sotiriadou and Shilbury, 2013; Werner and Dickson, 2018), peer learning and formal and informal learning can promote the development of motor, cognitive and social skills, encourage the sharing of knowledge and experiences, stimulate reflection on learning and increase the motivation of the individuals involved. We addressed a gap in the sports literature, as previous research has focused mainly on the figures of athletes and coaches as sources of knowledge. Based on the findings, a theoretical model was developed that can help inform and guide future research. The model demonstrates that the learning of managers cannot take place through a single tool but uses all the means available to them, that is, both digital platforms and players' agents. Ultimately, it can be said that better learning and knowledge transfer lead to a more efficient decision-making process.

This process could be explored in more detail in future studies. The proposed model represents a first step in better representing and understanding these complex processes within the analyzed context. Further studies on the learning of sports managers and on the sharing of knowledge are needed to improve this understanding and to verify the model.

Although the qualitative results of this study may not be broadly generalized (Bryman, 2008), they can be applied to other situations and can be used to inform future research (Patton, 2002). In this context, it is also important to note that this study focused on basketball and that the results may differ when applied to other sports.

In general, it would be valuable to conduct further research on the learning and knowledge sharing of sports directors to broaden our understanding and to provide additional tips and recommendations for athletes, coaches and clubs. Future studies should also consider the

benefit of using a sample with several factors, such as age and career length, to investigate this issue.

Our research has outlined a wide variety of valuable concepts on knowledge transfer. The topic merits future investigation in the management context. For example, further studies on sports directors' communities of practice and how they might best be cultivated by athletes and club coaches would be useful.

Overall, our results clearly demonstrate the valuable opportunities for executives, coaches, managers and clubs to strategically manage learning and knowledge sharing. Knowledge is probably an organization's most important asset and is an essential source of lasting competitive advantage (Nonaka, 1991). Improving and managing knowledge-sharing strategies would help increase the knowledge, not only of the sports directors but also of the entire club, thus improving the absolute quality of the game within the Italian basketball divisions.

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