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Introductory remarks

FISU and the organizing committee had the difficult task at the end of November 2021 to announce the cancellation of the Lucerne 2021 Winter Universiade due to the current pandemic and the new strict measures introduced in Switzerland.

At the same time, the FISU World Conference was also cancelled, which was a difficult decision for both parties.

A multi-faceted program with international and interdisciplinary contributions would have highlighted the challenges and opportunities of sport in modern society. The following keynotes on the three main topics dual career, women in top-class sports and digitalization:

Prof. Dr. Paul Wylleman (Vrije Universiteit Brussel): Dual Career – Optimizing the dual career: The need for a holistic and contextual perspective

Dr. Jessica Piasecki (Nottingham Trent University): An Olympic journey: The perspective of a female athlete and academic

Prof. Dr. Tim Ströbel (University of Bayreuth): Digital Transformation in sport: Current issues, opportunities, and challenges

With this Book of Abstracts, we would like to present the numerous contributions of international scientists from different disciplines, which unfortunately cannot now be presented and discussed during the conference. Many researchers responded to our call and submitted abstracts on the topics of digitalization, women in elite sports, and dual careers. These contributions were selected by members of the conference's Scientific Advisory Board and experts from FISU.
1 Welcome

Dear representative of the academic world

Dear members of the FISU Family

It is my pleasure, on behalf of FISU and its Education Committee to welcome you in this FISU World Conference on Innovation – Education – Sport. As most of you know, those last months have been hit by uncertainty and difficulties but it is with great pleasure that all of us within the FISU Education Committee are looking forward to positive and constructive discussions on key themes.

We all agree, I believe, that the theme and the sub-themes chosen by our colleagues from the Organising Committee are all very current and that our exchanges will reflect the state of our modern societies and the debates that shape it. Whether you will be joining us as a keynote speaker, a spectator or presenting a paper, you will be helping us, as individual, but also as stakeholders of the University Sports Movement to understand better, and hopefully to improve the way we tackle some of the most important challenges we all currently face.

In addition to the gratitude, we, at FISU, want to express to the universities and the individuals involved in setting up this event for their work on the logistical aspects – you can imagine that it was not easy to plan an event like this one, without certitudes on the conditions – I would also like to thank our partners for choosing to discuss during an academic conference like this one, topics that will surely have a positive impact on the operations of FISU (and not only).

The importance of dual career for an organisation like FISU in charge of University Sport is of course not to be demonstrated but being able to base the work we do on academic research is something we aim at doing more, and this event will be one more step in this direction.

Needless to say, that we also support all initiatives highlighting the role of women in top class sport, and we are looking forward to hearing the experience of athletes and the work done by scholars on how to promote and value the performances of women at the level they deserve.

This FISU World Conference will also be the opportunity to discuss digitalisation, a topic that has been imposed to most of us in the past months. I am certain that through the presentations we will hear and the discussions we will have, we will be able to find exciting perspective on the digitalisation of sport and how through modern tools we can make sport more accessible, more inclusive, and more sustainable for all those who practice or want to practice it.

Allow me to conclude by expressing FISU’s warmest gratitude to the organising committee and its scientific committee, its staff and all those who have made this event possible. I wish you all fruitful exchanges during our formal moments but also to celebrate this FISU World Conference in all the informal debates it will, I hope, generate.

Dr Verena Burk
FISU Senior Executive Committee Member
Chair of the FISU Education Committee
Dear Researchers, Athletes and Officials

On behalf of the Scientific Committee, we would like to welcome all participants to the FISU World Conference on Innovation, Education and Sport, focussing on the main topic of “Challenges and Opportunities in Sport in modern society”. The topic will be presented and discussed in the three sub-themes: “Dual career”, “Digitalization” and “Women in Top-class sport” in various formats, such as plenary sessions, parallel sessions, poster sessions and round tables. As an international platform, the conference should offer an opportunity to exchange ideas relating to these topics across different sports and sport settings in a cross-national discourse.

The megatrend digitalization does not stop at sport itself. Digitalization is changing the way people consume sport, how sport is reported, and how sport is practiced. The changes that are visible due to digitalization can be positive or negative in nature. Improved technologies, new types of aids and the multiplication of possibilities require a new understanding of how various aspects of digitalization in sport are handled.

Thanks to new knowledge in training theory, a stronger focus on regeneration and nutrition, and careful career planning, careers in sport are becoming increasingly longer. Nevertheless, most competitive athletes will have a second career in professional life after their sports career. It is all the more important that athletes prepare for the time afterwards during their sports career. Educational institutions are offering more and more opportunities to combine top-class sport and training in order to be optimally prepared for the time after a sports career. This not only creates advantages for the athletes but also for society as a whole.

The role of women in top-class sport is also changing. Top sporting events for women are gaining in popularity and are conveying a differentiated image of top sport. Under increasing cost pressure, mass media is discovering this sector (of sport). Increased television coverage is creating new markets and better marketing opportunities. Young women are being inspired by new role models to become professional athletes. Similar to other business sectors, women are still underrepresented in leadership positions in sports organizations. Women in top-class sport can positively influence social change and the way women are viewed in sports.

This book of abstracts contains contributions from experts and researchers from various disciplines and 30 countries. These contributions provide different perspectives on the theoretical background, empirical investigations, and current developments in the world of sports that relate to the topics we have focused on.

The Scientific Committee of the FISU World Conference

Prof. Dr. Dr. Jürgen Kühnis (Schwyz University of Teacher Education)
Dr. Hannah Mormann (University of Lucerne)
Dr. Dominik Schwizer (University of Applied Sciences of the Grisons)
Dr. Andreas Christoph Weber (Swiss Federal Institute of Sport Magglingen)
Prof. Dr. Stephan Zopfi (University of Teacher Education Lucerne)
2 Key Topics

The objective of the conference was to create a networking platform for scientists who present and promote the research on scientific innovations and enhance the sustainable development of sports. It should be in particular an opportunity for the young generation of scientists and scholars from different disciplines to discuss new ideas or to arrange projects/cooperative efforts in the area of sports.

Under the main topic Challenges and Opportunities in Sport in modern society researchers and experts from different areas were invited for submissions of abstracts on the three subthemes: Dual Career / Digitalization / Women in High Performance Sport. The following questions were not exhaustive:

Institutional Requirements for Dual Careers in High Performance Sport
- How are dual career concepts implemented? What are challenges from different disciplinary perspectives (e.g., sociology, economics, management, politics, law)?
- What are the results of empirical research on the employability of (former) top athletes? How do top athletes in different countries master the transition to professional life?
- How can career transitions be planned proactively and how do different stakeholders coordinate and cooperate (e.g., schools, universities, employers)? What role do other institutional factors, such as family and the teaching profession, play?

Fields of Digitalization in Popular and Professional Sport
- How can digitalization serve as an «enabler» for future education services? How can universities (of applied sciences) adapt technological systems in order to develop their programs?
- How is sport consumed today and tomorrow? What does this mean for the service provider involved in the sports industry? What are potential challenges and opportunities for the different stakeholder (e.g., sports governing bodies, clubs, sponsors, etc.)
- How are digital technologies used in active sports and education in sport management? What opportunities and risks does this entail for sport and athletes? (e.g., augmented reality & virtual reality, image processing, optical recording of movements and digital exploitation)

Achievements and Challenges for Women in High Performance Sport
- What special challenges do women face in high performance sport? For female athletes, trainers/coaches and sport organizations?
- What can we learn from the historical development in sport? Does sport have a model function, is sport a reflection of society or is sport a latecomer when it comes to equality?
- What marketing potential is there in women’s team sports? How do club and association developments contribute to professionalization in women’s sport?
3 Abstracts

3.1 Book Presentation

*Dr. Marianne Meier (University of Bern)*

**Sporting Role Models and Homosexuality: Challenges and Potential of Deviancy**

*There are internationally well-known lesbian sportswomen such as Martina Navratilova or Megan Rapinoe. However, in order to be attainable and relevant for defined target groups, local and regional 'deviant' sporting role models need to gain visibility. The book "Role models and Prejudice" (2020) features lesbian elite sportswomen in Switzerland. By interviewing 28 top athletes of all ages, the five authors do also cover a sport historic dimension, thus pushing boundaries of acceptable female behaviour in sport as well as society.*

Tears, hugs and kisses after sweet victories or bitter defeats... – emotions are the fuel of any sport event’s media coverage. Nevertheless, such public emotions in sport are usually reserved for heterosexual athletes and their lovers. The ‘power alliance’ between sport, media, and economy represents an ideal ground for masculine hegemony and heteronormativity. Deviant top athletes, such as lesbian sportswomen, are ‘non-marketable’, and therefore invisible without a right to exist within the structures of sport and sport politics; at least not in public (Schaaf & Nieand 2011). In 2018 in Switzerland, successful lesbian footballers – such as Lara Dickenmann or Ramona Bachmann – were publicly sharing their private lives, featured by major media channels. This is a new phenomenon. Other homo- and bisexual elite athletes had or still have to remain ‘in the closet’ out of the fear to lose sponsorship contracts or to be discriminated against.

The relationship between the ‘world of high-performance sport’ and female athletes is reflected by the patriarchal contradiction between ‘being a woman’ versus ‘being a sportswoman’. There is a historic link between sport and masculinity. The concept of “gendered heroism” (Hargreaves 2000) emphasises that sporting heroes are closely related to bravery, courage, or muscles. These associations stereotypically correspond with values attributed to masculinity, thus contrasting with ideals of femininity such as caring or motherliness. This contradiction entails the lack of female sporting role models; especially top sportswomen who do not fulfil stereotypical gender perceptions. Most elite-level sport domains display heterosexual values and norms of masculinity. Therefore, lesbian sportswomen are perceived as individuals who disturb this male hegemony. They are therefore neglected as potential sporting role models or only accepted if they hide or make up for this ‘deviant’ aspect. Silence, denial, apology, and promotion of a heterosexist image are some of the homophobic manifestations categorized by Griffin (2002). With regard to the impact of potential role models on others, Lockwood & Kunda (1997) identified “attainability” and “relevance” as two determinants. The apparent non-existence, which is rather an invisibility of lesbian sportswomen, inhibits the public availability of ‘deviant’ female sporting role models.

International key documents such as the Olympic Charter or the FIFA Statutes clearly guarantee non-discrimination with regard to gender and sexual orientation since 2016. The implementation of these regulations must consider the social, political, economic, and legal environment that may contribute to discrimination or favouritism with regard to the power structure in elite sport in the name of human dignity.
3.2 Abstracts Parallel Sessions

The speakers and their contributions in the parallel sessions on the three key topics of digitization, dual careers and women in Top-class sport are presented in alphabetical order.

Abele et al.

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Selfie as Motivator in Fitness Classes for 20–30 Y/O Visitors

Nowadays, with technological development in mobile phones their cameras are more sophisticated than they have ever been, everyone is able to take a professional photo by themselves. As a consequence, selfies have become so popular worldwide and used over such a range of ages, that they can even be grouped by different types. We noticed that one of these groups is gym selfies, which are created and posted by quite a few gym visitors. The aim of this study is to find out if the use of selfies can be a motivation for doing fitness classes. Study included 20–30 y/o students, who lives in dormitories (n = 20) of which 12 were women and 8 were men - one group, who were approbating a thematic set of selfie tasks (TSST) over a 2-month period. The Study has shown that there are significant changes in students' motivation for doing fitness and being active after applying TSST. After approbation of thematic set of selfie tasks, it can be concluded that the set has had a positive effect on students-participants' motivation to visit fitness clubs, according to all criteria the indicators have improve and the hypothesis has been confirmed: Attitude towards and attendance of fitness classes improved.

Keywords. Fitness, selfie, students, motivation

Ageleuova

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Gender equality in sport: historical review

For a long time, sports remained a predominantly "male sphere" of activity, and there was no place for women. The first women's sports begin to develop only towards the end of the 19th century.

In the women's sports of the 19th century, stigma and stereotypes about women prevail. Women did not have equal rights with men in both economic, political life and sports.

The 20s of the 20th century is a decisive decade when women's sports begin to grow seriously. In this period, after the First World War, there are many socio-economic and cultural changes. And in this context, women began to demand more rights, and some of the old patriarchal restrictions began to be questioned.
This was the first period of the wave of feminism. It should be noted here such women athletes who have made a huge contribution to the development of women's sports, such as the Gertrude Ederle, as well as Mildred Ella Didrikson.

After World War II, cult of domesticity spreads to the USA and Europe. There is a new anti-gender turn in society. According to the morality of the time, a woman should not be on a par with men to build their career. 60-70s - the second wave of the feminist movement, which was reflected in women's sports.

A significant step forward was the adoption of Title IX in the USA, which aims to prohibit discrimination in education. In accordance with this law, girls should have the same opportunities in sports as men.

An important achievement was the gender revolution in tennis, when many outstanding female tennis players began demanding equal bonuses with men, resulting in equal prize pools for men and women. This marked the beginning of the movement for equality in pay in the sport. The recognition of gender equality in sports has led to the inclusion of women in "men's" sports - weightlifting, boxing, wrestling, and their participation in the Olympic Games.

Today, there are still problems of gender equality in wages, bonuses, participation in advertising, in equal funding of sports federations, where women's sports are financed on a residual basis.

Keywords: Feminism, Title IX, anti-gender turn, gender inequality, women's sports

Anderski et al.
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The Role of Digital Engagement Platforms for Athlete Branding

Aim
The development of digital engagement platforms (e.g., social media) has empowered athletes to develop, maintain, and expand their personal brands (Liu & Suh, 2017). They can interact directly with various actors such as fans, sponsors, media or clubs. Drawing on recent literature on integrative branding, however, athletes cannot build and control their brand autonomously. Brand meaning is always co-created by various actors (Merz, He, & Vargo, 2009). This study examines how the meaning of athlete brands is co-created on different digital engagement platforms. Therefore, this research extends existing literature on athlete brands (Arai, Ko, & Kaplanidou, 2013) and contributes to general brand management literature.
Theoretical Background
Building on current research findings from athlete branding on social media (Na, Kunkel & Doyle, 2020), this study exclusively focuses on different digital engagement platforms of a female winter sports athlete who is active in a seasonal niche sport. With respect to the multi-actor perspective, this study identifies relevant actors and platforms for the co-creation of the athlete’s brand meaning. In addition, the study outlines how these actors integrate resources and interact on the respective digital engagement platforms to co-create brand meaning.

Research Design and Methodology
The study builds on a qualitative case study design applying mixed methods. A netnographic approach was applied to a professional female athlete brand from Germany through observing and examining activities on digital platforms within the world cup season 2020/2021. Parallel, semi-structured interviews were conducted with the athlete and various actors related to her. In addition, industry experts were questioned to enrich our comprehension of athlete branding. This leads us to combine the results of the netnography with the external perspective of the relevant actors from the interviews as well as the internal view of the athlete.

Conclusion
This study provides a unique and important contribution to existing research on human branding by taking a multi-actor perspective. Furthermore, we discuss this perspective on integrative branding on different digital engagement platforms for the first time in the specific context of athlete brands. The study also outlines opportunities and risks for athlete branding on digital engagement platforms.

Keywords: Digitalization, Athlete Branding, Brand Meaning Co-Creation, Digital Engagement Platforms, Brand Management

Bastianon
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The Italian Approach to Dual Career of University Student-Athletes: Data Collected and Ongoing Research
To date in Italy many Universities have started a programme on dual career. Unfortunately, the lack of a common direction has forced each University to tackle the problem of dual career in its own way. Consequently, the resulting framework is very fragmented: some Universities tend to focus on financial aspects of dual career, whereas other Universities tend to focus on aspects such as adapted curriculum, e-learning, supplementary tutoring, academic flexibility (exams and lessons) and so on. Also, the notion of student-athlete as beneficiary of a dual-career program is very critical as it seems to vary from University to University.

Thanks to a research project financed by CUSI it was possible to collect data from 48 Universities involved in dual career out of a total of 87 Universities (State and private). The main critical issues emerged concern:
(i) the difficulty in collecting data.
(ii) the lack of a common definition of student-athletes.
(iii) the lack of a network system.
(iv) the lack of homogeneity in support services offered to student-athletes.

The next step of the research project will focus on the collection of data necessary to evaluate the practical implementation of dual career programs at university level. In particular, the aim of the second part of the research is to collect data on the following aspects:

(i) number of student-athletes involved in dual career programmes.
(ii) academic performance of student-athletes.
(iii) interviews with student-athletes and their families to get information on pros and cons of actual dual career programs.

The last step of the research project will focus on the diffusion of collected data among different stakeholders (policy sector, financial sector, sports sector, educational sector, medical sector) to involve all of them in the drafting of National guidelines on dual career in conformity with EU dual career guidelines.

Keywords: Italy - Dual career – University – Student-athletes – National guidelines

Bosshard

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How are Olympic centres networked – Digital transformation as a solution?

Introduction

Competitive advantage in high performance sports can be developed by means of targeted net-working of leading companies, universities and federations (Kempf et al. 2021). The authors assume that national sport systems will become more efficient and effective by networking the system digitally (i.e., digital networking). In sports, very little empirical findings exist on net-working a system digitally. The Swiss Federal Institute of Sport Magglingen (SFISM) developed an international bench learning on Olympic Centres and the corresponding sport systems. Therefore, the “Effect Model OCS (Olympic Centre Switzerland)” was developed with experts of the Swiss elite sport system (Kempf, Bosshard & Weber, 2020). As part of the bench learning, semi-structured interviews with experts of France, Germany and Austria on the operating and strategic level of an Olympic Training Centre were conducted. The three countries selected for in depth analysis, show similarities to the Swiss sport system. The aim of the present study is to analyse digital networking of the national elite sport systems chosen for the bench learning by focusing on Olympic Training Centres. This contributes to knowledge development on digital transformation of sport systems.
Method

Analysis of the nine interviews was conducted by a summarizing qualitative content analysis according to Mayring (2015). The “Effect Model OCS” defined the units of analysis. In a first step, the interview protocols were paraphrased. The paraphrases were then reduced by clustering of similar segments. The last step included the construction of new categories through integration.

Results and Discussion

190 paraphrases resulted through the first step of analysis. These were reduced to 49 relevant paraphrases, which were finally constructed to six new categories. The new categories show the relevant topics of the analysed sport systems and Olympic centres:

- Knowledge management and transfer as a key factor (17 paraphrases)
- Top-down steering of digital networking (15 paraphrases)
- Digital communication as a key factor (13 paraphrases)
- Labelling system and mapping of competencies (9 paraphrases)
- Business intelligence as a key factor (8 paraphrases)
- Decentral centralization leads to digitalization (8 paraphrases)

Conclusion

Networking through digital technologies is considered as relevant by all the analysed countries. The main discussion point seems to be knowledge management and transfer. This supports (Kempf et al., 2021) that a sport system is more effective when knowledge is managed properly. Steering the networking of the sport system seems to be more effective applying a top-down approach. The results show that competencies, such as decision making, strategies etc. must be defined according to the national sport system. Possibly the National Olympic Committee or the Sport Ministry should develop a platform to empower the relevant stakeholders of the sport system. Further investigation including data management, digital communication and knowledge management within the field of platform economics will help develop knowledge on the digital transformation of sport systems.

Keywords: Elite Sport, Sport Clusters, Network, Digital Transformation, Knowledge Management

Bouquet et al.

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Dual Career programs in Italian universities. Filling the gap between reality and perception

Purpose – Italian universities are increasingly developing Dual Career programs. Despite their commitment, the results achieved, and opportunities offered are not often known by high-performance athletes who may have possibly a prejudice of a limited activity of universities in this area.
This paper has two complementary objectives. The first purpose of the research is to analyse how Italian universities include Dual Career (DC) programs within their offer of services to students. In particular, through a questionnaire regarding all Italian Universities involved in the DC program, we identified the targets of these programs, the services and benefits granted to athlete-students, the level of participation. The second aim of the research is to use the collected data to fill the perception gap by building the first online service that allows athletes to find and compare DC programs and select the programs which best suits their needs and vocation.

Methodology: online survey distributed among the Rector’s delegates for sport of Italian Universities.

Findings: a common strategy for supporting Athlete-students does not emerge at a national level, as there is no unique way to manage the DC in Italian Universities. In particular, we identified 26 Universities with a DC, of which 20 have activated an Office that takes care of the program. The average number of students involved is 15, but there are considerable fluctuations between universities. The maintenance of sporting results is the main requirement that allows students to stay within the program. The flexibility of the exams days is the benefit that student-athletes appreciate most.

Other results: we created the first Italian structured database of DC programs in Italy. Each program is described based on admission criteria, exclusion criteria, benefits, services, and so on. Moreover, a section inside the web of UNISPORT ITALIA (https://www.unisport-italia.it/dual-career/) is now the first authoritative reference point for athletes, sports federations and clubs to identify the DC program that best fits the needs of their athletes.

Keywords: dual career - athlete-student - university sport - social sustainability - education management

Italy

Capranica et al.
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Online education for parental support of dual career athletes: The EMPATIA platform

Based on evidence and eminence knowledge of needs of parents/guardians (P/G), the outcome of the EU-funded Collaborative Partnership “Education Model for Parents of Athletes in Academics” (EMPATIA, 590437–EPP-1–2017–1-SI–SPO–SCP) was an online multilingual (e.g., English, French, Italian, Portuguese, and Slovenian) educational programme to empower P/G of dual career (DC) athletes. Methods. A total of 14 scientific contributions (Tessitore et al., 2021), and views of 452 P/Gs and 32 dual career experts from 11 European countries (Gjaka et al., 2019, Varga et al., submitted) informed the four main DC areas (e.g., Why, Who, How, and What, respectively) of the EMPATIA educational platform. Then, 82 P/G (F=47%, M=53%; educational level: high school=31%, university=69%) of student-athletes competing in individual (n=72%) and (team=28%) sports validated the educational content by means of a 37-item questionnaire (1–5 likert scale). Results Overall, the first impression of the programme was extremely positive (100%), as well as its visual structure (91%) and used language (94%). Also, the relevance of the content of the four modules was considered positive (range: 95–99%) as well as its usefulness for the parental support in the sport (range: 81–95%) and academic (range: 81–93%) environments, to help the athlete’s self-management (range: 84–94%) and to manage career transitions (range: 76–89%). Conclusion. In synthesising the opinions, experience and needs of P/Gs of DC athletes the present framework provided sound theoretical underpinnings to inform the development of an online educational programme for empowering parenting DC athletes (https://edu.empatiasport.eu/eng/), as well as be a foundation for future Pan-European DC research on how these statements interact with each other, in different European contexts.

Keywords: dual career, parenting, student-athletes, European framework, education
Vulnerability of professional athletes on social media. An analysis on 2021 UEFA Champions League Final.

Thierry Henry, former Arsenal Football Club star player, has stirred up the social media world when he announced on March 26th, 2021, on his now-deleted Twitter account, that he was quitting all social media, as "The sheer volume of racism, bullying and resulting in mental torture to individuals is too toxic to ignore." Since then, we have witnessed English Premier League clubs engaging in awareness-raising campaigns and a 72-hour social media boycott to protest online abuse and more specifically online racism. New insecurities targeting the athletes’ identities are growing from the rise of social media and online interactions, as they are now part of the social environment of most athletes. This study examines the comments posted by users on the Instagram’s accounts of four professional football players immediately after their team (Manchester City) lost final 2021 UEFA Champions League final. Three criteria were used to select the sample: 1) position on the field, 2) ethnic category, and 3) number of followers on Instagram accounts.

Using the lens of disruption of athletic identity (Hickey & Roderick, 2017), we are pointing out that cyberviolence can deeply affect athletes and potentially spark identity dilemmas. We used Kavanagh & Jones’ typology of virtual maltreatment (2014) to isolate the comments collected into four categories: virtual emotional maltreatment, virtual discriminatory maltreatment, virtual physical maltreatment, and virtual sexual maltreatment. The two categories with the highest proportions of comments were virtual emotional and discriminatory maltreatments, including significant racist online abuse. Moreover, athletes who have greater media exposure or a higher number of followers tend to be more targeted. From a scientific point of view, this methodology is innovative, with real-time data collection. Socially, our study shows that online abuse towards high-profile athletes is a significant social problem, provoking instant damage and altering their sense of self. In this context, sports institutions and social media companies must implement policies of prevention, risk reduction and control to better protect athletes.

Keywords: Vulnerability, Identity, Social Media, Soccer, Cyberviolence.

Crossan

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Elevating Sport Performance Using a Character Development Digital App

Sport is a multi-dimensional field that encompasses numerous domains that can be transformed by digital applications including competitive sports, recreation, fitness, and entertainment (Rathonyi, Bácsné Bába, Müller, & Rathonyi–Odor, 2018). According to Xiao and colleagues (2017) who conducted a review of sports digitalization, using technology to enhance sport performance is intensifying, but also expands to other areas such as organizing and managing
sports teams and their stakeholders, interpreting sports information, inventing new strategical approaches, and even inventing new sports such as e-Sports.

Our research involved the development of a software app focused on character development in elite athletes, specifically university athletes, with the ultimate purpose to elevate performance and well-being. The character framework used in the app consists of 11 dimensions (i.e., transcendence, drive, collaboration, humanity, humility, integrity, temperance, justice, accountability, courage, and judgment in the middle) and 62 elements, all of which need to work together to support judgment and decision-making. Each behaviour is presented as a virtuous behaviour but may manifest as a vice if deficient or unsupported by the other character behaviours (Seijts, Gandz, Crossan, & Reno, 2015).

The software app assesses the learner’s character, which then delivers a tailored learning program based on the character assessment. The learner is encouraged to select a partner within the app because research reveals a partner supports active dialogue to enhance learning and accountability (Vainio, Korhonen, Kenttä, Järvinen, & Kaipainen, 2014). Daily and weekly reflections are encouraged to support self-awareness and accountability, and weekly partner assessments are encouraged to support self-awareness and behaviour awareness in others. The data collected through the app can be aggregated and correlated with other sports-related data. This could be particularly promising as there has been a tendency in sports to over-emphasize some dimensions of character such as courage and drive, while under-emphasizing others such as humility and humanity, leading to the unintended consequence that what could operate as a virtue, is operating like a vice. For example, an individual may become reckless, or their thinking may become tunnel-vision without the awareness of how they need the contribution of others to support their judgment and performance.

The learning principles and approach embedded in this app could be extended to other digital applications seeking to enhance key performance metrics. These principles include a) an efficient use of organizational resources, b) a customized and tailored learning experience for an unlimited number of individuals, c) real-time feedback and learning, d) science-based and cutting-edge research content e) a shared learning experience, and f) the creation of a digital community with a shared purpose. The data collected through an app creates significant opportunity to use it to further develop content and support the learning experience. The use of an app, however, warrants critical attention to privacy and security risks. An app that encourages the learner to be reflective and perhaps vulnerable needs to ensure the information stored is protected. A cross-disciplinary collaborative effort is required to support a safe and optimal learning experience.

Keywords: Digital Application, Leadership Character Development, Performance, Real-time learning and feedback, Collaborative  

Descheemaeker et al.

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Gender (in)equality in elite sport: an international analysis of the gender earnings gap among elite athletes and coaches

This research aims to develop more knowledge in the gender earnings differences in elite sports. We compare the total income data but also the four income categories: direct payments, reimbursements, sponsorships and prize money. The research questions are twofold: (1) What is the gender earnings gap between male and female athletes and coaches? (2) Is the gender gap related to the country, athlete's performance level and the type of sport performed?

Since the 1970s, gender pay differences have been studied extensively. Wicker et al. (2021) showed that a significant earnings gap still exists among elite athletes in Germany. There is a gap in knowledge concerning the earning difference according to country, sport and athlete's level. This study aims to fill this gap.

Our results showed no significant gender difference in the total income of all athletes (n=3142). We found, however, significant differences in the direct payments (higher for men, +34%) and the reimbursements (higher for women, +40%).

When including the level of athletes, the gender difference in direct payments exists in both top 16 and lower-level athletes. When comparing the 38 Olympic sports, there is an inequality in total income in five sports: athletics, equestrian sports, ice hockey, shooting and triathlon. Except for triathlon, in the four other sports, men gained a significantly higher income than women.

When comparing the 13 countries, a gender pay gap in total income only existed in Estonia: there is a significantly higher total income for men.

The coaches survey showed that 84% of our coaches were men, and only 16% were female. The mean gross annual income for women (28621 international dollars PPP) was only 48% of the men's mean income (60104 PPP). Due to the unequal sample size this was not statistically significant.

The results show there remains a gender inequality in direct payments in elite sports. Our results lead to a call to action to achieve equity, especially in the mentioned countries and sports.

Keywords: Elite athletes, elite coaches, gender equity, gender inequality, earnings gap

1 Purchasing Power Parity (PPP) is a term to compare countries' currencies. It uses the prices of specific goods to compare the absolute purchasing power of the currencies.
Dual Career Motivation of Sri Lankan Student Athletes for Proactive Career Transition Planning

High performing student athletes of Sri Lanka more often compromise one of their illustrious careers due to the absence of suitable dual career programmes. Therefore, to implement programmes that enable proactive career transition planning, it is first necessary to understand the level of motivation towards dual careers. This study describes the motivation for dual careers among undergraduates enrolled in state universities of Sri Lanka who have participated in national and/or international level sporting competitions, using the SAMSAQ-EU tool that includes 39-items. The sample included two hundred and sixty-six (266) undergraduate student-athletes from the universities of Colombo and Peradeniya (Males 63% i.e. n=169). The mean ages by gender were 23+1 (females), and 23+2 (males). The majority of the sample comprised of students from the faculties of science (28%), management (18%) and medicine (11%).

The results of the factor analyses suggested that the three-factor structure of Academic Motivation (AM), Student Athletic Motivation (SAM) and Career Athletic Motivation (CAM) was appropriate for the context of Sri Lanka. CAM and SAM after removing two items and AM after removing three items had a good reliability (Cronbach's alpha >0.7). The overall reliabilities of AM, SAM and CAM were 0.850, 0.773 and 0.755 respectively. The Rasch analysis showed that all infit and outfit statistics were within the 0.5-1.5 range and productive for measurement. The descriptive statistics indicated AM to be highest overall and relatively higher among females. This was followed by SAM and CAM respectively, which were higher among males. Despite the conventional belief that student athletes were not academically oriented, the positive correlations among AM and SAM suggested that they were highly motivated for both academic and athletic goals as undergraduates. Correlation among SAM and CAM was only significant among males, suggesting the impact of gender norms for athletic career aspirations of women. Overall, there appears to be a conducive level motivation among student-athletes for the implementation of formal dual career programmes in the selected universities. Additionally, it is recommended that the impact of gender be studied further in when planning career transition programmes.

Keywords: dual career, motivation, undergraduates, SAMSAQ-EU, Sri Lanka
Fahrner et al.

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Relevance of University Dual Career Support Services – Student-Athletes’ Perspectives

Numerous elite athletes pursue the challenging twin path of both sport and education to prepare professional perspectives for their career after elite sport. To support student-athletes, universities all over the world provide various services. The study aims to explore the perceived relevance of university dual career support services from the student-athletes’ perspective. Revealing any discrepancies in this regard within the population of student-athletes could provide insights for designing and managing tailor-made athlete support.

The study setting is based on an online survey of 1,055 student-athletes, representing 62 countries and 29 different sports, all of which participated in the 2019 Winter and Summer Universiades (World University Games) in Krasnoyarsk/Russia and Naples/Italy. Next to a set of relevant questions, the respondents had to assess the relevance of support services with regard to their dual career. Based on an exploratory and confirmatory factor analysis, the university dual career support services were grouped into categories and Likert scale responses were recoded into binary variables. Implementing probit models, the respondents’ perceptions were regressed with their sporting and academic background by controlling for socio-demographic factors.

A three-factor model was identified to distinguish dual career support services in the context of higher education, namely “flexibility”, “counselling and study support”, and “scholarships and sport support”. Moreover, several statistically significant associations between socio-demographic, academic, and sporting career related factors and the perceived relevance of the different university support services were revealed. In particular, there are differences between gender and academic levels of the student-athletes. Elite sport commitment also seems to be a significant factor in terms of university service perception, which also differs between student-athletes of Olympic and non-Olympic sports and between summer and winter sports.

By empirically substantiating the perceived relevance of university dual career services from a student-athletes’ perspective, the study complements the elite sport-related dual career literature and provides practical implications for those (higher education) institutions responsible for the setup, further development and management of student-athletes’ dual careers.

Keywords: Elite Sport; Higher Education; University Sport; Dual Career, Probit Model

Germany
Gielens et al.

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Gender equity in sport: an investigation of public perceptions toward female Olympians as role models

Increasingly, (inter)national sport associations, like the International Olympic Committee (IOC) and FIFA, stress the importance of gender equality in elite sports. Although there is a growing consensus amongst academics that well-known elite athletes are viewed as athlete role models (ARMs) (Mutter & Pawłowski, 2014); society traditionally tends to gravitate more toward male athletes than female athletes.

Vescio and colleagues (2004), propose the concept of ‘Gendered heroism’ in sports which might result in fewer female athletes being recognized as role models. More recently, Meier (2015) confirmed this concept as he concluded that people tend to have more requirements for female athletes than male athletes. If a female athlete does not meet these pre-set requirements, she will either not be recognized or lose her credibility as ARM. In order to pursue gender equity in elite sports, it is valuable to understand how people perceive female elite athletes, since insights on female ARM’s remain limited in Europe (Funahashi, De Bosscher and Mano, 2015). Therefore, in order to address the gap in literature, the following research questions are posed:

RQ1: To what extent are Belgian citizens a fan of female Olympians?
RQ2: To what extent are Belgian Female Olympians regarded as personal role models?
RQ3: Which characteristics are attributed to popular Belgian female Olympians?
RQ4: Which exemplary behaviour or actions should female Olympians display in the eyes of the Belgian public?

In August 2021, 35% of the surveyed Belgians indicate being fan of a Belgian Olympic athlete. 67% of Belgians with a favourite elite athlete chose a female athlete. Almost 1 in 2 Belgians who chose a female athlete as their number one announces that this athlete is also a role model for them. Belgians who chose a female Olympian as their favourite athlete have significantly more often expectations about the behaviour of the athlete then those who chose a male athlete as their favourite. The Belgian population expects female athletes to be actively involved in inspiring the younger generation. We can conclude that, in line with the literature, female athletes are more often expected to give back to society than male athletes.

Keywords: Athlete role model, Female role model, Elite athletes, Gender equity, Inspirational

Belgium
Social media and the Olympics: a chance for improving gender equality?

This study explores whether social media coverage by the National Olympic Committees (NOC) during the 2020 Tokyo Olympic Games strengthen or weaken the International Olympic Committee’s (IOC) gender equality ambitions. As the media play an important role in creation of impressions that people cherish during and after the Olympics, the IOC has since the 1990s increased its responsibility for fair media portrayal of athletes and competitions by revising its own media production. In the past decade this most notably concern social media. Not only has it become an inseparable part of global sports consumption, but it is also seen as a tool for changing the situation of biased and stereotypical portrayal of female athletes in traditional media, even though male and female athletes became nearly equal in participation. Studies of media production and equality-informed decisions are however rare in sport. Drawing upon a quantitative analysis of social media accounts of three NOCs (Norway, Czech Republic, and Switzerland) and qualitative in-depth interviews with key informants – NOCs’ and EOCs’ social media personnel – the study therefore explored decisions and processes that influenced gender portrayal during the 2020 Tokyo Olympics. Findings of the study showed that individuals have a significant influence on gender portrayal in their respective communication channels. In contrast to traditional media, they were aware of the frames they apply, and they did so regarding the Olympic values. Consequently, they set a fairer agenda for both male and female athletes and contributed to realizing the gender equality mission of the IOC.

Keywords: Social Media, gender equality, Olympics, NOC

Digitalization of dual career: How can athletes from different sports make optimal dual career decisions

Over the past two years, TASS have focused on building upon dual career research by digitalising dual career messaging to support athletes with decision making in sport and education/vocation. TASS have developed two comprehensive athlete facing dual career guides for English Women’s Footballers and British Sailors. A third guide is in progress, looking at dual career trends and opportunities within English Boxing. Development of these guides were commissioned by the respective sports governing bodies.

Interviews and focus groups were conducted with 105 individuals as part of the women’s football research, with 54 individuals participating in the sailing work. Within both projects we spoke to
athletes, parents, coaches, performance managers, support staff, and education staff. Information generated throughout the interview process was then translated into practical digitalised tools for athletes and stakeholders to access to support optimal dual career decision making.

The accessible, online dual career guides are targeted at athletes aged U14 through to senior level, as well as parents, individuals within the sporting context, and education staff. The aim of the guides is to highlight all opportunities available within education/vocation and sport, while pinpointing key support services at each time-point. The guides also outline some of the key challenges of different dual career pathways, highlighting examples of best practice to overcome these challenges. The digitalisation of the guides allows athletes and stakeholders to gain information quickly, from one central location, as opposed to sourcing information from many different places.

Alongside development of the digitalised dual career guides, the findings were used to develop key recommendations for each governing body. Across the women's football and sailing work, numerous recommendations were developed relating to the dissemination of information to athletes, parents, and stakeholders. Where key information is not easily accessible by athletes and their support team, this research identified the potential for ill-informed decisions to be made, leading to negative impact on athletes sporting trajectories, educational attainment, and general wellbeing. Digitalising information, in this context regarding dual career, is a key enabler in developing cohorts of athletes who are equipped to make optimal decisions in both sport and education/vocation.

Keywords: Digitalization, dual career, women's football, sailing, career transitions

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Impact of the internet and social media on an athlete's performance and persons involved in the sports industry amid lockdown because of the COVID-19 pandemic

Introduction
The worldwide outbreak of corona virus pandemic disease (COVID-19) has led to turbulent challenges for several industries including sports industry and the people involved with it. In the mid of March 2020, several countries around the world determined localized lockdown to national level lockdown. People were in quarantine in their own homes, educational institutes and playgrounds around the globe were shutdown. Several giant sports events stopped immediately and even Olympics and Paralympics 2020 were postponed to 2021. That's why according to Department of Economic and Social Affairs UN (DESA) Governments should collaborate with healthcare, sports and civil society organizations to support physical activities at home. In order
to maintain social distancing also athletes around the world were affected with this worldwide lockdown. Many elite athletes around the world have adapted rapidly by creating online content related to physical exercises and coaching other people and junior athletes about their sports and games. Educational institutions have started online teaching resources for students to study at home. And business people started online trade and purchase. National Olympic Committees (NOCs) started appealing to National sports federations to encourage the players and other stakeholders to access online platforms for adaptable but steady daily routine including physical exercises at home on a daily basis. FIFA and World Health Organization (WHO) together has started campaign to reduce the effects of covid-19 as well as other major sports organizations have expressed their spirit to reduce the spread of Covid-19 virus with the help of internet and social media.

Methodology
The mediating approach of data collection was questionnaires and thereafter collected data was set into standard statistical techniques. We had distributed 125 questionnaires and received 90 complete questionnaires. Thereafter, 90 complete questionnaires were included for data analysis, with a response rate of 72%. Most of the scales were computed using 5-point Likert scales, varies from “strongly disagree-1 to strongly agree-5”.

Results
After applying the standard statistical analysis, results revealed that maximum percentage (40%) of respondents were from the 26–30 Years age group. Moreover, 84% of the respondents were from Asia and 70% of the totals were athletes. Most of the respondents (50%) were strongly disappointed with the current situation of the closure of sports events/grounds. Also 58% agreed that the internet and social media are helping athletes to maintain their performance amid lockdown because of the COVID-19 pandemic. Additionally, the maximum number of the respondents used “YouTube” for getting help essentially to maintain and improve their sports skills/fitness/business. While most of the respondents used “Zoom” as an online platform for exercises/coaching/meeting.

Conclusion
Overall, the respondents gave a promising opinion about the role of the internet and social media amid lockdown because of the COVID-19 pandemic. Big percentage of athletes was routinely encircled by seniors remotely with the help of Internet and social media to maintain their performance. Also, many athletes showed disappointment because of lockdown and closure of sports facilities. The outcomes of our research have important suggestions for governments, policy makers, coaches and sports scientists.

Keywords: Sports, Athlete, Social Media, Covid-19, Internet

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Germany

Dual Career
Challenging exclusion in elite spaces: examining ‘dual careers’ at the intersection of sport and education

Since the 1990s, interest around athletes combining sport with education or work, known as a “dual career” (DC), has steadily increased. Internationally, this pathway now receives considerable public funding. To date, few studies consider if and how DC systems operate inclusively. Wider consideration of this issue is vital as both elite sport and education have been criticised for perpetuating social inequalities. As such, the principal research question explored was whether and how diversity and inclusion are considered in DC literature. A systematic mapping review (using Perryman, 2016) was conducted to assess the prevalence of diversity and inclusion themes within DC literature. Diversity and inclusion keywords were joined with connectors to find studies with each theme, via Google Scholar and EBSCOhost.

A key initial finding was the lack of direct consideration within DC literature of diversity, inclusion, disability, race, ethnicity, Black or Asian athletes, sexuality, or poverty. No “dual career” papers examined these issues directly (a few exceptions can be found in “student athlete” studies). It was evident that DC research has been predominantly shaped by studies of white samples from a Eurocentric perspective, and there is homogeneity in terms of paradigms, populations, and methods. Little mention is made of culture, both in terms of shaping the athletes as people or the systems they operate within. Together, these findings highlight the absence of demographically focused or indeed intersectional research in the DC space.

Due to the lack of research around diversity and inclusion within DC spaces, it is challenging to identify who is currently included or excluded, and how. More nuanced and explicit reporting and analysis is required, and researchers need to seek more diverse samples and systems to work with and within. One notable observation is that systems researched often feature narrow definitional criteria (e.g., in terms of qualifying career pathways), a feature that is likely to narrow participation. As such, we recommend that future policy and commissioning work considers how these systems can develop and expand so that more athletes are able to access dual careers and the wider developmental and supportive experiences encapsulated within them.

Keywords: Dual Career, Inclusion, Diversity, Exclusion

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Career building opportunities for elite women tennis players in eastern Europe looking at modern sport challenges

The popularity of Anglo-Saxon sport has undergone rapid development in recent decades, from the aristocratic entertainment of the elite upper class to leisure time activities of the middle class. At the same time, the opportunities to earn money in tennis have increased, and today it has become a billionaire business. After World War II. traditions were kept only in the former
Czechoslovakia, but from the 1980s onwards, tennis has become a popular, recognized supported Olympic sport in other former socialist countries. With a global expansion of international Federations, with the opening of borders, the biggest competitions have also become available to talented lady competitors. The study is based on empirical research aimed at exploring the success factors of female tennis players in Eastern Europe including Hungary, taking the challenges of modern sports into account. The aim of the paper is to describe the characteristics of tennis careers by examining the level of satisfaction, the amount of prize money won in matches, the amount of time, money and energy invested in the sports career, the possibility whether now she would take up the same sport as a child and the career building opportunities offered having finished a successful career. Statistical analysis confirms that the sports performance and sports culture of Eastern European female tennis players are influenced by different factors. One of the main conclusions of the paper is that lady tennis players from the former socialist countries are increasingly representing their country in the women's world rankings and major tournaments, where their results are constantly pushed the old top tennis nations into the background. Through the cash prizes won and the sponsorship contracts, several opportunities and financial security are available for them, which provide a lifetime livelihood. That's why they try to stay close to success and money, even beyond the age of 30, for years and put their eggs in one basket, building their careers for the left of their lives.

Keywords: tennis, elite women players, career, Eastern Europe

Kuokkanen et al.

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The Dual Commitment of Student Athletes in Lower Secondary Schools in Finland

The Finnish dual career (DC) policy can be described as state sponsored, including a centralized network of upper-secondary-level (ages 16–19 years) and tertiary-level (i.e., higher education) educational institutions that enable athletes to acquire a degree while competing in sports. The absence of national standards has hindered the provision of optimal developmental grounds for talented young athletes in lower secondary education. Consequently, the Finnish Olympic Committee introduced a lower secondary sports schools pilot project (LSSSPP) that started on a trial basis at 19 public lower secondary schools (ages 13–15 years) in 2017 and expanded in 2020 as a nationwide model open to all interested schools across the country. The national project aimed to find solutions that allowed student athletes opportunities for practice and a flexibility in school-related issues in Grades 7–9.

Utilizing rich qualitative data derived from individual interviews with student athletes from grade eight (n = 15), teachers (n = 4), principals (n = 2), and nonparticipant observations (n = 7) at five schools in conjunction with the LSSSPP, the present study examined how young student athletes succeed in school and sports and in combining these two. The data was analysed using
collaborative qualitative data analysis to find themes describing these student athletes. The main findings indicated that most student athletes had high ambitions and showed strong orientations in their school approaches. For some student athletes, the student and athlete roles conflicted, and they prioritized sports over educational success. A similar variation in student athletes’ sport commitments was found: from having a goal to become a professional athlete to pursuing sport as a leisure activity. Student athletes in this study were in the beginning of their DC, and they needed to be recognized as a heterogeneous group with individual pathways. In all, the findings indicated the demanding nature of the dual commitment of student athletes in lower secondary sport schools. As earlier research findings mainly come from upper secondary and university students, the study responds to the Finnish Olympic committee’s need to evaluate the LSSSPP to improve DC support functions at these specialized educational institutions.

Keywords: student athlete, dual career, sport and education, qualitative methods

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EU Guidelines on Dual Career of Athletes: Where & Why Portugal is changing?

European soft policies such as guidelines and recommendations can introduce changes in national policies and programmes. Its efficiency is higher when in combination with other tools such as collaborative and exchange programmes and specific support material. Moreover, it is even better with European directives (E Silva, P. A. (2011), ‘The Europeanisation of social policies in Portugal’, Portuguese Journal of Social Science 10: 1, pp. 3–22).

Since the publication of EU Guidelines on Dual Career of Athletes (2012), Portugal and many other member–states are changing their Public Policies to help (mainly) student-athletes combining academic and sport activities (see Report on the state of play concerning the implementation of the EU Guidelines on Dual Careers of Athletes, 2017, by Expert Group on Human Resources Development in Sport).

The Portuguese case can be an interesting study-case for Public Policies researchers. Not only because of the amount of legislation published on this issue before the publication of those recommendations, but also because of the diversity of legislation and specific programmes that took place since 2014.

With this presentation we will share with you i) The Portuguese environment impressions about the importance of the guidelines and recommendations ii) The best practices from sport and educational organizations and iii) Some questions to proceed with further research about Dual Career implementation in Portugal and in other countries.

Keywords: Dual Career, EU Guidelines, Europe, Student-Athletes, Portugal
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Athlete retirement and career transition support. A comparison between Belgium and Germany.

This paper deals with athlete retirement and career transition support. Through literature review, it finds out that since the 1980s, scholars have started to treat athlete retirement as a transition from the full- time or part-time professional sport career to the life and career after retirement. It is believed that institutional support can help athletes to better adapt to this transition, and is more effective when it starts at an early stage.

I use a comparative approach to study career transition support for elite athletes in Belgium and Germany. I chose Belgium and Germany for its similar financial capability to provide athletes with certain level of support under similar living conditions. At the same time, the two countries show different sport-related elements such as Olympic medal numbers and elite sport populations, which may lead to different career transition support strategies. In both countries the support is provided by the following institutions: national and international sport governing bodies, universities, private foundations and companies. I analyse the findings from five angles defined by Paul Wylleman and his colleagues in 1999: social relationship, self-image management, education & necessary life management skills, professional occupation skills, and retirement awareness.

Both countries show well-organized support regarding higher education and professional occupation skills, yet Germany has higher degree of systematization and digitization. The German digital platform and the coordinating role of Olympic Training Centres help to increase the accessibility and efficiency of the support provided. Companies in Germany show higher cooperate social responsibility in providing elite athletes with internship and mentorship programs. In Belgium language borders and the smaller number of elite athletes may be the reason for its lower degree of systematization. Challenges from the rising influence of social media on athletes’ self-esteem should be dealt with. There exists lack of services to help build supportive social relationships for elite athletes in both countries.

I hope to see more research on career support according to different sport disciplines and degrees of commercialization. At the same time, more research is expected in the field of digitization to boost more accessibility of provided services to the athletes.

Keywords: Dual career, athlete retirement, career transition, policy study, European sport

Switzerland
Women and elite sport: survey of top Swiss women athletes

Objectives
The Swiss Olympic “Women and Elite Sport” project supports women athletes in top-class sport in optimising their health and performance. That support focuses on specifically female topics. In Switzerland there has been until now a lack of prevalence data on how elite women athletes deal with issues such as menstrual cycle or contraception and how these issues affect their sporting activities.

Method
1092 women’s squad athletes from 107 sports were invited by e-mail to take part in the anonymous online survey. The evaluation included 408 women athletes from 92 sports, who answered at least the first block of topics specific to women in the questionnaire (menstruation). There is a relatively balanced representation of age groups.

Results
Menstrual cycle: More than 50% of women athletes state that their performance is very negative or rather negatively affected in the cycle phases “during menstruation” and “a few days before menstruation”. In contrast, the follicular phase and the phase around ovulation have a positive or no influence on performance. However, despite a more negative influence on performance, training sessions and especially competitions are rarely suspended or cancelled. 57% of the women athletes monitor their cycle. More than 30% of the women athletes have missed a period for 3 months or longer at one time or another or right now, while 29% state that they have had irregular periods in the past year.

Contraceptives: 45% of the women athletes surveyed take hormonal contraceptives. Of those, the pill is the contraceptive which is used most, followed by the hormonal coil. 84% of the women athletes cite contraception as the main reason (or one of several reasons) for the use of hormonal contraceptives. 75% of the athletes see a gynaecology professional at least every three years. 47% of the women athletes do not seek advice from any professional regarding individual gynaecological issues.

Conclusion
The menstrual cycle is perceived by the women athletes as a factor that influences training and competition. This varies depending on the cycle phase. However, this is hardly taken into consideration in training / competition at all. The women athletes have a limited knowledge about the
cycle and its effects on health and performance. Moreover, almost 50% of the athletes do not seek gynaecological advice from anyone.

Keywords: Women in top class sport, Women's health, Women’s performance, Cycle and elite sport, contraceptive and elite sport

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From Athletic Talent Development to Dual Career Development? A Case Study in a Finnish High Performance Sports Environment

Dual career (DC) has been shown to provide resources for athletes to develop a balanced life and the prerequisites to attain academic/vocational dreams while performing at the highest level in sport. The focus of the DC research has shifted from exploring individual experiences within Athletic Talent Development Environments (ATDEs) toward understanding the impact of the environment and the broader cultural context on individuals’ developmental trajectories in Dual Career Development Environments (DCDEs). To follow national and EU recommendations for socially responsible elite sport, many successful ATDEs list DC as one of their primary values and advertise themselves as DCDEs in order to attract more athletes. Drawing on the theoretical framework of Holistic Ecological Approach and Schein’s model of three levels of organisational culture, the present study aimed to evaluate whether and how a talent development environment for youth athletes in Finland has transformed from an ATDE to DCDE. The case environment consisted of a sports academy and a high school that operated alongside the academy. Semi-structured interviews were conducted with the principal of the sport high school, the head of the sport academy, two coaches, six student-athletes, and three teachers. Onsite observations, informal interviews, and collection of official documents supplemented the semi-structured interviews. Student-athletes and coaches chosen for the case study represented an endurance sport that requires a high training volume. The results indicated that the environment was characterized by an incoherent organisational culture, and the environment was identified as an ATDE rather than a DCDE.

Tensions between individual actors’ conceptions of the ‘ideal’ athlete pathway were found. Moreover, the academy had adapted to the recommendations to provide sustainable routes for athletes’ to reach the elite level by integrating a DC culture rhetorically. We suggest that for the Finnish sports environment to transform into a functioning DCDE, DC recommendations should be integrated into the environment to provide resources for student-athletes to develop a balanced life and the prerequisites to succeed in future endeavours. To achieve this, the basic assumptions of the gatekeepers, the integration of the efforts between the different domains and the education of the stakeholders are crucial.

Keywords: dual career, athlete development, organisational culture, espoused values, development environment
Oberhofer et al.

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DigitalTwin: Opportunities and challenges in the application of digital human models from sports biomechanics to strength training practice

Digital human models in sports biomechanics have opened opportunities to analyse musculoskeletal function during sports performance and give recommendations on best training design to ensure safety and efficiency of training outcomes. Yet, their successful application to strength training practice is compromised because of two key challenges: 1) Digital human models commonly represent a standardized physique that is only crudely scaled to individual musculoskeletal anatomy, and 2) wireless technologies to gather input data for biomechanical analyses outside the research setting remain poorly validated from a scientific point of view. The goal of the project ‘DigitalTwin’ is to advance the field of digital human models in sports biomechanics for science-based application to the strength training-specific setting. In ongoing research, we have demonstrated the feasibility of using skin surface data from 3D body scanning to fit a standardized digital human model to individual musculoskeletal anatomy in a computationally inexpensive manner. In parallel, we have validated the accuracy of a low-cost optical motion capture algorithm to derive barbell kinematics during the squat based on video data from an iPhone. Forthcoming research is directed towards further advancing and validating novel fitting algorithms based on 3D body surface data compared to magnetic resonance imaging as gold standard, as well as exploring advanced machine learning algorithms to process the motion data from the iPhone and Apple Watch for science-based strength training monitoring. The proposed advancement of digital human models by means of commercially available body surface scanning and mobile motion capture technologies has tremendous potential to contribute towards global efforts in sports science of the ‘Digital Human Twin’, as well as ‘Healthy Aging’ as core priority both nationally and internationally. Worldwide, there has been a growing need to effectively train muscular strength and joint stability, avoid overloading, as well as assist in the recovery from injury. The opportunity to use personalized digital human models to assess musculoskeletal anatomy and function during strength exercises may not only help physiotherapists, coaches and athletes to track training progress, but also provide an educational and motivational resource to ensure correct and continuous adherence to training guidelines.

Keywords: Sports technology; Biomechanical analysis; Musculoskeletal modelling; Mobile motion capture; Resistance training

Örencik et al.

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Dual Career

Switzerland
The differentiation of single and dual career athletes falls short: A person-oriented approach to characterize typical objective life situations of elite athletes

Research concerning athletic career development in high-performance sport typically uses demographic data, sport characteristics or pursuing a dual career (i.e., having an educational or vocational career simultaneous to the athletic career) to identify developmental processes. In defiance of these attempts, considerable heterogeneity remains within these sub-groups of the elite athlete population. In line with the person-oriented approach, the objective of this study was to develop a comprehensive typology of athletes with similar life situations by considering both sport-related as well as non-sport related aspects. To this end, data were collected about athletic performance level, weekly amount of working time (i.e., sport-related activities, education, and vocation), and financial information (i.e., gross annual income and income generated from sport). Based on a sample of 733 elite athletes, a cluster analysis was performed to divide the sample into groups of similar patterns on the aforementioned factors. Five different athlete patterns were found: (1) working dual career athletes, (2) high-income professional athletes, (3) medium-income professional athletes, (4) family-supported athletes, and (5) student dual career athletes. These findings support the dual career literature of separating dual career (Cluster 1 and Cluster 5) from single career athletes, which, in turn, should also not be regarded as a single population, but further divided (Cluster 2, Cluster 3, and Cluster 4). This typology may aid federations and practitioners within athletic career development in providing individual assistance for elite athletes.

Keywords: High-performance sport, dual careers, sport typologies, athletic career development, cluster analysis
It can be argued that the difference between what adults offer and what youth members desire is attributed to a generation gap. A generation is a group in society born within same time period, having unique characteristics and attitudes, shaped by the social context and world events occurred during formative years (Gould, 2019; Parker et al., 2012). A new generation, referring to the people born after 1993, has been named Generation Z, Google generation, post–millennials or iGeneration (Gould, Nalepa, & Mignano, 2020; Parker et al., 2012). Hence, the current generation of youth members in sports clubs are classified as Generation Z and requires another approach.

Literature around the effect of Generation Z on the organised sport is scarce (Priporas, Stylos, & Fotiadis, 2017). Also, before advocating for change, understanding the characteristics of Generation Z and investigation of their perspective is needed (Bennett, Maton, & Kervin, 2008). A survey was conducted in May 2021 targeting 6- to 18-years-olds (n=549) and results indicate that children and adolescents prefer social media channels, rather than real life communication, to communicate with their sports club and coach. Additionally, the social network Instagram is preferred to follow activities and news from sports clubs.

Given that Generation Z is highly connected with technology and social media, and that social media and technology can lead to increase in physical activity levels, we claim that the dependence on technology and social media does not have to be the opponent of organised sport participation but can be the mean through which it is stimulated (Gould et al., 2020; Zhang et al., 2016).

Keywords: Generation Z, social media, organised sport, sport participation, technology

Seraji et al.

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Sport Volunteering, Providing Equal Opportunities and Narrowing the Gender Gap

Volunteering can be seen as an opportunity for young female and male students to work together for a common goal in organizing a sport event and to get to know each other’s differences and therefore as a valuable mean to narrow the gender gap. Research has shown that men and women often perform different roles during volunteering which corresponds to wider...
attitudes in society about what is deemed appropriate for each. In order to investigate the relationship between gender and volunteering, semi-structured interviews conducted with 15 volunteer managers with experience of being volunteer and also working with volunteers in university sport events. Interviewees were asked how they will recruit and assign tasks to volunteers considering their gender. The results showed that volunteer managers in sport events, although claiming to welcome all volunteers regardless of their gender, differentiate between them in recruiting and assigning tasks; their priorities in assigning task seems to be influenced by unconscious biases, stereotypes and assumptions. Volunteer managers believed that male and female volunteers have different abilities, motivations and expectations for their volunteering experience and these factors need to be considered in task assignment. The variety of tasks that volunteers can do in a sport event is very large and a volunteer manager can recruit male and female volunteers with different backgrounds, interests and abilities, in a way they can keep high levels of motivation for volunteering while performing their assigned tasks. The very important result of the research is that volunteer managers mostly believed gender has not been a factor in their volunteer management and seems they are not aware of their potential gender-based preferences and biases; this fact emphasizes on the importance of self-awareness and overcoming intellectual prejudices in working with volunteers in sport events. Gender equality Should be an integral part of volunteer management in sport events and activities. Regardless of the size or nature of volunteering activities, not only equality of opportunity for all people to volunteer in ways that are right for them, with the support that each person needs to make volunteering a good and valuable experience.

Keywords: Sport Volunteering, volunteer manager, Gender, unconscious biases, task assignment

Schmid et al.

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The relationship between sports-related and socio-economic resources at the end of the athletic career and the subsequent vocational career: An empirical study among elite athletes

The aim of this study was to examine the relationship between several sports-related and socio-economic resources at the end of an athletic career and the subsequent vocational career. For this purpose, we surveyed 341 former Olympic athletes representing Switzerland (32.8% female, 67.2% male) with an online questionnaire regarding their athletic, educational, and vocational career. In line with the person-oriented approach, this study adopts a holistic perspective,
allows interactions between different aspects of an athlete’s career, and considers retiring athletes as a heterogeneous group. Using cluster analytic techniques, we identified six clusters of resources at the end of the athletic career and clusters of vocational status five years after career termination. Additionally, we linked the six resources clusters with the five vocational status clusters and calculated transition probabilities. As expected, the different patterns of sports-related and socio-economic resources at the end of an athletic career influence the probability of specific vocational careers. In particular, clusters that were characterized by a dual career had several opportunities in working life, whereas the other two clusters fared less well. However, a lack of educational certificates could be compensated for by athletic success and popularity, provided that the vocational activity was pursued in sport. These findings may help career counsellors to better understand athletes’ career development options and provide services of ever-improving quality.

Keywords: Career transition, cluster analysis, employment, person-oriented approach, second career

Siedlaczek

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KADA – Institutionalised Dual Career in Austrian Sports

KADA, rooted in 2004 as a publicly funded counselling agency for women in elite sports, discovered a large benefit for all Austrian athletes in an institutionalised collaboration between education and sport.

In 2010, KADA realigned and attained funding contracts with the federal ministry of sports and the Public Employment Service Austria. KADA now seizes the possibility to support Austrian athletes of all sports, all genders, within every career transition phase, from school up until post-sport profession. Over 2000 supported athletes within the past ten years and an annual increase in numbers, reflect the demand for support in dual career counselling.

The largest segment with 52% of the KADA-supported athletes, are pursuing higher education. As a response, KADA launched the SLS-Programme (tr. study-performance-sports) in 2011 to tackle the lack of sensitivity and coordination of student athletes in public universities. Strategic collaboration agreements between KADA and the respective universities were set in place, where student athletes primarily benefit from enhanced flexibility on class attendance, exams, custom study schedules and a central contact person within the university. Since recently, some universities even acknowledge elite sport as professional work experience when certain programmes require this as a prerequisite.

KADAs Dual Career Coaches support athletes with individual semester planning and provide a centralised coordination of the SLS-Programme. This works as universities and KADA strive for the same two goals. Firstly, to enhance accessibility of courses and secondly to ensure academic success of their students. The SLS-Programme presents itself as an additional, free-of-
charge service with minimum effort and currently comprises ten Austrian Universities, of which eight are state-funded.

Limitations of the SLS-Programme include educational flexibility i.e. reduction in mandatory class attendance exceeds the universities’ policy or even the legal frame. Especially MINT-subjects and human medicine are less accessible to students athletes and hence lesser populated. KADA efforts to enhance accessibility of those subjects, as many student athletes indicate an increasing demand.

Keywords: Dual Career, Sport, Austria, NGO, Transition, University, Collaboration

Silaev
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Young élite athletes' risk awareness of the future professional sporting career.

Research question: A professional sporting career is a highly risky project, though many young athletes aspire to become professional sportspersons. Since the invasion of business society into the field of sport, multiple agents with contrasting goals fuel these aspirations. This research focused on the question: How do young élite athletes perceive external forces that shape their decision to pursue a professional sporting career?

Research method: We surveyed 92 young athletes studying at the Professional School for Elite Athletes in Ticino (Switzerland). For the research design a multi-method approach was chosen, combining one-on-one interviews with online questionnaire. Quantitative and qualitative analysis of data was used to identify correlations between psychosocial parameters of respondents and their perceptions.

Results and findings: The data revealed that gender, sport discipline and competition experience at international level influences athletes’ perceptions. The results showed that athletes tend to underestimate the risks of professional sport. Moreover, parents, peers and mass media might be a distortive source of information about the professional sport career. Finally, many young athletes don't recognize social media and national élite sport system as a valuable resource in their sporting career development.

Implications: This study identified and examined several elements that could be used by young élite athletes as a basic framework to realistically assess their environment and to make more thoughtful decisions concerning their future professional careers. For individuals and institutions who assist young élite athletes in their career development, it provided a series of recommendations in order to increase athletes’ awareness.
Keywords: young élite athletes, adolescence, risk awareness, professional career, transition

Sinclair et al.

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Is sport a latecomer when it comes to equality?

Society can be described as a series of socio-cultural relationships which exist among humans within specific socio-economic contexts. Rather than sport being a reflection of society, it may be better described as part of a permanent but changing refractive process which occurs between and amongst these relationships and contexts.

If the ideological superstructure is neither a straightforward reflection of a society’s economic base nor a formless cloud of ideas floating freely above a society, it may be more useful to imagine sport enjoying a relative autonomy from its socio-economic context. This provides a basis for examining the Olympic Games at three important historical moments: the Ancient Games in Greece, the Berlin Games in 1936, and this year’s Tokyo Games. Several ideas emerge here: the Olympic Games are not separate from society; they reflect various aspects of that society; they may provide an arena in which certain aspects of that society may be challenged; this relationship is not fixed or predictable.

It is impossible to dissect sport into totally discrete socio-cultural, political and economic elements. These elements are intertwined and depend on each other to the extent that they have become inseparable. The concept of sport as latecomer in terms of equality does not make sense if we consider sport to be part of the society in which it exists. Gender equality in sport only begins to make sense if it is considered politically, economically, socially and ideologically.

Society produces both oppressive and liberating experiences constantly. If we accept gender equality within sport as a main objective, we should accept and embrace the need for continuing change. We should be asking is to what extent does or can modern sport provide an arena in which oppression can be both identified and challenged. It is my premise that a careful analysis of what has and hasn’t been achieved in terms of gender equality, as well as sensitivity towards
new challenges such as transsexuality in the world of sport, is most useful when sport is located within an ideological superstructure, inextricably intertwined with other societal elements.

Keywords: Equality in sport, gender equality, relative autonomy, ideology, oppression

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The experiences of selected professional women rugby and soccer players, and sport administrators during COVID-19

Professional rugby and soccer for women in South Africa is still in the early stages of development. Therefore, these codes of sport for women are vulnerable to external influences such as the COVID-19 pandemic. This study focuses on the experiences that the COVID-19 pandemic has had on selected professional women's rugby and soccer players and sport administrators. The theoretical approach that is adopted by this study is change theory whose central tenets are based on the work of Kurt Lewin (1947), considered the founding father of change management, and primarily focuses on approaching change management through the concepts of unfreeze, change, refreeze. The chapter also uses the work of Batras, Duff and Smith (2014) who offer a complementary theoretical perspective to Lewin and Rogers’ (2003) concept of organisational change. Data for the study was collected from players and administrators. The sample consisted of female players (n=6) and two administrators (n=2) one for each sporting code. The total sample consisted of eight respondents. The data collection tools used were open-ended questionnaires (due to social distancing measures) which were separately designed for each category of respondents and a Twitter poll on whether COVID-19 had a negative impact on women's sport. The Twitter poll was quantitatively analysed. The data from the open-ended questionnaires was qualitatively analysed using thematic analysis and linked to change theory in terms of the experiences of the participants in the face of a pandemic which has changed their normal way of playing and administering the different codes of sport. The findings of the study illuminate the financial impact on players who have contracts; the multiple psychological effect on players and the unpreparedness of administrators of women's rugby and soccer to handle the uncertainties related to a pandemic of this nature. The study recommends the need for change and innovation for professional players and administrators in their approaches to these two codes of sports during the COVID-19 pandemic as well as the need for contingency planning measures drawing from the theoretical strands of change theory thinking: unfreeze, change, refreeze.

Keywords: COVID-19, women's soccer, women's rugby, change theory, South Africa
Title of presentation: An employer's perspective on athletes' employability: Do athletes make good employees?

As a sporting career at the highest level is relatively short, many elite athletes choose to develop a new professional career after their sporting career. Perseverance and dealing with adversity are typically pointed out as competencies former elite athletes possess and which may pave the way for also being a valuable employee. Given this perception, career development research engaged in identifying athletes and career support providers' perspectives on the challenges, barriers, and resources relevant to athletes pursuing another vocational career (e.g., B-WISER, 2018). Nevertheless, research considering the perspective of employers regarding athletes as employees is scarce. Therefore, this study aimed to investigate the perceptions of employers (not) to employ active and/or former elite athletes.

Focus groups and semi-structured interviews with 58 employers (42% female) from six European countries (Belgium = 14, Germany = 3, Italy = 15, Slovenia = 14, Spain = 8, Sweden = 4) were conducted. Employers from both the public (38%) and private (62%) employment sector were sampled and represented sport-related (26%; e.g., Olympic Committees, sport research institutions, sport policy institutions) and nonsport-related (74%; e.g., audit and tax services, sales) organizations.

Thematic data analysis revealed athlete-related and employer-related reasons to both employ and not employ athletes. The main reasons put forward by employers to employ athletes included life skills, awareness and recognition, sport affinity and organizational policy. On the other hand, gaps in both athletes' personal and vocational development (e.g., lack of job specific skills, lack of availability, unrealistic expectations, lack of job search competencies) were seen as reasons not to employ athletes. Additionally, some practical reasons (e.g., limited availability, no financial or legal advantage) made employers believe that athletes do not make good employees. In general, however, it should be noted that employers' decision to or not to employ a new workforce is mainly based on the person itself and the competencies accompanied with the person, rather than on the title of athlete.

This is the first study to explore the broader spectrum of employers' perspectives on athletes' employability. Findings can provide a basis to develop methods and promote the added value of employing elite athletes.
Digitalization

Sotiriadou

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Digital innovation in high performance sport: State of Play

Individual athletes, sports teams/leagues, coaches, high performance managers and whole nations across the globe seek continuously better ways to improve performance, invest efficiently in sports and accomplish elite success (Sotiriadou & De Bosscher, 2013). New techniques of performance analysis are a significant part of the drive for athletic perfection (Evans, McNameeaA, & Guy, 2017). The rise of performance analysis in sport dates back in the Roman times and the Ancient Olympic Games and it hasn't ceased since. However, today's digital innovations and technological advancements have resulted in interventions that alter substantially coaching and training systems and processes that result in knowledge augmentation in coaching and training as well as ultimately athletes' performances and results. This presentation examines the digital innovations used in high performance sport and how sports, teams and athletes benefit from these advancements. Potential drawbacks are also presented and examples of modern equipment and technologies applied in multiple high-performance athlete service areas, such as general fitness, sport-specific training, restoration, nutrition, medicine, and psychology are examined. Australia is used as a case study to illustrate a nation's innovative approach in advancing digitization in popular and professional sports. The presentation concludes with key notions on the pervasiveness and future of digitization in global sport.

Keywords: Athlete performance; managing high performance sport; digital innovation in sport

Van Zyl

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Dual Career Perceptions of Olympic Athletes at Higher Education Institutions: A South African Case Study

The National Sport and Recreation Plan states that there are 23 universities in South Africa that have increasingly become hubs for Olympic student-athletes who enter the latter phase of their long-term athlete development process.

The requirements placed on Olympic athletes in contemporary world sport are such that they need to dedicate themselves to reaching the pinnacle if they are to achieve excellence. This implies that most of the athletes' time is dedicated to developing their sporting careers, with very little time left to develop other aspects of their lives. The reality facing many Olympic athletes is that few are sufficiently financially rewarded to allow them to make a living out of their sport, and even fewer can rely on measures being put in place in their countries to assist with the financial and psychological impact of their eventual retirement from the sport. This places even
more importance on the need for athletes to either have ‘dual’ careers or else prepare for post-athletic careers while still participating at the highest sports level. This study aims at the development of an understanding of the perspective of a cohort of Olympic athletes in higher education regarding the simultaneous development of their academic and sporting careers. A qualitative and interpretive research design was followed. Purposeful sampling was used to include 14 South African Olympic athletes who qualified for the 2020 Tokyo Olympic Games. The data was obtained using ten semi-structured interviews from five different sporting codes, namely track and field, swimming, hockey, and rowing. The findings of the study showed that Olympic athletes have more than dual careers to balance. Financial obligations like paying study and sports fees make a successful dual career challenging. Competition travelling demands are a major burden on athletes who need to stay up to date with their academics.

Time management is crucial when Olympians have loaded training, travelling and academic schedules. Olympic higher education student athletes' perceptions reveal that extended academic programmes, financial support and a sports tutorial system are recommended/necessary to ensure that they have successful dual careers.

Keywords: Dual-career; Higher Education; Olympic athletes; student-athletes; University Sport

Vitter

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Challenges for Women in High Performance Sport: Call for an Intersectional Approach

In recent decades, continuous action has been taken internationally to advance gender equality in sport, which led to progressive women's involvement, both with regard to participation and governance. Nevertheless, many challenges for women in high performance sports still remain, and very often the complexity of these obstacles goes beyond gender alone, since not all women face the same challenges. Other factors such as race, nationality, age, religion, education, and sexual orientation play an important role and create unequal experiences for women in sport participation and governance.

The combination of these factors creating overlapping systems of discrimination and privilege is referred as intersectionality coined by American Professor Kimberlé Crenshaw. This approach was actively used by social, political, and business scholars but remains underestimated and understudied in sport possessing big potential for producing knowledge that can capture diverse women's experiences and challenges in sport globally.

Research shows that women in high performance sport may face such forms of discrimination as pay gap, sexual objectification, judgment based on appearance rather than professional
achievements, inequality in representation, lower media coverage in comparison to male counterparts. Each woman in sport may experience several forms of prejudice simultaneously based on facets of her identity which are interconnected and should be considered together.

To fill an existing gap my presentation will employ an intersectional approach to take a step further and develop recommendations to empower women in high performance sport by identifying and dismantling their specific obstacles. Proposed recommendations include: (1) to educate communities about intersectionality; (2) to create more inclusive conditions by collecting opinions from women with diverse identities to grasp their experiences and highlight their voices, and take respective actions to pursue their needs in sport; (3) to establish criteria to ensure diverse representation of women encompassing a wide range of intersecting identities in sport organizations including decision-making level; (4) to encourage public visibility of female athletes with diverse identities.

By applying a multiple-issue lens of intersectionality, sport organizations and other sport stakeholders can better understand different types of barriers faced by women and create effective and truly transformational solutions to these complex issues.

**Keywords:** Intersectionality, women, sport, equality, education

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Zaharia

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**Does the unique leadership characteristics of Olympic athletes enhance their employability?**

Olympic athletes possess distinctive set of characteristics and abilities that allows them to be outstanding leaders alongside their exceptional athletic and mental abilities. Identifying and quantifying these leadership characteristics can enhance Olympians' employability, leading to a successful career transition. The researcher first examined the correlation between Olympic athletes' average leadership trait score and their gender, age, type of sport, number of Olympic participations, and the athletic achievement based on highest placement at the Olympic Games. Assessment of 119 Olympic athletes was conducted with a diverse group being comprised of medallists (n =72), and non-medallists (n = 45) who competed in 11 individual or team sports, representing both genders, various age groups, and from 20 countries around the world. The elite athletes answered 14 questions from the Leadership Trait Questionnaire (LTQ) survey by placing themselves in the role of a leader, using the 5-point Likert scale (1- strongly disagree, to 5 - strongly agree). Out of the possible 70 points, the entire population surveyed had the mean LTQ score of 62.48, while medallists scored 61.49 and non-medallists scored 62.70. There were no significant differences in LTQ scores, leading to the conclusion that all Olympians possess unique leadership characteristics. To explore how to enhance the employability of elite athletes, the researcher investigated if a correlation exists between their total LTQ scores and their chosen careers. Out of 119 participants, most remained in the sporting world as coaches (n=46), while the others worked in the following areas: self-employment (n=11), sales/marketing (n=10),
consulting (n=7), and government related (n=7). Looking at the mean LTQ score obtained by the surveyed Olympians, the students scored the highest with 67 points, retirees 65.4, followed by the college professors scoring 64.75, teachers 63.3, coaches 62.9, unemployed 62.7, and those who chose sales/marketing as their career scored 62.6 out of the possible 70. In conclusions, the employability of elite athletes can be improved by empowering them to have a better understanding of their unique leadership characteristics alongside other exceptional skills they already possess and apply them as they transition to life after sports.

**Keywords:** Olympians, Career transition, Employability, Leadership

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### 3.3 Abstracts Posters

**Capranica et al.**

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**Dual Career of the employee-athlete and employee-coach towards brand values alignment: The BRAVA-DC project**

Professional athletes/coaches are guaranteed a comfortable life, whereas their non-professional counterparts have to find an employment to support their sports career when prolonged into adulthood. Dual careers (DC) at for-profit and non-profit company levels received limited attention. Whilst companies value elite athletes as vehicles for advertisements or product endorsement, flexible working conditions and arrangements enabling a sportsperson to prepare for and to compete in athletic events are not offered. Because companies are called to have a social role through their Corporate Social Responsibility (CSR) strategies, policies, and practices, they could contribute to the advancement of the European DC discourse through internal strategies (i.e., vision and cultural values) and promotion of the external image. In fact, consistency and coherency between internal and external elements of the corporate brand should be aligned to successfully manage corporate brands perceived as authentic, whereas misalignment of CSR practices is perceived as insincere and decreases consumers’ trust and negatively influences employees’ affiliation. To enhance and communicate the value of their sustainable strategies and practices, companies can leverage their brands through a pro-active translation of DC into their own policies for ameliorating the working conditions and for facilitating the employment of athletes/coaches. This employee-centred organisation could foster practices of engagement and
involvement of employee-athletes/coaches through the co-creation of social dimensions of CSR ameliorating working conditions of existing employees but also creating and sustaining an attractive employer brand image that appeals top-level workforce.

Based on the European DC guidelines, the EU-funded “Brand Values Alignment through Dual Career” (BRAVA-DC) Collaborative Partnership (622824-EPP-1-2020-1-IE-SPO-SCP) is deemed relevant to raise the awareness of elite employee-athletes/coaches, corporate marketing managers, and CSR managers for the need of DC policies and provisions in the business market. In particular, BRAVA-DC aims to provide significant contribution for the development of DC guidelines for the employment sector, and to establish positive collaboration and exchange knowledge between sport, business marketplace, and policy makers. The experimental approach of BRAVA-DC towards the development of brand values alignment through DC through semi-structured interviews, focus groups and concept mapping will be presented. Finally, a general discussion and practical implication will be provided.

Keywords: Dual career, Corporates, CSR, employee-athlete, employee-coach

Italy

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Media as a Channel of Athletes’ Dual Careers Promotion and Education: The ED MEDIA Platform
Due to the pervasiveness of technology, the narrative around student-athletes in the media and social media could play an increasing role in generating, communicating, and sharing information on dual career (DC). The EU-funded Collaborative Partnership “Media as a Channel of Athletes’ Dual Careers Promotion and Education” (ED MEDIA, 603456-EPP-1-2018-1-LT-SPO-SCP) aimed to educate media stakeholders and athletes on the benefits of a positive intersection with DC to inspire other athletes and to contribute to the development of the European DC discourse.

In the ED MEDIA context, the partners from seven EU Member States (e.g., Germany, Italy, Lithuania, Malta, Romania, Slovenia, and Spain) considered the relevant scientific contributions on the DC and media, the newspaper articles focusing on DC, and the implementation of seven European DC Guidelines related to communication in their respective countries. Furthermore, in considering that social media are particularly relevant to student-athletes for self-promotion and connecting with a wide variety of stakeholders, the Ed Media platform (https://www.lsu.lt/en/project-edmedia/edmedia-online-platform/) was developed targeting student-athletes, DC stakeholders, and media specialists.

The main findings of the ED MEDIA project confirmed kaleidoscopic sport-specific and education/work-specific DC landscapes, a limited implementation of the EU policies in the partner countries, a lack of scientific interest in media on DC, and little media interest in featuring the academic commitment of athletes. In particular, the platform presents three sections: 1) Information: encompassing information on DC, and links to interesting institutions, especially targeting sport organizations, sport clubs, universities, media specialist and other sport stakeholders; 2) Interaction: presenting social profiles for potential links between student-athletes and other stakeholders; and 3) Training: presenting video of how promoting DC using different social media and some interesting events.

The ED MEDIA findings, recommendations, and the online educational platform might be useful to establish a social media DC related dialogue, aiming at a positive exposure of student-athletes. It also facilitates a better understanding of their challenges in meeting sport and academic demands for gathering competencies that can increase future professional opportunities at the end of their sporting career.

Keywords: Dual career, Media, Social Media, visibility, education platform

Feng et al.

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Utilizing Information Technology to Support the Training and Competition of the Chinese Women's Curling Team in the Winter Olympic Games
In order to ensure that the China Women's Curling Team (CWCT) has optimal performances in the 2010 Winter Olympic Games (WOG), the General Administration of Sport of China provided strong logistic and financial support to CWCT. Our research team was honoured to be officially designated to conduct the research work, particularly that involving the comprehensive analysis and evaluation of the individual skills of the CWCT, as well as collecting and analysing the techniques and strategies of their primary competitors. Our goal is to provide reliable recommendations for targeted training and the development of competitive tactics.

We began by interviewing the members and coaches of the CWCT to understand their needs in the preparation process of the competition. We then developed a custom software which can store and analyse data of the training and competition techniques. Using our software, we could objectively extract technical characteristics for each player, as well as calculate the type of shot with higher or lower successful rate respectively. Based on these data, the coaches can make a new training plan, develop targeted competitive tactics, and form player assignments for competitions. Not only our software system improves the performance of the CWCT, it also allows us to analyse data about potential competitors. According to the woman team ranking in WCF, we listed Canada, Sweden, Switzerland, Scotland and Denmark as the main competitors. The statistical data collected included: team basic strategy, player's clockwise draw, player's counter clockwise draw, player's clockwise take-out, and player's counter clockwise take-out. We analysed these data and sent the results to the CWCT.

Before the 2010 WOG, the coaches of the CWCT used our system to develop advantageous game strategies specific to the characteristics of their opponents. The basic principle was to use the curling techniques that CWCT are most strong in, while forcing the opponents to use the techniques that they are weak in. In addition, the skip of the CWCT also referenced our system to call the shots during the WOG. With the help of our software system, the CWCT qualified the play-offs and won the bronze medal of the WOG for the first time.

Keywords: curling, opponent analysis, targeted strategies

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Hidalgo Santos et al.

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The dual project of the Club Natació Banyoles: Dual careers model with young athletes

The main objective of the poster is to present the Club Natació Banyoles program to support dual careers (ICDC). The project aims to find the balance between high quality in sport training and regular high school education of the club’s young athletes.

The club is located next to the lake at Banyoles and allows a focus on water sports including canoeing, rowing, triathlon and swimming, among other sports.

The idiosyncrasy of the model lies, first, in the age of the athletes. The CN Banyoles model is aimed at athletes from the age of 14 in full time education. Second, the entity is not an official high-performance sports centre.

The ICDC works with young talents who are just beginning their process of specialization and is based on four pillars: a) an optimal organization of the entity that allows the club to keep the original non-elite structure but, at the same time, to select their own athletes for dual career program; b) coordination with educational institutions that allows to do some curricular adaptations for the athletes; c) a multidisciplinary work team which includes head coaches, the pedagogical coordinator, the medical staff, and the sports psychologist, and; d) a program of dual career support services with seminars, conferences about training for technicians, guidance for families, monitoring and psychological support for athletes.

The results obtained so far are promising. In a study of the pilot plan of this model, observed improvements in sports performance (31%) and education (36%), accompanied by a high degree of satisfaction of coaches and parents. Furthermore, all those involved appreciated an increase in the athletes' motivation and commitment, improvements in their self-esteem and personal relationships, as well as a decrease in stress thanks to greater rest and recovery.

The overall impact has been positive, especially if we bear in mind that it has already produced some high-level athletes. However, this discussion remains focussed on the feasibility of this type of project in conventional sports clubs, where, rather than concentrating on the established high-level athletes, the aim is to create structures favourable to the fullest possible development of young athletes.

Keywords: Dual careers, youth sport, talent development, scholarship
Impacts of the COVID-19 Pandemic on Mental Health Provision in Higher Education Sport Settings

BACKGROUND: Performance sport athletes in the university ecosystem are a subpopulation of elite athletes known to have unique epidemiological factors for mental health. Elite athletes in higher education environments, often referred to as dual career athletes or student-athletes, experienced the compounded effects of the COVID-19 pandemic athletically, academically, and socially.

AIMS: This study aimed to explore how the pandemic affected wellbeing and mental health for student-athletes in various environments cross-culturally. The study also aimed to identify emergent opportunities for enhancing student-athlete mental healthcare provision.

METHODS: Semi-structured interviews were conducted with student-athlete welfare stakeholders at universities in Canada (USPORT), the United Kingdom (BUCS), and the United States (NCAA). Participants were either Athletic Directors, Coaches, or Student-Athlete Mental Health Practitioners. The results were thematically analysed.

RESULTS: Multilateral perspectives described experiences that many were undergoing during the pandemic, but within the student-athlete microcosm. The data highlighted the complexity of student-athlete welfare systems. Individually, there were clear institutional and student-athlete differences emphasized by each participant. Collectively, the group of voices underscored an array of shared barriers and limits to student-athlete mental health during the pandemic. The major findings of the study relate to opportunities for (i) creating equitable access and resources and (ii) developing integrated specific care for student-athletes within wider healthcare systems. The emergence of virtual and hybrid (technological and in-person delivery) healthcare models and tools during the pandemic offer new possibilities. Geographical licensure restrictions on mental health practitioners was a major barrier to the delivery of tele-mental healthcare to student-athletes in all three countries during the pandemic.

CONCLUSIONS: This is the first study to explore perspectives of mental health management across national university sporting associations during the COVID-19 pandemic. Therefore, the findings may help university sport leaders focus their attention post-pandemic and may also encourage stakeholders to work collaboratively to enhance systems and provision of mental healthcare to student-athletes. The results may also offer important insight to inform future debate and action promoting student-athlete wellbeing.

Keywords: Mental Health, Student-Athletes, COVID-19 Pandemic, Higher Education, Sport Management
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