Book of Abstracts European Conference on Sport Economics

August 21st -23rd 2024

Rotterdam, Netherlands

Program overview

Wednesday 21st August

Time	Excelsior stadium
15h00 - 15h30	Registration + coffee
15h30 - 15h45	Welcome
15h45 - 17h30	Policy panel on recent ECJ cases in sports
17h30 - 20h00	Welcome reception

Thursday 22nd August

Time	Forum	Praag	Auckland	Aberdeen	Resto
08h45 - 09h00	Welcome				
09h00 - 10h40	A1: 4 papers	A2: 4 papers	A3: 3 papers	A4: 4 papers	
10h40 - 11h10					Coffee
11h10 - 12h25	B1: 3 papers	B2: 3 papers	B3: 3 papers	B4: 3 papers	
12h25 - 14h00					Lunch
14h00 - 15h40	C1: 4 papers	C2: 4 papers	C3: 4 papers	C4: 4 papers	
15h40 - 16h00					Coffee
16h00 - 17h30	ESEA meeting				

Friday 23rd August

Time	Forum	Auckland	Aberdeen	Resto
09h00 - 10h15	D1: 3 papers	D2: 3 papers	D3: 3 papers	
10h15 - 10h35				Coffee
10h35 - 11h25	E1: 2 papers	E2: 2 papers	E3: 2 papers	
11h30 - 12h30	Keynote: Ignacio Palacios-Huerta			
12h30 - 12h40	Closing			
12h40 - 14h00				Snacks

Presenters in alphabetical order by last name

1. **Alice Aguiar-Noury**
   - **Session – paper #**: D3-1
   - **Title**: Life Satisfaction and Risk Preferences of Couch Potatoes, Recreational and Elite Athletes: The Impact of Mental Dispositions and Attitudes
   - **Mail**: alicea@uhemisferios.edu.ec
   - **Abstract**: This study examines the positive association between physical activity and mental well-being among elite athletes, utilizing a substantial sample of over 4,600 students across 25 German universities. It addresses three interconnected questions: (i) variations in affective well-being or happiness among couch potatoes, recreational, and elite athletes, (ii) disparities in cognitive well-being or life satisfaction among these groups, and (iii) differences in risk preferences and attitudes. Findings indicate significant personality disparities between elite students and others, including couch potatoes and recreational athletes. Moreover, both recreational and elite athletes report higher levels of happiness and life satisfaction compared to couch potatoes, with a notable difference between recreational and elite athletes. Additionally, both athlete groups display a greater inclination toward risk-taking than couch potatoes. Overall, this study underscores the positive association between physical activity and mental well-being among elite athletes, shedding light on important factors contributing to their well-being.

2. **Samantha Barresi**
   - **Session – paper #:** C4-4
   - **Title**: Is there a Relationship Between Financial and Sporting Performance? A Comparative Study of Serie A, La Liga, and Premier League
   - **Mail**: samantha.barresi@deams.units.it
   - **Abstract**: This study explores the relationship between the financial (FP) and sports performance (SP) of companies operating in the European football club industry, specifically in the Serie A, La Liga, and English Premier League. The existing body of the literature reports a positive linkage between these two dimensions, and our work also aims to investigate the impact of stadium ownership and other variables on this interplay. The research encompasses a sample of football clubs for the 2014/2015 - 2021/2022 sports seasons. The financial and sports data are drawn from the Orbis BvD database, transfertmarkt.com, and the league's online archives. Correlation and regression analyses are run to verify potential associations between FP and SP. According to prior studies, we expect a favorable association between financial and sports performance. Moreover, a comparison of this analysis across different football leagues could uncover potential nuances tied to the specific business characteristics of each league.

3. **Matthew Bond**
   - **Session – paper #:** A2-1
   - **Title**: Using multi-state models to forecast in-play football matches
   - **Mail**: mbond39@liverpool.ac.uk
   - **Abstract**: The paper presents a multi-state model for predicting the results of football matches in-play. In addition to responding to changes in the match score line, red cards,

and time elapsed, our predictions account for the abilities of the players on the pitch, and respond to changes in starting line-ups, the players being substituted on and off the pitch during a match, and the identity of a red carded player. We fit our model to a large dataset covering multiple European football leagues over five seasons. The predictions respond to player abilities and team formations through the use of a series of multinomial models which are used to estimate how players from opposition teams interact with each other. We demonstrate the accuracy of our model using calibration plots and compare it to the in-play betting market.

4. Thomas Breuer
- **Session – paper #:** E2-1
- **Title**: Membership in motion: Unveiling the impact of demographic and economic factors on sports club membership with a panel data approach
- **Mail**: t.breuer@dshs-koeln.de
- **Abstract**: In Germany, over 86,000 sports clubs with nearly 28 million members play a pivotal role in sports promotion and underpin the national sports system. Beyond offering low-threshold sports programs for different population groups, clubs contribute socially by promoting health, supporting cohesion, integrating underrepresented groups, and fostering democratic participation. Despite overall membership recovery, recent research reveals challenges in recruiting and retaining members, posing threats to club existence. This study uses longitudinal data derived from four waves of the Sport Development Report. It explores the impact of the demographic and economic environment in the community over time on sports club membership, focusing on the effect of community size and demographic shifts in a community or county (e.g., population aging, migration, and unemployment). Preliminary findings indicate significant negative effects of population aging and unemployment on membership numbers, supporting the hypotheses. Migration, however, shows a significant positive impact on membership.

5. Christoph Buehren
- **Session – paper #:** A1-1
- **Title**: Increasing climate change attitudes at the expense of well-being? Evidence from environmental sustainability initiatives of sports organizations
- **Mail**: christoph.buehren@rub.de
- **Abstract**: Based on the theories of planned behavior and social preferences, we argue that sports organizations can stimulate environmental attitudes and subjective well-being. We use survey data from the 2022 Eurobarometer (n=6,311) and seemingly unrelated regressions trying to explain the climate change attitudes and life satisfaction of sports and fitness club members. Controlling for members' socio-demographics, we are especially interested in the impact of the clubs' environmental sustainability initiatives, which typically increase the costs for the members. We observe positive correlations between the members' attitudes towards climate change and the clubs' use of green energy and waste reduction. However, these initiatives are not significantly associated with their members' life satisfaction, suggesting that environmental sustainability does not come at the expense of social sustainability.

6. David Butler

- **Session – paper #:** D1-3
- **Title**: The Baby Club - Paternity and Performance in a High-Pressure Context
- **Mail**: david.butler@ucc.ie
- **Abstract**: We offer a new direction on the Economics of fatherhood by studying a heretofore empirically unexplored relationship - paternity and workplace performance. We propose that fatherhood represents a (mixed) emotional shock. It induces psychobiological and lifestyle changes that may impact productivity. We connect 115 births to match-level performance data for 96 elite footballers/fathers prior to and after the onset of fatherhood (N=3,069). The suite of performance measures we model are sourced from OPTA via FBref.com. We estimate OLS fixed-effects and Poisson fixed-effects regressions for advanced performance measures and explore heterogenous effects by studying first-time fathers. An emphasis is placed on aggression given the psychobiological implications of fatherhood. We consider the sensitivity of the statistical associations by studying the pre-birth period and explore information effects related to pregnancy news. The results are mixed, but more negative performance effects are present post-fatherhood; players engage less in cooperative activities conducive to team production.

7. Robert Butler

- **Session – paper #:** A4-2
- **Title**: The "Coffin Box" and Greyhound Racing Outcomes
- **Mail**: r.butler@ucc.ie
- **Abstract**: This research empirically explores longstanding folklore in greyhound racing; that dogs drawn in trap four (the "coffin box") has a lower chance of success. Whether market prices incorporate trap placement is unexplored in the sport. Using data from Sports Spotlight Group covering 78,595 greyhound runs in over 13,000 races, we investigate if finishing position is affected by a dog's trap draw, controlling for pre- and within-race conditions. Our Poisson and negative binomial regressions suggest that greyhounds drawn in lower traps are significantly more likely to have higher finishing positions. The dog drawn in Trap 4 is significantly more likely to finish in a worse position. However, we do not confirm the exact folklore. When each trap is considered as a standalone draw, those drawn in Trap 4 are significantly more likely to finishing ahead of those drawn in Trap 5 (this trap is most deserving of the "coffin box" title).

8. Dennis Coates

- **Session – paper #:** A4-4
- **Title**: What do North AmericanTeams Maximize?
- **Mail**: coates@umbc.edu
- **Abstract**: Following the work of Garcia-del-Barrio and Szymanski (2009), winning percentages are calculated for teams from the NFL, NBA, MLB, NHL and MLS under the assumptions of both win and profit maximization. Ordinarily, North American teams are assumed to maximize profits. The results of this study are more consistent with win maximization on the part of North American teams across all leagues.

9. **Kenneth Colombe**
   - **Session – paper #:** B1-1
   - **Title**: Exploring implicit racial discrimination in the WNBA
   - **Mail**: kenneth.colombe@uni-tuebingen.de
   - **Abstract**: Discrimination, particularly on racial grounds, is a pervasive issue across various spheres including policing, human resource management, evaluations, and notably in sports. With their publicly available data and high stakes, sports environments offer a unique opportunity to explore implicit bias, a subtle yet systemic form of discrimination. This study replicates and extends upon the seminal work of Price and Wolfers (2010) on implicit racial discrimination among NBA referees, applying their methodology to the Women's National Basketball Association (WNBA). The project analyzes secondary data from WNBA seasons 2004-2023, focusing on foul calls to identify potential racial biases. We employ weighted regression estimations with multilevel fixed effects to discern causal relationships, factoring in referee and player race, gender composition of referee crews, and game-specific factors. Our findings have implications for understanding implicit bias in high-pressure decision-making environments.

10. **Gergely Csurilla**
    - **Session – paper #:** C1-4
    - **Title**: Risk taking in chess: empirical evidence from sport for prospect theory
    - **Mail**: csurilla.gergely@krtk.hun-ren.hu
    - **Abstract**: Prospect theory, developed by Kahneman & Tversky (1979), elucidates human decision-making processes, emphasising asymmetrical risk preferences. Chess, as a strategic game with inherent risk and uncertainty, offers a practical context for testing this theory. Leveraging data from lichess.org, an online chess platform, our study analyses 3,596,250 player performances to examine risk-taking behaviour using a unique feature called berserk. This option, allowing players to sacrifice time for potential tournament points, presents a natural setting for studying risk propensity. Contrary to prospect theory's predictions, our findings reveal that players in gain domains are more inclined to take risks, especially those with higher Elo scores and in later tournament stages. Robustness tests confirm the consistency of results. We propose possible explanations, including performance-driven risk dynamics and the absence of external incentives, underscoring the complexity of risk behaviour in strategic settings.

11. **Dmitry Dagaev**
    - **Session – paper #:** C1-3
    - **Title**: Do the Racers Compete Strategically or Just Drive as Fast as Possible?
    - **Mail**: ddagaev@gmail.com
    - **Abstract**: This research deals with a special type of strategic decision in racing, where the outcome might depend on pacing strategies adopted by the athletes. Some pacing strategies might result in overtakes. A common situation in races is when two drivers are close to each other and both of them must decide when to go for a pit stop. We call an overcut the strategy of a pursuer when on one of the laps the leader stopped but the pursuer decided to stop later. The opposite strategy, an undercut, is the strategy of a

pursuer when they decide to stop earlier than the leader. It appears that the share of successful undercuts is higher than the share of successful overcuts. We construct game-theoretic model to investigate whether it is a general phenomenon. We estimate the parameters of the model by collecting official Formula 1 telemetry data for almost all races from 2018 till 2023.

12. Peter Dawson

- **Session – paper #:** A1-4
- **Title**: Workplace Environment and Productivity: The Case of Professional Darts Professional Tennis Players
- **Mail**: Peter.Dawson@uea.ac.uk
- **Abstract**: Workplace environments play a crucial role in influencing employee productivity and satisfaction. Working from home (WFH) has become increasingly common since the Covid-19 pandemic but the relationship between WFH and productivity is mixed. The current study contributes to the existing literature by considering professional darts. Darts was a sport that was able to adapt to the pandemic by creating competitions for elite professionals to WFH (competing online). Whereas previous work has looked at online versus in-person settings (such as Kiesel et al., 2021) or in-person settings with and without crowds (Bryson et al., 2021; Ferraresi and Gucciardi, 2021), this study, uniquely, is able to assess performance across three different settings: in-person with crowds, in-person without crowds and WFH. We find performance in tournaments where competitors competed from home has a negative effect on productivity and some evidence that the presence of crowds negatively affects the performance of players.

13. David DeBoskey

- **Session – paper #:** C2-1
- **Title**: Exploring the Multi-Dimensional Relationship between Performance and Salaries in U.S. Major League Soccer: A Comprehensive Analysis
- **Mail**: deboskey@sdsu.edu
- **Abstract**: This study delves into the intricate relationship between player performance and salaries in U.S. Major League Soccer (MLS), addressing a research gap by concurrently considering various performance dimensions. Utilizing exploratory factor analysis, six factors (including scoring quotient, playmaking quotient, and age-related performance quotient) are assessed based on the 2021-2022 MLS season data. The findings highlight significant positive relationships between player salaries and five of the six performance factors in our comprehensive model. Distinct patterns emerge for different attacking positions, underscoring the importance of diverse performance measures in salary determination. Notably, an inter-quartile increase in scoring quotient or age-related performance quotient corresponds to a salary difference exceeding half a million $USD. This study contributes valuable insights to sports management, aiding player evaluation, talent management, and team development in MLS, fostering fairness and accuracy in compensation decisions.

14. Paul Downward

- **Session – paper #:** E2-2
- **Title**: Sport participation, intersectionalities and policy priorities in England
- **Mail**: p.downward@lboro.ac.uk
- **Abstract**: Promoting sport participation in the UK is a central feature of sports policy because of the desirable outcomes that it can deliver. An important feature of the current strategy has been to re-emphasise the focus on inequalities and specifically to address the lower activity levels for women, those aged 75 and over, disabled people, people with long-term health conditions, and for some ethnic groups. What is lacking in the policy narrative is an understanding of the relative significance of these factors and how they might collectively influence participation. Drawing upon Becker's time allocation and social interaction theories, multi-level logit models are estimated based on Active Lives Survey data for traditional sports, health and fitness activities, leisure and travel-based cycling and leisure and travel-based walking in England. The collective importance of the intersectionalities of these sources of inequality are identified along with where more targeted policy could be directed.

15. John Eakins

- **Session – paper #:** E1-1
- **Title**: Compensating Tendencies in Disciplinary Sanctions: The Case of Hurling Revisited
- **Mail**: j.eakins@ucc.ie
- **Abstract**: This paper provides further evidence on the relationship between disciplinary sanctions and non-rule factors in hurling, the national sport in Ireland. Specifically, it examines whether a team is more likely to be awarded a free if they are behind on the scoreline or behind on the free count. It uses an updated and more recent data set based on games from the 2021-2023 All-Ireland Senior Hurling Championship. A comparison of results from using this data and results from previous research on an older set of hurling games (Eakins et al., forthcoming) is provided. The paper also applies a different methodological approach using minute-by-minute data to test for the robustness of the results. Preliminary findings using the existing methodology indicate the same compensating tendencies identified in previous research still hold. Results based on the new methodological approach produce similar findings, thus verifying the robustness of the compensating tendencies discovered.

16. Alex Farnell

- **Session – paper #:** B2-1
- **Title**: Uncertainty of Outcome in the WSL
- **Mail**: alexander.farnell@mu.ie
- **Abstract**: We investigate the role of match and seasonal uncertainty on attendances from 451 fixtures in the Women's Super League (WSL), the highest level of professional female football in England over the years 2018-2023. The work contributes to the understanding of the determinants of attendance in female sports and also to that of sports leagues which are in their infancy. Results from a standard attendance demand equation reveal that games where the home team is more likely to win (measured using betting odds) attract higher attendances i.e. a home win preference. Following Buraimo et al. (2022), we

construct a "match significance" variable to capture seasonal uncertainty. Results show that fans respond to important matches at the top of the table, but less so at the bottom. Other control variables (e.g. distance between teams, scheduling effects etc.) behave as expected.

17. Arne Feddersen

- **Session – paper #:** B2-2
- **Title**: Contest Outcome Uncertainty and Consumer Decisions: Evidence from European Football Leagues
- **Mail**: af@sam.sdu.dk
- **Abstract**: As pointed out by Coates et al. (2014) and Collins and Humphreys (2022), the empirical evidence on the UOH and its impact on stadium attendance is remarkably mixed. This contribution aims to address the uncertainty about the cause of this mixed evidence by employing a consistent model based on a larger number of European football leagues.

18. Raphael Flepp

- **Session – paper #:** B2-3
- **Title**: Suspense and Surprise in European Football
- **Mail**: raphael.flepp@business.uzh.ch
- **Abstract**: Literature on the uncertainty of outcome hypothesis (UOH) commonly struggles to find consistent support for the relevance of competitive balance (CB). We adopt a novel approach to CB by investigating trends in and factors associated with the entertainment utility derived from suspense and surprise. Using data from over 23,000 matches across the top five European leagues from 2010/11 to 2022/23, we first calculate suspense and surprise on a minute-by-minute level based on simulated outcome probabilities. We then aggregate these measures to derive suspense and surprise generated by each match. Preliminary findings reveal nuanced trends in suspense and surprise over time, varying across leagues and between top teams and others. These findings offer valuable insights for regulators and league organizers in European football.

19. Hiroaki Funahashi

- **Session – paper #:** C4-2
- **Title**: Impact of stadiums on residential land values: evidence from Japan
- **Mail**: h.funahashi@sass.chukyo-u.ac.jp
- **Abstract**: This study examines the impact of stadium construction on residential land values in Japan, analyzing data from 30 stadiums that were newly built or substantially renovated between 1995 and 2021. Using a local projection difference-in-differences approach, we find that parcels in close proximity to a new stadium experience an appreciation of approximately 5% higher compared to those evaluated before the opening. These intangible stadium spillovers diminish with distance and become more pronounced over time. In addition, we identify variations in the impact based on differences in stadium construction backgrounds. Event-centric stadiums, primarily built for hosting mega-sports events, show a temporary increase in property values, whereas team-centric stadiums, developed in alignment with urban development, demonstrate

sustained appreciation. Our study provides new evidence on the nationwide implications of stadium development in Japan, offering insights beyond single-case studies.

20. Sam Hoey

- **Session – paper #:** B1-2
- **Title**: Racial Discrimination in the Labour Market of English Football Managers
- **Mail**: s.hoey@liverpool.ac.uk
- **Abstract**: We track the post-playing careers of all professional football players who were active in the English top 2 divisions between 1990 and 2010 and ended their playing career by 2013. Out of 3420 individual players, we identify 544 (16%) as Black (or of mixed black heritage). Around 4% of Black former players eventually obtain a role as first team manager, whereas 11% of the non-Black former players progress to this level. Black former players face three significant impediments in their career progress: lower recruitment rates in junior managerial roles, reduced progression from junior to senior management, and a higher dismissal rate when in senior management. We document the importance of each of these in our sample. We also find that on-field achievements as a player do not alleviate these impediments for Black former players.

21. Benjamin Holmes

- **Session – paper #:** C4-1
- **Title**: Maximizing Utility: Integer Optimization Approach for Budget Allocation in Professional Football Clubs
- **Mail**: B.Holmes@liverpool.ac.uk
- **Abstract**: This paper presents an innovative approach to football squad management, focusing on talent acquisition and resource allocation. We emphasize accurate player ability estimation using a robust and effective data-driven model. While current performance remains pivotal, our framework integrates future player potential estimation and considers player availability influenced by past injuries and suspensions. The optimization framework maximizes the weighted average of current abilities and projected future potential, offering flexibility in customization. Financial constraints, Premier League regulations such as the Homegrown Players Rule, and squad balance considerations are essential factors addressed in our model. By incorporating additional constraints like squad age and wage parity, our approach enhances football squad management dynamics, fostering stability, cohesion, and strategic adaptability. We demonstrate the use of our framework by simulating various scenarios using different teams as case-studies, and also predicting the 2023/24 season using optimised lineups.

22. Brad Humphreys

- **Session – paper #:** C3-4
- **Title**: The Effects of Labor Market Conditions at Entry: Evidence from the NHL 2004-2005 Lockout
- **Mail**: brhumphreys@mail.wvu.edu
- **Abstract**: The 2004 NHL draft class faced negative labor market conditions at entry, because the NHL 2004-2005 season was cancelled due to labor disputes. Coupling coarsened exact matching with a novel dataset on NHL players, this paper investigates

how this impacted labor market outcomes of 2004 NHL rookies and finds heterogeneous treatment effects on European rookies and North-American rookies. 2004 North-American rookies were greatly harmed by the lockout, while 2004 European rookies might benefit from it.

23. Agustin Indaco

- **Session – paper #:** C1-2
- **Title**: Do Professional Athletes Choke When They Don't Have Time to Stop and (Over) Think?
- **Mail**: aindaco@andrew.cmu.edu
- **Abstract**: Previous research suggests that professional athletes choke when performing unopposed high-pressure tasks, such as taking penalty kicks. This article extends the literature by studying whether football players choke when they have an opportunity to score in open-play situations. In these situations, players do not have time to (over) think the consequences of their actions. We find that players consistently underperform relative to expectations when their team is down by one goal but perform to expectations when the game is tied.

24. Marcel Koch

- **Session – paper #:** A3-2
- **Title**: Abolition of the away goals rule in UEFA club football tournaments – The emerging consequences for the home team's and away team's offensive and defensive behaviour and the general goal scoring
- **Mail**: marcel.koch@org.rwth-aachen.de
- **Abstract**: Our research investigates the effects of abolishing the AGR from the 2021/22 season in the UCL and UEL stages as an incentive change, rooted in Lazear's (1989) sabotage model and Garicano & Palacios-Huertas (2005) related research on the productive/offensive and sabotage/defensive efforts. The AGR initially aimed to encourage offensive play by valuing away goals higher but resulted in defensive home strategies to not concede away goals and fewer goals. By examining this rule change as natural experiment, we evaluate shifts in teams' offensive and defensive behaviors without the bias towards preventing away goals, anticipating that home teams might adopt more offensive strategies. Our dataset from 2012/13 to 2022/23 reveals that after the AGR's removal, offensive efforts significantly increased, evidenced by more shots and attackers, especially in first-leg matches. Conversely, defensive efforts decreased, suggesting a shift in play styles towards more open and attacking football, without significantly altering general goal scoring.

25. Alperen Kocsoy

- **Session – paper #:** D2-1
- **Title**: The Impact of Patience on Tenure Duration of Football Managers
- **Mail**: alperen.kocsoy@durham.ac.uk
- **Abstract**: If Sir Alex Ferguson had embarked on his managerial career in Turkey, would he have been able to maintain his position for nearly three decades, as he did at Manchester United? This question may seem speculative at first glance; however, it serves as an entry

point into the broader discussion of how the patience level of societies affects the tenure of employment. This study examines the relationship between the patience levels of countries and the tenure time of managers by using data from football. By examining the tenure of football managers across different countries, this research not only offers insights into employment practices in sports but also tries to provide a broader understanding of how cultural and socioeconomic factors shape employment practices in various sectors. The analysis shows that the patience level of a country and the tenure duration of football managers are positively correlated. To examine if this correlation implies a causal link, I use two different instrumental variables for patience and find identical results. Moreover, a survival analysis, namely the accelerated failure time model, proves the findings.

26. Szczepan Kosciolek
- **Session – paper #:** C3-3
- **Title**: Assigning Important Tasks to Inexperienced Employees: Evidence from European Football
- **Mail**: szczepan.kosciolek@uj.edu.pl
- **Abstract**: The allocation of important tasks to inexperienced workers is a crucial managerial decision in organizations. Sports economics, particularly association football, provides an excellent laboratory to study the determinants of allocating tasks to inexperienced workers. In this study, we examine the determinants and consequences of assigning young and inexperienced players to the starting line-up of matches in the five biggest European football leagues: the English Premier League, France's Ligue 1, the German Bundesliga, Italy's Serie A, and Spain's La Liga. Using team-match level data from the 2010-11 to 2022-23 seasons, our preliminary estimation for the English Premier League indicates that the participation of young players becomes more likely when the squad is larger (due to more injuries and less experienced players arriving in January) and when the match is less important for the league title.

27. Michal Kowalik
- **Session – paper #:** A1-2
- **Title**: Weather to go to the stadium
- **Mail**: michal.kowalik@uni-tuebingen.de
- **Abstract**: Intertemporal decisions, such as the purchase of durable goods or tickets for future events, constitute a fundamental aspect of daily life. In theory, a rational individual, facing an intertemporal choice problem, maximizes the expected utility given the distribution of benefits and costs over time. In reality, however, individuals are prone to psychological effects and cognitive biases causing their intertemporal decisions to deviate from fully rational behavior. We contribute to the empirical literature using observational data to investigate such biases by exploring weather-related projection bias in the context of football ticket purchases and attendance with a unique dataset. The data at hand allow to cleanly identify individuals regarding both their purchase and their attendance decisions which has been a particular challenge in earlier studies. Importantly, and in contrast to other studies we observe these decisions multiple times for a comparably large portion of individuals.

28. Alex Krumer

- **Session – paper #:** B3-1
- **Title**: Targeted investment in elite sports: An empirical lesson from professional fencing
- **Mail**: alex.krumer@himolde.no
- **Abstract**:

Research question: This paper analyzes whether the probability of a higher-ranked fencer winning a match differs between epee, sabre, and foil, the three weapons used in professional fencing.

Research methods: We used data on 6743 men's and women's fencing matches from the 120 most prestigious fencing tournaments from the 2014-2015 to 2018-2019 seasons, including Grand Prix, World Championship, and Olympic Games. We used multivariate logistic regressions to compare the winning probabilities for the three weapons.

Results and findings: Among men, epee competitions were significantly more balanced than sabre and foil competitions, meaning that the higher-ranked fencers in epee had the lowest probability of winning. In the women's case, epee competitions were significantly more balanced than sabre competitions, but not significantly more balanced than foil competitions.

Implications: These results suggest that if a weaker fencing country wishes to enter the sport of fencing, it should prioritize epee competitions to increase the probability of sporting success. In fact, Qatar and Colombia have likely followed this targeted investment strategy, as these are the only countries without any Olympic fencing medals that decided to host Grand Prix epee competitions. Despite the differences between the countries at the senior level, their recent successes at the youth level in international epee tournaments are likely the fruits of previous investments.

29. Markus Kurscheidt

- **Session – paper #:** D1-2
- **Title**: Consumption culture of tennis event spectators: Survey evidence on ATP and WTA tournaments in Germany
- **Mail**: markus.kurscheidt@uni-bayreuth.de
- **Abstract**:
The worldwide highly relevant sport of tennis is substantially underresearched in sports economics. Therefore, this study presents results of a large (N=4,775) survey of German tennis live spectators at prestigious grass-tournaments, an ATP event in Stuttgart and a WTA event in Berlin. The sample covers five separate events over the period of 2021 to 2023. Given the lack of literature on tennis demand, the approach and questionnaire follow the broad concept of consumption culture to better understand the basic structures and motives on the demand side of tennis markets. However, the data preparation of the large and complex, clustered sample is work in progress. Regression analyses on the full data set will be presented at the conference. Yet, early results of cluster analyses of the 2022 sample evidence that four distinct types of tennis event visitors can be identified.

30. Mario Lackner

- **Session – paper #:** C1-1
- **Title**: Competitive pressure and rational decision making: Evidence from the NBA
- **Mail**: mario.lackner@jku.at
- **Abstract**: We use high-volume data from throwing attempts in professional basketball to investigate how competitive pressure does affect irrational risk-taking. Although the success rate decreases in the distance to the target, the three-point line in basketball provides a sharp discontinuity of how risky a throwing attempt is. If agents' decisions to throw from a particular distance were always fully rational, no throwing attempts just inside of the three-point line should be observed. We estimate that the intermediate relative performance (i.e., the intermediate score), as well as the pressure to perform due to the timing of the throwing attempt do play a crucial role in the decision process. Excessively risky attempts from just inside the three-point line are less likely when pressure to perform is high and teams face a score deficit close to the end of the game. Players seemingly make better decisions or "provide more mental effort" in these situations.

31. Antonio Llopis Gomez

- **Session – paper #:** A2-2
- **Title**: Uncovering Biases in Decision Making: Evidence from Video Assistant Referee use in football
- **Mail**: antonio.llopis@imtlucca.it
- **Abstract**: This paper examines the presence of biases in decision making during high-stakes situations. Using a database with penalties awarded from the 5 strongest football leagues after Video Assistant Referee (VAR) implementation, we look at the game context in the moment of the penalty decision and whether it is taken by the referee or suggested by VAR. We show that penalties are more likely to be suggested by VAR when they can change the winner of the game and time is running out. Our findings provide evidence of 'whistle swallowing', whereby referees avoid intervening at decisive moments. On the other hand, we do not find any tendency in favor of the home or away team in VAR intervention. Our results suggest that "whistle swallowing" may be more important than a potential "home bias" of referees when it comes to penalty decisions.

32. Jeremy Losak

- **Session – paper #:** E3-1
- **Title**: Hot Hand Effects: Analyzing MLB Starting Pitchers in Daily Fantasy Sports and Betting Markets
- **Mail**: jmlosak@syr.edu
- **Abstract**: We explore the presence of a "hot hand" effect among MLB starting pitchers and its implications for daily fantasy sports (DFS) and betting markets. The analysis suggests that recent pitcher performance tends to predict future performance, potentially indicating the existence of a hot hand effect, particularly within a short timeframe. This trend extends to DFS, suggesting that platforms incorporate recent performance but may not fully adjust prices based on pitchers' recent games. Moreover, we are the first to directly compare market efficiency between DFS and betting markets, offering insights

into streakiness among MLB starting pitchers and its relevance for bettors and DFS participants.

33. Julian Matthes
- **Session – paper #:** B4-2
- **Title**: The Strategic Benefits of Sending Your Friends Away: A Coopetition Problem in Professional Road Cycling
- **Mail**: julian.matthes@awi.uni-heidelberg.de
- **Abstract**: Road cycling races, although won by individual riders, are a competition of teams. Riding behind other riders significantly reduces the energy required to hold a given speed. These races thus provide free-riding incentives. We provide a game-theoretic framework of this strategic setup to investigate the impact of having an additional rider in the leading group or a chasing group on a team's winning probability and which group characteristics facilitate coordination. We complement our theoretical results with fixed effects regressions on results data from more than 40 seasons of professional road cycling races. Our model suggests that asymmetry in rider strength or team strength within a group is favorable for group coordination. Adding teammates to competing groups is never hurtful because it adds free-riding opportunities. We find empirical evidence that a teammate in a group behind has a positive impact on win probability, indicating that such effect indeed exists.

34. Vojtech Misak
- **Session – paper #:** A1-3
- **Title**: Weather and Soccer related aggression. Evidence from the United Kingdom
- **Mail**: misakvojtech93@gmail.com
- **Abstract**: This paper investigates how weather affects soccer related aggression. Using data from the four top leagues in the UK it examines aggression of two kinds: aggression (fouls) by players and violent disorder by fans. Based on the results, it seems that rising temperatures increase the number of fouls and yellow cards issued. Rain has a negative effect on the number of fouls. Only a small negative relationship was detected between temperature and the illegal use of pyrotechnics by fans.

35. Kaori Narita
- **Session – paper #:** D2-2
- **Title**: Quantifying the Contribution of Managers on Firm Success: The Case of Association Football
- **Mail**: knarit@liverpool.ac.uk
- **Abstract**: This study employs data from professional football leagues around the world to estimate individual managers' contribution to on-the-pitch performance, given the resources at hand. To measure a club's output, we adopt expected goals, which are less influenced by the randomness of outcomes than conventional measures. An individual club's production function relative to its opponent is estimated by means of a Bayesian hierarchical framework. The comparison of different specifications using players' quality based on their historical performance, home advantage, individual club's effects, and

individual manager's effects as covariates suggests that managers influence team production. In addition, our case study shows that individual managers can significantly impact the overall season outcomes. The best football managers are estimated to improve the league position of a team by up to 10 league places.

36. Galila Nasser
- **Session – paper #:** D1-1
- **Title**: Battle of the Sexes over Fans - Is Men's Soccer a Substitute for Women's Soccer?
- **Mail**: galila.nasser@uni-bielefeld.de
- **Abstract**: Attendance in women's soccer is on the rise in Europe, making it the most-watched women's team sport. Without massive financial backing from TV contracts, economic success heavily depends on ticket revenue. As women's matches are typically played on weekends, clubs face competition from men's soccer over fans' interest and potentially stadium attendance. Covering data from ten seasons in Germany's Women's Federal League (Frauen-Bundesliga), this article empirically tests if overlaps with men's soccer games have any adverse demand on women's soccer games.

37. Eoghan O'Neill
- **Session – paper #:** B4-3
- **Title**: Static and Dynamic BART for Rank-Order Data
- **Mail**: oneill@ese.eur.nl
- **Abstract**: Ranking lists are often provided at regular time intervals by one or multiple rankers in a range of applications, including sports, marketing, and politics. Most popular methods for rank-order data postulate a linear specification for the latent scores, which determine the observed ranks, and ignore the temporal dependence of the ranking lists. To address these issues, novel nonparametric static (ROBART) and autoregressive (ARROBART) models are introduced, with latent scores defined as nonlinear Bayesian additive regression tree functions of covariates. To make inferences in the dynamic ARROBART model, closed-form filtering, predictive, and smoothing distributions for the latent time-varying scores are derived. These results are applied in a Gibbs sampler with data augmentation for posterior inference. The proposed methods are shown to outperform existing competitors in simulation studies, and the advantages of the dynamic model are demonstrated by forecasts of weekly pollster rankings of NCAA football teams.

38. Sebastian Otten
- **Session – paper #:** B1-3
- **Title**: Racial Discrimination in the Labor Market: Evidence from Fantasy League Soccer
- **Mail**: sebastian.otten@uni-due.de
- **Abstract**: The empirical evidence on racial discrimination is limited, as in most economies, it is illegal for employers to discriminate against workers. To overcome the identification issue of the empirical literature and to examine racial discrimination in the labor market, we use data from fantasy league soccer. This data allows us to analyze a labor market where employer discrimination is legal and employers have access to detailed information on workers' (i.e., football players') productivity. To test for discrimination, we examine the workers' market value that employers must pay to hire

them. Applying a differences-in-differences strategy, our results indicate that in an environment where discrimination is uncontrolled, market values of non-white players are reduced by 13%. These findings suggest that taste-based employer discrimination against non-white players reduces their market value.

39. James Reade

- **Session – paper #:** B3-3
- **Title**: Economic and Social Turmoil and Football: Argentina 1931-1999
- **Mail**: j.j.reade@reading.ac.uk
- **Abstract**: We investigate attendance and gate revenue patterns in Argentina over seven decades of significant economic and social variation, and combine this data with wider information regarding violence at football matches in the country to understand more about football, its fans, and its relationship to economic and social events. We pay particular attention to the multiple hyper-inflationary episodes in the country in addition to considering the commercial impact of violence.

40. Kristoff Reichel

- **Session – paper #:** B3-2
- **Title**: Bumpy road to the UEFA Euro 2024? Survey evidence on German residents' perceptions in the run-up to hosting the event
- **Mail**: kristoff.reichel@uni-bayreuth.de
- **Abstract**: 18 years after the 2006 FIFA World Cup, Germany will once again have the chance to inspire its residents and guests by hosting the UEFA Euro 2024. The methodological approach of this study follows the pertinent research design of standardised online surveys, provided on several social media platforms. Based on tested operationalisations of previous studies on perceptions of event impacts and legacies as well as on spectator interest, a questionnaire was developed to measure the attitudes and preferences of the German residents, in the run-up to the event (N=503). It is found that, despite a high support of the UEFA Euro 2024 in Germany by the residents in the sample, the respondents largely expect more negative than positive impacts and legacies in the economic, social and environmental dimensions of sustainability. However, the residents seem to accept social costs for their individual welfare benefit of a good feeling.

41. Nick Riccardi

- **Session – paper #:** C2-2
- **Title**: NBA Player Types and Compensation
- **Mail**: nrriccar@syr.edu
- **Abstract:** Players in the National Basketball Association (NBA) are thought to be paid by their team for their contributions towards team success. Prior research has found that performance statistics such as points, rebounds, assists, blocks, steals, and fouls are determinants of a player's compensation. At the same time, the NBA has moved towards a positionless game through the rise of analytics. Therefore, there is a need to redefine traditional player positions into functional roles. Using hierarchical cluster analysis, players in the NBA from 2018-2023 are grouped together into nine different clusters using a variety of performance statistics. OLS regressions are conducted to test how different

performance statistics impact a player's salary as well as the effect that being a particular player type has on compensation. Results show that when controlling for performance, player types get paid differently.

42. Roberto Rondinelli

- **Session – paper #:** A2-3
- **Title**: Analysing football passing networks via generalized triad census
- **Mail**: roberto.rondinelli@unina.it
- **Abstract**: Network analysis can be employed to examine the hidden structure behind the passing distribution between players in team sports, offering additional insights into the tactics and strategies of the teams involved in a match. In football, the topological characteristics of the passing distribution, viewed as a weighted and directed graph, can also be analyzed using the triad census, which counts the interactions occurring among three players. However, the conventional algorithm is only suitable for binary (unweighted) networks, overlooking the heterogeneity present in the passing distribution of players. This work aims to introduce and assess the usefulness of a new algorithm, called "network peeling", designed to extend the triad census for weighted (and directed) networks. The algorithm relies on a nested sequence of binary sub-networks in which arcs are "peeled away" one unit at a time. First, we investigate through a simulation study whether the distribution of binary and weighted triad census exhibits a non-negligible difference depending on various levels of passing network density and variability of arcs weights. Then, the proposed approach's applicability is demonstrated through an in-depth analysis of real data from all matches of football clubs participating in the top four competitive European Football Leagues during the 2015-2016 season. Finally, we introduced a synthetic indicator to summarise the triadic information in a football passing network. We aggregate the counts of triads by using a weighting scheme based on the number of connections in each isomorphism class. We compute this measure by using different cutoffs on the weighted network of passes between players. The final indicator can be obtained by averaging the triad-based indicators for a given number of cutoffs. Using the same dataset mentioned above we show its applicability.

43. Giambattista Rossi

- **Session – paper #:** C3-2
- **Title**: Long term contracts & Productivity in a High Skilled Labour Market: Evidence from Professional Football
- **Mail**: g.rossi@bbk.ac.uk
- **Abstract**: Do longer contracts affect the performance of highly skilled workers in competitive labour markets? Answering such a question has been traditionally difficult due to some limitations, such as data availability and reliability and model misspecification. This work seeks to improve on the existing literature, employing professional football, as a case study. Using an unique dataset - that includes the universe of players in the Italian Serie A for 18 seasons - this study does not find any effect at the beginning of the new contract. This result goes against the existing literature on the field. Results are robust to using both parametric and non-parametric methods, as well as multiple performance measures, based on objective and subjective parameters.

However, the analysis reveals that longer contracts provide an incentive to perform better for young, migrant workers and those with medium levels of transfer market values.

44. Jane E. Ruseski
- **Session – paper #:** D3-3
- **Title**: Measuring the Relative Contribution of Exercise, Diet, and Socioeconomic Status to Obesity and Physical Activity
- **Mail**: jeruseski@mail.wvu.edu
- **Abstract**: The growing prevalence of obesity has dominated the attention of the public health arena for several decades. Many factors influence the prevalence of obesity including socioeconomic status (SES), diet, and physical activity in complex ways. Using data from the US National Health and Nutrition Examination Survey (NHANES), we extend Bilger et al. (2017) and evaluate the relative contributions of exercise and diet to the distribution of obesity and of socioeconomic status to the distribution of physical activity. We find heterogenous effects of SES on the gradients of obesity and physical activity. Diet and exercise also contribute to the obesity gradient. Excess carbohydrate intake has a negative effect on the obesity gradient whereas excess fat and protein intake positively impact the gradient. These novel findings deepen our understanding of the relative contribution of SES, diet, and exercise to the distributions of obesity and physical activity and inform public policy.

45. Felix Sage
- **Session – paper #:** C3-1
- **Title**: O Captain, My Captain? Empirical Evidence on the Importance of Captaincy in Soccer
- **Mail**: felix.sage@uni-due.de
- **Abstract**: The change of an individual holding team leadership responsibilities is a frequent and disruptive event in organizations. Such changes might influence the behavior of both the newly appointed leader and the team. In soccer, there is a common expectation that a team`s captain as a formal-transformational leader positively affects sporting performance. Despite this wide believe there is limited empirical prove. We investigate the effects of exogeneous changes of a captain on the individual and the team's effort and performance as well as outside observers' evaluations. To test our hypotheses, we utilized individual soccer player data (N = 766) from 2,448 Bundesliga games during eight seasons (N = 48,263 player-game observations) and changes in leadership. Yet, we found that neither the newly appointed team captain nor the team itself showed higher objective effort or performance after the succession event. Nevertheless, experts rated the newly appointed team leader as demonstrating superior performance.

46. Steven Salaga
- **Session – paper #:** A4-3
- **Title**: Strategic Leader Combinations: Expert Leadership, Executive Alignment, and Organizational Performance
- **Mail**: salaga@uga.edu

- **Abstract**: We advance the literature on expert leadership by identifying a setting where all industry firms produce the same product and use the same organizational structure where two key executives "a strategic leader combination" determine and implement the organization's strategic approach. Using longitudinal data from the National Basketball Association, we assess whether the technical expertise of both the operational-level (head coach) and lead executive (general manager) hold as a significant determinant of firm performance once accounting for the impact of the other executive and the match between the two executives. Results indicate operational-level executive (head coach) expert leadership is a positive and statistically significant determinant of firm performance even after controlling for lead executive (general manager) expert leadership and the expert leadership match between the two executives. Alternatively, lead executive expert leadership and the expert leadership match within the executive combination are not statistically significant differentiators of firm performance.

47. Luis Carlos Sanchez Martinez

- **Session – paper #:** C4-3
- **Title**: Pay or not to pay: football fan behavior in Pay-what-you-want pricing policy
- **Mail**: luiscarlos@uniovi.es
- **Abstract:** The prices are frequently fixed and established by sellers. Recent initiatives of participatory price setting have emerged as the concept of "Pay-What-You-Want" (PWYW), which involves the complete delegation of the authority to establish prices to buyers. Literature usually studies the willingness to pay for football through surveys, PWYW offers the opportunity to test the actual interest of customers. Two Spanish clubs decided to introduce PWYW pricing in season 2021/2022 in the matches played between them: Unionistas de Salamanca and SD Logrones. Firstly, an analysis will be made of the distribution of prices paid and its elasticity. Secondly, data from survey will give us information of main variables influencing in the price paid. Moreover, we will try to identify the motivations of the voluntary price paid. At the end, a comparison will be made with the data from the matches with fix price.

48. Mary-Elena Sanchez-Gabarre

- **Session – paper #:** A3-1
- **Title**: The effect of closed doors on home advantage by division and gender in professional basketball, football and handball
- **Mail**: mary.e.sanchezg@udc.es
- **Abstract**: Home advantage is a well-established fact in sports economics. However, the effect of public attendance on home advantage has been very different. Some teams have played with closed doors due to sanctions, but the number of these game was not high enough to make causal estimates. COVID-19 provided such a natural experiment since in the season 2020-2021 all the games in professional football, basketball and handball in Europe were played with close doors. This article aims to measure the effect of public attendance in the home advantage by comparing the seasonal home advantage at team level with public attendance and without public attendance in a kind of regression discontinuity design. The novelty of this paper is that it compares the effect of public

attendance on home advantage in different team sports: basketball, handball, football; in male and female and in the Male First Division with the Male Second Division.

49. Martin Schnitzer

- **Session – paper #:** D3-2
- **Title**: Enduring Legacies? The Impact of the Innsbruck Winter Olympics 1976 on Sports Participation and Long-term Health
- **Mail**: martin.schnitze@uibk.ac.at
- **Abstract**: This paper tries to fill this gap by examining sports participation and health legacies of the WOG held in Innsbruck in 1976 (WOG76). Our analysis is conducted in two steps: First, we provide preliminary evidence that the WOG76 led to an increased sports participation in the host region compared to other Austrian regions. Second, we turn to the host region in the 2010s and examine the impact of the event on the current health status and subjective well-being of the birth cohorts that we find to be primarily affected by the event.

50. Adrian Simion

- **Session – paper #:** C2-3
- **Title**: Does it pay to win? The relationships among spending categories and team performance in women's college basketball
- **Mail**: amsimion@syr.edu
- **Abstract**: The persisting disparity between spending on men's and women's college sports has received renewed attention in recent years. Thanks to greater efforts for financial transparency in college sports, we are beginning to gain access to new and more granular data than ever before. Looking at women's basketball, we analyze the impacts that these specific spending categories have on team performance. We identify unique and specific effects from expense guarantees, team travel, and spending on facilities, on team win percentages.

51. Robert Simmons

- **Session – paper #:** C2-4
- **Title**: Peer Effects on Pay in the National Football League
- **Mail**: r.simmons@lancaster.ac.uk
- **Abstract**: This paper investigates whether players in the National Football League are rewarded not just for their own performances but for performances of teammates. Using a sample of over 1000 player-seasons for secondary defensive NFL players 2014-2023 we find that this is indeed the case.

52. Carl Singleton

- **Session – paper #:** E1-2
- **Title**: Can Awareness Reduce (and Reverse) Identity-driven Judgement Bias? Evidence from International Cricket
- **Mail**: carl.singleton@stir.ac.uk
- **Abstract**: Competition is often judged by official decision makers, such as judges, juries, and referees. Systematic bias in those judgements, frequently related to social identities,

may have undesirable effects. We investigate whether raising awareness can correct or even reverse such bias. We use a natural experiment from international Test cricket to focus on the match umpires and their decisions. Previous research has found evidence of biased judgements favouring the home team when the umpires shared the same nationality. Policy makers solved this by employing neutral country umpires. From June 2020, home umpires temporarily returned, sometimes in empty stadiums, because of the COVID-19 pandemic. We argue that these umpires were then under substantial scrutiny, due to the previous bias being well-known and highlighted in the media, alongside a technology-driven decision review system. Through a behavioural model, we show that such circumstances may result in the in-group judgement bias being eliminated or reversed. We find no evidence of the historical bias in umpire judgements returning during the pandemic. Instead, we find over-compensating behaviour, with a pre-pandemic home team advantage of 26% in the frequency of subjective and difficult 'leg before wicket' decisions being eliminated by the return of home umpires. Tight decisions tended to go against the home team more frequently when home umpires were officiating. We conclude that awareness not only has a long-term effect on eliminating identity-driven judgement bias but also may reverse it against the in-group.

53. Andrei Smirnov
- **Session – paper #:** D2-3
- **Title**: Striking Success: How Goals Shape Coach Bias in Football
- **Mail**: adsmirnov@nes.ru
- **Abstract**: This study investigates the impact of different types of goals on coach bias in football team selection. Analyzing short-term factors such as decisive goals, away goals, and goals before halftime, we explore how these influence squad selection for the next match. Using Propensity Score Matching & Nearest Neighbor Matching, and a dataset spanning major European leagues, we find that scoring a decisive goal increases the likelihood of a player being included in the starting lineup by approximately 3%, suggesting coach bias. Further analysis reveals nuanced effects based on player positions and club strength, with defenders showing a notably significant positive effect for scoring decisive goals. Interestingly, weaker teams exhibit a stronger bias. Our findings highlight the importance of understanding coach decision-making and its implications for team performance, offering valuable insights for football management. This research sets the stage for further investigation into coach bias and its ramifications for the sport.

54. Hendrik Sonnabend
- **Session – paper #:** A2-4
- **Title**: The Napoleon complex revisited: New evidence from professional soccer
- **Mail**: hendrik.sonnabend@fernuni-hagen.de
- **Abstract**: This study investigates the 'Napoleon complex' within the context of expert evaluation in professional football. Examining 2,340 matches from the German Bundesliga spanning the 2014/15 to 2021/22 seasons, with 51,480 player-match observations, we explore how the relative height difference between players and referees affects sanctions. We find that the probability of a player receiving sanctions increases by 8.27% for fouls (9.21% for yellow cards) when the size difference between player and

referee (relative to the referee's height) is in the top quartile. This height bias is more pronounced at the start of the match when the umpire's style of refereeing is revealed to the players. Team and player market values moderate the bias, while experienced referees exhibit resilience. The findings underscore non-performance-related factors influencing referee decisions in high-stakes situations.

55. J.D. Tena
- **Session – paper #:** A3-3
- **Title**: Replacing the away goal rule: Intended or unintended consequences?
- **Mail**: jtena@liverpool.ac.uk
- **Abstract**: Using data from 1,704 two-legged fixtures played in UEFA competitions, we test for whether scrapping the away goal rule in fact produced more goals and, if so, in which leg did the additional goals appear and whether by the home or away team. We do so by employment of a model which includes a measure of the strength of the two teams, thereby enabling testing of whether the incidence of additional goals varied according to the competitive balance of the match-up. We also investigate whether the reform affected the relative chance of progression of the team which was randomly allocated to host the first of the two matches. Finally, we consider progression chances conditional on the result in the first of the two legs, looking for differences from before in the implications of particular scorelines for the balance of advantage of the two teams going into the second leg.

56. Igor Tylkin
- **Session – paper #:** A4-1
- **Title**: Does the strongest or the weakest player determine team performance? Testing the O-ring theory using data from composition of CS:GO teams
- **Mail**: Tylkin@europa-uni.de
- **Abstract**: The O-ring theory conceptualizes a production function where several tasks are performed by employees with different ability levels to complete production. The study aims to empirically verify this theory using team compositions and productivity (match results) data from the esports discipline Counter-Strike: Global Offensive (CS:GO). We investigate whether differences between the abilities of the strongest players or the weakest players determine teams' results. All CS:GO games for the period 2012-2023 are collected from HLTV.org. The final dataset includes observations from 98,728 games between teams. Linear, PPML, and logit regressions are used for empirical analysis, as well as more advanced data analysis tools like elastic net regression and random forest. The difference in the level of the weakest players of the CS:GO team is more important for predicting the final result of the game than the difference in the level of the strongest players.

57. Jan van Ours
- **Session – paper #:** E3-2
- **Title**: Non-transitive patterns in long-term football rivalries
- **Mail**: vanours@ese.eur.nl

- **Abstract**: The phenomenon of non-transitivity in outcomes, typically observed in non-effort games with predetermined probabilities and immediate clarity, extends to team-based, time-consuming games requiring effort that unfold over several decades. This study explores this aspect through an empirical analysis of professional football matches in the Netherlands involving three prominent teams: Feyenoord, Ajax, and PSV. Contrary to conventional expectations, the results reveal a non-transitive pattern over the extended period, indicating that Feyenoord is more likely to triumph over PSV, PSV over Ajax, and Ajax over Feyenoord than the reverse scenarios.

58. Jingwen Yu

- **Session – paper #:** B4-1
- **Title**: Facial Structure and Performance in Competitive Environments: Evidence from Male Professional Tennis Players
- **Mail**: yujingwen@bfsu.edu.cn
- **Abstract**: In this article, we identify an objective facial structure that predicts performance in men's professional tennis: the facial width-to-height ratio (fWHR), which is the ratio of the distance between the left and right zygion to the distance between the brow and upper lip. FWHR serves as an honest signal of dominance. Players with a higher fWHR score more points and outperform other players in service games. The positive fWHR-performance association is more pronounced as the level of competitiveness increases. This association is also strengthened if the player comes from a high-income country or a country characterized by a culture of masculinity or individualism. Ultimately, players with a higher fWHR achieve success by winning more matches and earning higher prize money, owing to their superior performance in scoring and service games.