ERNC22

Esports Research Network Conference

# BOOK OF ABSTRACTS

**21-23 November 2022**

## #ERNC22

**Esports Research Network Conference**

# Sustainable Esports in the Digital Society

**Jönköping, Sweden**

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Jönköping University, Jönköping International Business School

MMTC Media, Management and Transformation Centre

ESL FACEIT GROUP

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# Foreword

Esports is truly a part of the modern digital society. While definitions, classifications and valuations will be debated ad nauseum, the continued impact of esports as an integral component in the world's largest entertainment sector cannot be denied. Despite recent massive growth and a surprisingly long history, esports remains both a nascent research topic and a relatively new industry. Esports increasingly influences the worlds of sport, technology, business, and culture through it's innovative, digital, and pervasive nature. Yet it still grapples with a fragmented ecosystem driven by a multitude of passionate and driven actors, all seeking a sustainable future. As a global phenomenon with a growing youthful audience, it is increasingly important that esports builds a future based on the key pillars of sustainability: economic, social, and environmental.

As such it was appropriate for the first in person ERN conference to be hosted by the Media, Management and Transformation Centre (MMTC) at Jönköping International Business School (JIBS) in Jönköping, Sweden. As a research centre, MMTC focuses on the impact of digitalization, sustainability and globalization on industry and business renewal. JIBS is one of Europe's leading business schools, offers one of the world's leading master's in management programs and is driven by a focus on sustainability. Through being in Jönköping, the 'City of DreamHack', the conference was a place for researchers and industry to connect, at the conference itself and at the world's largest digital festival, DreamHack Winter 2022.

ESL Faceit Group (EFG) and their CSR initiative #GGFORALL were the main sponsors for the event. Not only through funding but also through providing engaging speakers and generous access to attendees at the subsequent festival. Further sponsorship by Destination Jönköping and Jönköping Municipality underlined the commitment of the region to a sustainable esports future. Ubisoft demonstrated their commitment to the science of esport by being a sponsor of the conference for the second year running. The sponsorship by Swedish grassroots organization, Esport United, underlined that esports truly is important for everyone. I would like to thank all the sponsors for their support in hosting what truly was a memorable and successful event.

What made it a success was the attendees. Since the last conference we have gone from over 200 members to over 400. This was reflected in over one hundred guests from academia and industry attending in person to provide a wonderful week of engagement. A total of 56 abstract were presented over ten tracks covering a multitude of topics. These are presented here and in line with ERN goals, we encourage you to reach out to any authors whose work you find interesting. Thank you to the track chairs for their work in facilitating these interesting sessions. I would also like to thank the science and organizing committees for their work, in particular Philippa, Sara, Prince, Ben and Tobias.

As 2022 ends, we start 2023 by welcoming new board members Usva, Maria, Yaewon, Tom and Joanne. We would like to thank our outgoing board members Maria, Steph and Craig, for all their efforts in building ERN to this point. ERNC22 was truly #GGFORALL. I am truly grateful, as conference chair and ERN vice chair, to have met so many wonderful people in person and feel so confident that we are building something special. So, for 2023?

GLHF

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# Track: Sustainability in Grassroots, Business and Environment

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This track approaches the main conference theme 'Sustainable Esports in the Digital Society' from the perspectives of social sustainability, economic sustainability, and environmental sustainability, in various areas of esports organisations and activities, from grassroots to businesses. All the papers present fascinating examples from specific local contexts.

Following the topic of social sustainability, in their paper 'Sustaining Esports Through Internet Cafes in Turkey', Onder Can and Maxwell Foxman examine how internet cafes in Turkey become politicised spaces where existing norms are challenged and reproduced through esports. In their paper 'Esport United: Understanding Swedish Grassroots Advantages and Challenges', Martin Eliasson Borg, Brian McCauley, Dejan Nedic, and Lorenzo Gonzalez demonstrate the role of grassroots esports organisations in developing sustainable national esports ecosystems and markets through the case of a Swedish organisation Esport United. In their paper 'Sustainable Grassroots: Tensions, Expectations and Recommendations in Formalizing Collegiate Esports', Maxwell Foxman, Amanda Cote, Andrew Wilson, Onder Can, Jared Hansen, Brandon C. Harris, Md Waseq Ur Rahman, and Tara Fickle investigate existing challenges in the processes of formalising collegiate esports organisations in the United States and present recommendations for building more sustainable esports organisations on various levels.

In the area of esports business and economic sustainability, in their paper 'Sustainable Esports Through Building an Accessible Platform for Participation', Brian McCauley, Viktor Erlandsson, Max Wolffsohn, and Martin Funck describe challenges grassroots esports actors face when aiming to grow their participation and build a socially and economically sustainable organisation. Jenna Turpeinen and Anna-Greta Nyström examine toxicity in *League of Legends* and its connection to sponsor brand image in their paper 'The Impact of Perceived Toxicity of League of Legends Among Players and Non-Players on Sponsor and Brand Image'. In their paper 'Professional Streamers: Exploring the Ridge Between Entrepreneurial Success and Mental Distress', Norbert Steigenberger and Leona Achtenhagen examine streaming as an

entrepreneurial activity, focusing both on the preconditions of success and failure as well as the physical and mental well-being of streamers.

On the topic of environmental sustainability, in the paper ‘Esports Events Environmental Sustainability: Carbon Footprint Estimation of the 2022 Gamers Assembly’, Nicolas Besombes investigates how esports events can decrease their carbon footprint and increase their environmental sustainability through a case study on the largest LAN event in France, Gamers Assembly.

# Sustaining Esports Through Internet Cafes in Turkey

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**Keywords:** Esports, infrastructures, Internet cafes, ethnography, interview, esports fans, aspiring esports athletes, gaming culture, Turkey.

## Theoretical Background and Literature Review

Esports has long been characterized by its dependence on global information and communication technologies (ICTs) which are also claimed to democratize the broader ecosystem (Jenny et al., 2018; Taylor, 2012). However, competitive gaming's reliance on material assemblages is reflective of the underlying inequalities (and opportunities) inherent in infrastructures at large (Acland et al., 2015; Anand et al., 2018) and telecommunication infrastructures in particular (Aouragh & Chakravartty, 2016; Can & Foxman, 2021). With this research, I show how internet cafes in Turkey sustain and reinforce neoliberal modes of play in the fragmented esports ecosystem (Nyström et al., 2022). Through interviews with esports fans and aspiring professionals, I first analyze the reproduction of gendered, meritocratic, and toxic playbor practices. With participant observation, I then show how internet cafes become political spaces as material extensions of communication infrastructures where the infrastructural lack in the country is challenged and utilized for a sustainable esports.

Understood "[a]s essential a component of ICT infrastructure as regulations, industries, and material conduits" (Harris, 2015, p. 206), internet cafes are foundational spaces in the emergence and ongoing maintenance of esports by providing the necessary technologies, know-how, and its surrounding culture. Also known as PC bangs, cybercafes, or netcafes internationally, Turkish internet cafes have been historically understood as techno-social spaces (Binark et al., 2009) where communities with lower socioeconomic status (SES) can engage with information technologies.

Today, internet cafes are rebranding themselves as esports venues within the growing esports industry. This shift in orientation helps cafes to sustain the industry. Local area network (LAN) tournaments are regularly organized by communities – which are at times sponsored by local, national, or international companies. Similarly, the cafes enable dedicated practicing spaces (a room with only 5 computers) where amateur teams can work on their communication and strategies in isolation.

These also reveal issues of governance and institutionalization in the fragmented esports ecosystem. Located in different parts of the city, internet cafes cater to different gender, race, and SES groups where young people form their own subcultures and socialize without parental pressure and guidance. Hence, internet cafes have long been regulated regarding their location, operating hours, and necessary software to run to administer the internet usage (Yesil, 2003). Internet cafes have long been a focus of social sustainability.

**Research Questions or Objectives**

I explore how esports are made possible given their dependence on internet cafes in Turkey. Specifically, I ask, how do esports athletes, aspiring professionals, and esports fans make use of the internet cafes given the autonomy provided by the fragmented esports ecosystem? I examine the cultivation of esports culture as fans gather to watch their friends, aspiring professionals compete, and future streamers try to consolidate their fanbase.

As communities ensure social sustainability given an infrastructural lack, I also demonstrate how they form collectives of political dissent. I argue that understanding social sustainability in esports is dependent on understanding the politicized nature of the youth culture forming around communication infrastructures.

**Method or Proposed Method**

As part of an ongoing dissertation project, I will conduct semi-structured interviews with internet café patrons. Questions will concern their everyday practices related to esports. I will also collect information regarding participants socioeconomic conditions, hopes, and ambitions as it relates to the growing industry of esports.

I will also conduct participant observation focusing on esports related events. I will explore how the staff make events possible, athletes compete, and fans participate. I already have

connections with aspiring professionals who utilize certain internet cafes as venues to practice as teams. Focusing on internet cafes in different neighborhoods catering to different socioeconomic groups, I will explore how an "incomplete industry structure" (Nyström et al., 2022, p. 12) sustains various forms of esports participation. Within a grounded theory approach (Strauss & Corbin, 1990), I will demonstrate how ICTs cultivate political subjects in Turkish esports ecosystem within the material organization of internet cafes.

## Conclusions

With this research, I explore the ways in which communities in Turkey make use of the lack of infrastructures given the fragmented esports ecosystem. I show how internet cafes become politicized spaces as part of global communication infrastructures where existing norms are challenged and reproduced through esports.

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# Esport United: Understanding Swedish Grassroots Advantages and Challenges

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Esport United is a Swedish non-profit organization that funds and supports grassroots esports. We fulfill an important role in developing a sustainable Swedish esports ecosystem. Our mission statement is that we want to make sure that young people all over Sweden have the opportunity to engage in esports. Through building and developing a safe, healthy and welcoming grassroots ecosystem we can provide a platform for future economic health in the future digital economy where esports will act as a central component. While we seek to act as enablers for the next generation of professional athletes and stars, we also want to provide a basis for others interested in engaging in gaming and esports in a variety of professional roles.

With 25,000 members we are the largest esport directed national association in Sweden. Our main focuses are to lower the boundaries for youth to start participating in esports in a safe and healthy environment. But we also have a strong focus on gender equality within gaming and the mental health of gamers. A key responsibility of Esport United is to manage and allocate funding to smaller grassroots organizations that fulfil a variety of roles within the Swedish esports ecosystem. Taken together the total memberships of all orgs is approximately 100,000 representing 1 in 25 of the Swedish population within the age range. Of the 15 organizations

currently working with us there are a variety of approaches that address relevant issues relevant to sustainable esports.

For example, Prima Esports believes in building a fair and inclusive community, open to everyone with a core focus on working against alienation and bullying and increasing gender equality. Birdie Lan, Sweden's oldest LAN party in Uppsala, attracts thousands of participants and visitors to their annual event in order to maintain and pass on their culture of community and acceptance. And we support many tournament organizers that focus on specific esport titles and their associated communities for example; Starcitizen Sverige (Star Citizen), One Gaming Group (Call of Duty) and Svenska Online Ligan (League of Legends). Organizations such as Boberg Esportförening, coach and develop competitive youth teams in CS:GO, bringing teams to compete at events such as DreamHack. We support these organizations in a variety of ways. Often this can be through helping passionate gamers to formally establish themselves with both funding and guidance. We remove barriers to access through providing equipment such as PCs and monitors but also assist in gaining further external funding as organizations grow.

Sweden Esport United was founded in 2009 as a national organization through funding from the Swedish Agency for Youth and Civil Society (Myndigheten för ungdoms och civilsamhällesfrågor, MUCF). This reflects how Sweden has a tradition of an independent civil society rooted in popular movements and organizations. As esport is not considered an official sport in Sweden our funding is granted as part of culture within society. We maintain open dialogues with national associations that seek to access further funding through achieving recognition of esports as sport on a national level. As with many countries, funding for supporting what has become a central component of youth culture has not kept pace with the growth of the industry. While we realize we are fortunate to have the support we do in Sweden we also face similar challenges to others and welcome discussions on how to address topics such as;

- Legitimizing esports within wider traditional society
- Motivating youth to engage in the processes to establish new organizations.
- Developing accessible spaces for esports and gaming in more local or underporvelages areas
- Using esports as a platform to encourage positive online behavior in our future cyber-citizens

Within esports areas such social health, mental health, diversity and inclusion are important in maintaining social sustainability which in turn is connected to an ultimate economic sustainability (Nyström et al., 2022). We view the work we do at Esport United as an important part of the Swedish ecosystem, particularly given the important role Swedish grassroots actors can have in shaping and developing healthy esports markets (McCauley et al., 2020). We hope that we can continue to engage with researchers and commercial partners in order to continue to foster sustainable esports as it increasingly influences modern society.

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# Sustainable Esports Through Building an Accessible Platform for Participation

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Esports has a longer legacy than most cities in Jönköping the 'City of DreamHack' resulting in a regional market driven by local actors and institutions (McCauley et al., 2020). One of these actors is Phoenix Blue, a non-profit association whose activities revolve around esports and digital culture. Phoenix Blue was founded in 2017 with the goal of growing Swedish esports from the ground up through focusing on the younger next generation. All of those involved have one thing in common: We love esports, and we want to do everything we can to help more of the Swedish youth to take part and grow within the space. The local municipality has an awareness and engagement with esports that is beyond most other cities (McCauley et al., 2020) and Phoenix Blue organization represents a collaboration with Jönköpings kommun through funding. This funding is based on the amount of activities we facilitate for young people aged from 7- 25 years. Jönköping Kommun also provides the club with financial support when it comes to expenses such as rent or other yearly fees connected to the facilities. The kommun also gives 50% financial support when the club invests in new computers or other material for club activities or the venue.

Local actors in Jönköping co-create value through efforts to innovate and shape the local esports market (McCauley et al., 2020). Phoenix Blue's mission is rooted in a sustainable esports

environment that is part of the modern digital society. We seek to achieve this in a number of ways. The venue represents where we co-create value through socializing and practice (McCauley et al., 2020). Originally located outside the city center in Huskvarna, our current space is now located at the Science Park next to the university. This represents a collaboration with Jönköping University through sharing the space with JUSTICE (Jönköping University Student Team in Competitive Esports) which is in line with our goal to promote engagement with esports. We host gatherings at our venue, where local youth can come and try out the most popular games on hardware, they might not be able to have at home for one reason or another. This reflects the barriers to esports that have been labeled 'a sport of privilege' (Pizzo et al, 2022) where access to technology and internet is often a barrier across regions but also socio-economic classes.

A big part of what we do with youth is to build the culture and values of esports from the grassroots up (McCauley et al., 2020). We provide guidance on performance through a focus on the practice of esports as a sport but also on behaviors, culture and communication skills needed for a healthy sustainable community of gamers.

We assist other associations and commercial actors with cutting-edge expertise regarding competitive gaming and live broadcasts in the context of esports. We host live productions of both small-scale and major events and organize competitive tournaments within the biggest esport titles. In particular we are Sweden's largest tournament organizer for the Nintendo game franchise Super Smash Bros. This franchise represents a case of 'user entrepreneurship' as the competitive scene was developed by the grassroots community in the absence of involvement from the publisher (Koch et al., 2020). Our role in a sustainable esports ecosystem is legitimized through working with Jönköpings kommun and existing within municipality protocols.

However like most grassroots organizations we still face a number of challenges and as with many the recent Covid pandemic has further impacted our work. We view growth through increases in membership and participation as key to our sustainable future. Issues that affect this and that we look forward to discussing include:

- Addressing issues of legitimacy and educating older generations of parents who may not see the value in what we do.

- Activating younger generations to see the value in real world interactions around esports to drive physical in person engagement and consolidate esports participation as part of the civil youth society.
- Leveraging assets to activate new revenue streams and allow us to increase our value offerings.
- Helping democratize participation of esports and remove barriers to entry by providing access to the infrastructure for organized play.
- Activating and encouraging more marginalized groups such as females, LGTBQA+, those with disabilities and immigrants.

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# The Impact of Perceived Toxicity of League of Legends Among Players and Non-Players on Sponsor and Brand Image

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**Keywords:** Esports, League of Legends, toxicity, brand image, sponsor brand image.

League of Legends (LoL) is a computer strategy game, a so-called multiplayer online battle arena (MOBA). LoL counted over 180 million players in April 2022, which makes one of the most popular MOBAs, thirteen years after its introduction by Riot Games. LoL features two teams with the aim of destroying the other teams' base. While LoL has attracted researchers' attention from various disciplines, e.g., performance analysis (Novak et al., 2020), the role of the individual in team performance (Maymin, 2021) and gender disparity (Ratan et al., 2015), toxicity is a poorly researched topic in the context of LoL. According to Hayday and Collision (2020) toxicity in virtual spaces is defined as when a player uses disrespectful language with the intention to humiliate or insult another player. Sengün et al. (2022) found correlations between the change in vocality and toxicity depending on which champions a player play, i.e., playing a champion which is perceived toxic might increase toxic behaviour. The game has over 140 unique *champions* to choose from, and five different roles to play in each team. The roles in the game are *Attack damage carry (ADC)*, *Support*, *Mid Laner*, *Top-Laner* and *Jungler*. Different champions are more suitable to certain roles, but one can play whichever champion, in whichever role (League of Legends, u.d.).

In addition, toxicity seems to especially target women in different gaming communities (Chess & Saw, 2015). LoL has tried to decrease toxic behaviour through *flagging*, which means that players themselves act as moderators and are thus able to report another player who they perceive to behave toxically in a game or chat. Nevertheless, flagging can be misused (Kou & Gui, 2021), and is thus in need of more attention among scholarly academics. The question remains: how do players and non-players perceive toxicity in LoL and which consequences do these perceptions have on a sponsor's brand image? If a game is perceived as highly toxic, there

is a risk of brands averting from sponsoring and/or marketing in a particular game genre. Researchers such as Freitas et al. (2020) have already shown that sponsoring esports can have positive effects on a sponsors' brand. The results, nevertheless, depend on many different variables, which we aim to explore in this work-in-progress paper.

The aim of the paper is to explore toxicity in LoL from both players' and non-players' perspectives to gain a deeper insight into how toxicity unfolds and manifests itself in this context. Furthermore, we aim to investigate the link between toxicity and sponsor brand image in LoL. The research design is based on a mixed method approach, including both qualitative (interviews) and quantitative data (survey). Data collection will cover three different sources: (a) players of LoL, (b) non-players of LoL, and (c) selected sponsors of the game. The three data sets allow for triangulation to reach an elaborate result. The data collection will be conducted in 2022.

Our study is based on a set of initial hypothesises. Hypothesis A (HA) is that the in-game behaviour of the community consisting of LoL players is perceived to have traits of toxic behaviour or that they behave toxically in game, and that this perception is supported both by players and non-players of the game. Hypothesis Aa (HAa) states that the community's in-game behaviour is perceived as toxic only by players of the game and not by non-players. Hypothesis Ab (HAb) states that the community's in-game behaviour is perceived as toxic only by non-players of the game, and not by the players. If HA (or HAa or HAb) is true, the need to examine whether sponsors of LoL perceive that their reputation may be damaged due to the perceived toxicity of the community becomes relevant. If HA is true, the question arises whether the players of LoL and non-players have a negative conception of the sponsors in the context. There is thus a possibility for hypothesis B (HB), stating that the players and non-players perceive that toxicity affects their opinions of a sponsor negatively. If HB is true, a set of guidelines for sponsors will be drafted as an outcome of the paper. These guidelines will help sponsors to improve their brand image when continuing to market through LoL. Sponsors will also be asked if they already have tried to affect the perceived toxicity through their marketing, i.e., if they have tried to enforce a more friendly and positive attitude in the community through marketing and promoting.

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# Esports Events Environmental Sustainability: Carbon Footprint Estimation of the 2022 Gamers Assembly

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**Keywords:** Carbon footprint, environment, sustainability, transportation, esports event.

## Theoretical Background and Literature Review

Although esports has existed for at least two decades, its sustainability is still vulnerable, as we are reminded by the different crises it is going through, especially economic ones (Besombes & Jenny, 2022). If the esports industry has been growing for more than ten years now, it remains a volatile and unstable sector.

It is impossible today to ignore the major ecological crisis that the entire world population is facing. If academic works have already seriously underlined the negative impact of digital infrastructures and video games (Morley, Widdicks & Hazas, 2018), little is known about the impact of the esports sector on the environment (Nyström et al., 2021). Esports stakeholders will not be able to ignore this challenge indefinitely and the question of the infinite growth of the sector thus becomes a questionable issue (Scholz, 2019).

## Research Questions and Objectives

To lay the first foundations of a more sustainable esports, aware of its impact on the environment, the association France Esports has chosen to conduct a first exploratory study to estimate the carbon footprint of the largest French LAN: the Gamers Assembly in Poitiers (1349 registered players, 442 volunteers, 14260 visitors and 153 partners in 2022). The objectives are both to raise awareness among the esports communities through communication on the subject during the event, but above all to enable the launch of initial reflections and action plans on the subject. Given the novelty of the experiment and the limited time available for its implementation, it was decided to limit the scope of the analysis to players, staff and volunteers (i.e., a population of 1,944 people), and to estimate the carbon footprint of the event on the theme of mobility only (i.e., travels and transportation).

## Method

To collect the data, a 18 question survey was distributed to the target population through three channels: (i) QR Code posted on Twitter a few days before the event and then a reminder 3 days later; (ii) QR Code display in the event venue during the 3 days of the LAN; (iii) URL link of the survey sent 10 days after the event within the association's newsletter.

The different questions concerned the transportation used to come to the event, the distance between the accommodation and the venue, the mode of transportation used to travel during the 3 days, the number of people involved in the travel mode and the socio-demographic characteristics of the respondents.

## Findings

328 questionnaires were collected. It represents 920 people (of 1944). The rate of engagement was over 47%. The estimated total carbon footprint of the event is 72 tons: 66 tons of CO2 equivalent from the participants' travel to and from the event ("long distance travel"), and 6 tons of CO2 equivalent from "local mobility", i.e., travel to and from their accommodation to the venue during their stay.

Based on the analysis of the sample data available, we can estimate that more than 55% of the participants traveled more than 500 km round trip, generating 85% of the carbon emitted during the travel to and from the Gamers Assembly. According to the sample, the car is the most widely used mode of transportation. The average number of people per vehicle is 2.5, or a "fill rate" of 50%, if we consider that each car can carry a maximum of 4 passengers and 1 driver. This rate might seem low, yet the LAN participants needed to bring their own gaming equipment (PCs, screens, peripherals, cables, etc.). 75% of the participants came by individual mode of mobility, making 74% of the total distance traveled and generating 85% of the emissions.

87% of respondents stayed several days in Poitiers and its surroundings. The average stay was 3.5 days. 90% of these people who stayed several days used carbon-emitting modes of mobility (more than 65% had an accommodation solution within a radius of 8 km, or 10 minutes travel time). Almost 80% of CO2 emissions are related to travel within this 8 km radius. Only 6% of those who used carbon emitting mobility used a public transportation.

## Practical Implications

From these initial results, several recommendations can be proposed: give preference to public transport (train for long distance travel and carpooling for short distance travel), propose on-site solutions for renting computer equipment, propose public transport adapted to the specific needs of competitors and staff during the event (bus and shuttle), and encourage soft mobility (bicycle and scooter) with a low carbon footprint.

To capitalize on this first exploratory work accomplished, we recommended to carry out this exercise recurrently to (i) raise the awareness of esports stakeholders and communities who are not expecting to be exposed to the subject of eco-responsibility, (ii) increase the level of confidence in the estimates, (iii) broaden the scope of the study, (iv) monitor the impact of implemented action plans.

A specific reflection should be undertaken to define how to integrate the impact of "outsourced IT equipment" (e.g., networks, servers, etc.), the catering offered by the event organizer (i.e., food trucks and restoration), the energy (i.e., water and electricity), into the scope of the study, the challenge being to define the processes for collecting and/or estimating of data.

Overall, this first study demonstrates the need to raise awareness and "educate" the target population to obtain higher engagement rates. This could be achieved through 3 levers of communication: pedagogy, recurrence, and reward systems.

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# Professional Streamers: Exploring the Ridge Between Entrepreneurial Success and Mental Distress

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**Keywords:** Streamers, entrepreneurship, sustainable business models.

The digital streaming of playing video games online has become a popular entrepreneurial activity, where professional streamers can earn money through advertisements, donations, subscriptions to their channels and collaborations with companies interested in gaining access to the young generation Z. During the month of April 2022, more than 48 mln hours of content were streamed on Twitch and 1.4 bln hours of streamed content were watched (twitchtracker.com).

Becoming a professional streamer has been hyped for allowing young people to turn what they love to do – playing video games – into a career that is based on entertaining and interacting with an audience, while allowing for a flexible schedule and a high level of autonomy. Currently, 53 high-schools in Sweden offer training in relation to esports and streaming to prepare their pupils for such careers (www.gymnasium.se/sok/esport).

However, little is known to date about this entrepreneurial activity – neither in terms of its sustainability nor in term of its potential impact on the well-being of streamers. Anecdotal evidence warns that the continuous live-streaming can lead to high levels of mental distress. For example did the suicide of one of the most popular esports players and Twitch streamers in the US, Byron 'Reckful' Bernstein, in 2020 clearly indicate this risk. In Sweden, the national newspaper Svenska Dagbladet recently published a 6-page article about the live of professional streamers, summarizing its message stating that "the live as professional streamer comes with a high price – depression, suicidal tendencies and a private life where nothing is protected" (SvD Kultur, 15/05/2022, p.6, our translation).

Moreover, these streamers are in a precarious position as they (a) do not own the IP they relate to, which adds a layer of complexity and risk to the "regular" entrepreneurial risks that young and small companies face, and (b) have structural incentives for long-term self-exploitation, as their audiences expect to see new contents on a continuous basis from them. Currently, there is a lack of understanding of the severity of the problems these entrepreneurs face in Sweden, which is a problem as more and more small-scale entrepreneurs in Sweden pursue this business model.

The aim of our paper is to better understand the streamer phenomenon and derive insights into which specific support is needed for Swedish streamers.

While we currently do not have comprehensive data on streamers in Sweden, indications suggest that even in Sweden the streaming of video games has become big. A recent study on internet use in Sweden showed that about 20% of all Swedish internet users watch video game streamers (Internetstiftelsen, 2021), and twitchtracker.com lists 2.292 active Swedish-language streamers in November 2021. In addition, we have an unknown number of Swedish streamers on Youtube and other platforms. Not all of those will stream to produce income, yet a substantial part of those streamers is live for 30 or more hours per month, which seems a reasonable threshold where streaming should be considered a job rather than a hobby (TwitchTracker, 2021), considering that streaming also requires time-consuming activities outside of the live stream, such as preparing content, editing videos, or interacting with the audience.

We apply an inductive research design, combining analyses of Swedish streamers' content with interviews and secondary data analysis. Our findings contribute to recent debates in entrepreneurship research on novel forms of digital entrepreneurship in platform environments (e.g., Hampel, Tracey, & Weber, 2020; Shi, Li, & Chumnumpan, 2021; Taeuscher, Bouncken, & Pesch, 2021). In the last decade, we saw the explosive growth of platform-based business models, such that companies that employ these business models, such as Facebook/Meta, Amazon, Google/Alphabet, or Apple, now make up a big part of the highest valued and most influential companies in the world (Rietveld & Schilling, 2021). Those platforms are successful as they allow buyers and suppliers of goods or services to connect in a highly efficient way. While our understanding of the platform-based business model has increased substantially over the last years (Belavina, Marinesi, & Tsoukalas, 2020; Rietveld & Schilling, 2021;

Subramanian, Mitra, & Ransbotham, 2021), our knowledge of the platform complementors, that is the businesses and entrepreneurial ventures that use the platforms, is not as well developed. Several novel forms of entrepreneurial activities emerged those platforms. While we have a certain understanding of the characteristics of, e.g., youtubers from a sociological angle (Jerslev, 2016), the entrepreneurship literature has so far largely ignored those micro-entrepreneurs on digital platforms, probably because those are relatively less glamorous than other entrepreneurial activities that can grow big. Our project helps address this gap and provide new theory on the preconditions of success and failure of platform complementors in digital ecosystems, drawing attention to the physical and mental well-being of streamers as digital entrepreneurs.

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# Sustainable Grassroots: Tensions, Expectations and Recommendations in Formalizing Collegiate Esports

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**Keywords:** Collegiate esports, esports organizations, grassroots communities, semi-structured interviews.

Although esports is experiencing exponential growth as an industry—with significant investment from sponsors (e.g., Sheng, 2021), game and entertainment companies (e.g., Jacobson, 2021), and governmental entities (e.g., Can & Foxman, 2021)—much of competitive gaming's longstanding appeal stems from its grassroots development (T. L. Taylor, 2012). From early LAN tournaments to modern-day competitions organized and communicated via

digital platforms like Discord and Twitch (e.g., Gerber, 2022), grassroots enthusiasm can drive games and players into the broader esports ecosystem with the caveat that meteoric rises have equally precipitous falls as leagues, teams, and titles move in and out of hype cycles. How to sustain grassroots enthusiasm for competitive gaming and integrate it into the wider ecosystem (Scholz, 2020) and industry remains difficult.

Within this context, collegiate-level esports in the United States provide an important case study. Grassroots have been vital for developing gaming on campuses, with informal clubs eschewing school structures and interfacing directly with publishers to initiate early programs (Kauweloa, 2021). These arrangements acted as foundations for what is increasingly becoming a normalized and formalized part of university life. Within the U.S. alone, over 175 esports teams compete at the "varsity" level (Varsity Esports, 2018), leading to an explosion of funding, infrastructure (e.g., Kauweloa & Winter, 2019), scholarships (e.g., Schaeperkoetter et al., 2017), and tournament investment (e.g., Czar, 2021). Collegiate esports represent how games are expanding into the core components of university life, while conversely requiring universities to engage with the wider esports ecosystem to remain viable. In other words, they are a compelling testing ground and case study for uncovering not only how to advance esports at the amateur level, but also sustain a kind of "minor" or lower league, particularly within the U.S./North American context (Scholz, 2020).

These circumstances motivate the proposed paper, which focuses on the cultural, economic, and institutional barriers and opportunities for developing and sustaining collegiate esports programs in the U.S. Some scholarship on this front noted how the deployment of esports programs might provide new benefits to institutions, such as promoting inclusivity in STEM education (Brewer et al., 2020) or reconsidering issues like student-athlete pay (Baker & Holden, 2018); such programs could in theory be sustainable by opening up, rather than foreclosing, options for student athletes. However, a host of barriers also persist: confusion over the regulation of esports programs (Reames, 2018); two-tiered university systems that favor male-dominated games (N. Taylor & Stout, 2020); and practical monetary concerns regarding over- or under-funding university teams. Such concerns require grounded investigations of how collegiate programs are formed and managed.

To better understand this, we conducted and analyzed a series of in-depth interviews with 31 collegiate esports administrators, program directors, players, and associated student workers

(e.g., college media producers or esports facilities staff.). Although data analysis is ongoing, initial inductive thematic analysis (Braun & Clarke, 2021) reveals several tension points that collegiate programs face when transitioning from grassroots to formal organizations. Grassroots organizations must achieve administrator buy-in; administrators then need to navigate uncertain processes for planning, purchasing, and setting up required equipment for esports spaces. They often lean on student knowledge to do so, creating differential labor burdens—and power relationships—between students who formerly worked together in ad hoc, volunteer capacities. The transition from informal to formal thus can contribute to interpersonal disagreements, often exacerbated (or excused) because of the perceived immaturity of college students. Thus, the ongoing operations of collegiate esports programs may require more formalized assignments of roles and responsibilities and clear communication between stakeholders to run effectively and to prevent disparate treatment of student players and workers. A combination of critical assessment and current-best-practices guide, this presentation will draw on participants' hands-on experience building and running collegiate esports teams to illustrate common challenges and solutions to esports program sustainability. Our presentation will conclude with concrete recommendations for both collegiate and amateur organizations' continued economic and social expansion.

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# Track: Performing Esports

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In recent years, researchers started to explore the factors which may impact to performance in organized esports competitions (Sharpe et al., 2022). In doing so, esports performance research has ranged from the physical (Trotter et al., 2020; Emara et al., 2020) to the psychological (Poulus et al., 2021; Leis et al., 2021; Behnke et al., 2020) factors associated with success in organized esports competitions. In line with this endeavor the aim of this track is to provide further insight into factors that influence performance in esports through four novel research presentations. Andre et al., will start by presenting findings related to the influence of blue light glasses on fatigue in esports. Then, Daviaux et al will explore an optimized framework to coach for performance and health within an esports sport-study context. Leis et al., will then focus on the stress responses associated with training and competition in League of Legends. Finally, Baumann et al., will outline a prospective study exploring the characteristics of esports athletes health and health habits.

# Use of Blue Light Filtering Glasses During Gaming on Fatigue

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**Keywords:** Education, academia, degrees, curriculum, courses, certificates.

**Objective:** Determine if the use of blue light filtering glasses during a 3- hour gaming session impact performance and fatigue

**Background:** In the competition side of esports, elevated physiological responses has been demonstrated during a live event in collegiate esports competitors (Andre et al., 2020). Even in non-competitive environments in recreational environments increased heart rates during game play have been demonstrated (Valladão et al., 2020). Given the rise in esports over the previous decade, there is a strong need to understand athlete fatigue within this paradigm. Currently there are supported models for traditional sports competition, training loads, and fatigue prevention/monitoring. However, within the esports space there currently is a lack of research for monitor training loads in esports or acceptable methods for fatigue monitoring. A functional MRI investigation demonstrated activation in areas of the brain concerned in executive control was associated with better gaming performance (Wang, 2018). The authors findings of reduced executive functioning accuracy after hours-long gameplay may indicate the need for breaks in gaming in order to mitigate what might be a type of cognitive fatigue or alternative methods to reduce fatigue during gameplay. Given that esports players of first-

person shooter games can produce over 500 actions per minute, a loss in accuracy could be damaging to gaming performance. Currently, there is a lack of understanding the best methods or ergogenic aids that may assist in preventing fatigue or overtraining. One such product has been developed, blue light filtering glasses, but the impact on game performance over several hours is yet to be determined.

**Methods:** A total of 13 college aged males (Age: 22.2 ± 2.4 years; Height: 176.0 ± 7.2 cm; Weight: 76.6 ± 12.1 kg; Exercise: 7.1 ± 3.4 hours/week; Gaming: 14.2 ± 12.0 hours/week) were utilized for the current investigation. Participants completed a familiarization trial in which game was selected (Apex or Fortnite), controls, sensitivity settings, and Tobii eye tracking (Tobii, Stockholm, Sweden) were calibrated, then completed 3 rounds of AimHero to be familiarized with the training platform. Monitor and chair distance were identical between all sessions. Individuals were excluded from participation if prescription lenses were needed or previously had used blue light glasses (Gunnar Optiks, Carlsbad California, USA) . Participants returned to the lab to complete a 3-hour gaming session of Apex or Fortnite on two separate occasions (Glasses (Amber 65) [G] and No Glasses [NG]) including 2 rounds of Aimhero (reflex, classic, fast aim) immediately post 3-hour gaming session to be used as a standard gaming lab control. Participants were asked to rate perceived visual fatigue post 3-hour gaming session. Paired sample T-tests were utilized to examine criterion variables.

**Results:** Significant differences were observed between the accuracy for reflex on aim hero after 3-hours of gameplay (NG 3-hr: 50.3 ± 15.5% vs. G 3-hr: 55.9 ± 17.4%; $p > 0.01$). However, no difference was observed at the 3-hr post for fast aim accuracy (NG 3-hr: 77.5 ± 13.1% vs. G 3-hr: 80.7 ± 11.0%; $p = 0.22$). Perceptual visual fatigue post a significant difference was observed (G: 2.6 ± 1.9 vs. NG: 4.0 ± 2.9 $p > 0.01$).

**Discussion:** The current investigation did not observe improvement in aim accuracy across all training modes during the glass's session. This may suggest the reflex mode utilizing the flicking skill is more sensitive to fatigue and the glasses assisted in preventing fatigue. However, it is also possible differences in accuracy may have been observed if the duration of the gaming session simulated an 8-hour practice. Potentially an alternative training platform, mode, or metric should be examined in efforts to establish a standard for assessing performance fatigue. Given perceptual visual fatigue was lower during the glasses session it is worthwhile

to continue to explore blue light filtering glasses as a potential tool to reduce fatigue and over training in this population.

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# An Optimized Framework to Coach for Performance and Health within an Esports Sport-Study Context

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**Keywords:** Education, Academia, Degrees, Curriculum, Courses, Certificates

## Background

Education in esports is part of the core ways to ensure gamers sustainability (Hong, 2022). Of main importance are the support of their performances while maintaining health during careers, and preparing for successful transitions out of esport. The Education Gaming School (EGS) aims to do so, as a French sport-study school part of the 13% of world's higher academic programs focused on esports performance while graduating (Jenny et al., 2021a).

A major concern to meet the challenge of performance and health is that no training course still exists for esports coaches (ECs) to ensure their awareness about sport sciences (Jenny et al., 2021b). Since the performance-health couple cannot wait for the next generation of ECs to be trained, EGS has already involved specialized coaches (SCs) in its team along ECs. However, to our knowledge no framework has been established yet on organizing such a coaching team in an educational structure.

Thus we aimed at addressing how ECs and SCs could operate to maximize performance and health of gamers at EGS. For instance ECs are dedicated to esports-ingame training while SCs support wellness out of esports sessions, according to the identified domains for gamers' wellness and performance (physical and mental preparation, cognitive training, advice on nutrition, sleep, and stress regulation, Emara et al., 2020). We hypothesized that coaches' actual

practices would be convergent enough to map a general, esport-centered performance and health framework that can be optimized by solving needs and pain points.

## Methods

Esports coaches involved in this study were 15 recognized experts in video games for Rainbow Six (n=4), FIFA (n=2), League of Legends, CS:GO, Fortnite, Rocket League, Super Smash Bros, Apex, Overwatch, Valorant, and Call of Duty (n=1 each) [4.9±3.3 years of experience as coach]. Specialized coaches were physical trainers (n=2), mental trainer, cognitive trainer and naturopath (n=1 each) [3.2±0.4 years of experience for esports].

A semi-structured interview guide was designed as it offers consistency in interviews while allowing to explore specific issues when needed (Patton, 2002). Questions were approaching practices for coaching and the related needs and pain points through matching their job-as-prescribed vs. job-as-done (method from ergonomics for work organizations; Faverge et al., 1972). Themes were covering practices for improvement of esports performances of gamers, health and wellness of gamers, and adequacy of coaching practices with needs for gamers to graduate out of the esports training sessions.

Interviews were transcribed into verbatims and coded into actions. Actions were sequenced then mapped to create an interactions map that represent the coaching ecosystem at EGS, with interactions between SCs, ECs, and gamers. Needs and pain points were listed for every action, then merged in categories to be solved. The interaction map was then adjusted accordingly.

## Discussion

Following the optimization of the framework, the coaching actions and interactions at EGS were grouped under 3 stages: preparation stage before school-esports season [creation of coaching contents and academic contents, planification], esports training sessions stage [adjustments for a given training session, warm-up, training time, cool-down, and follow-up actions], and coaching out of esports sessions stage [application of health practices, improvement of esports performances through non-esports training, and improvement of autonomy around health practices and performances].

The key framework adjustments were made mainly based on two groups of pain points:

First, heterogeneity and versatility of gamers' levels, career goals, needs, and engagement has required facilitating how coaches can follow up gamers' journey for performance and health along a season. This led to suggestions around enhancing interactions between ECs, SCs, and gamers with creation of shared resources and processes (e.g., gamers' individual sheet for coaches to share KPI and notes; notes on gamers' key events to adjust training plans), and promoting improvement in autonomy around performance and health questions (e.g., courses and tutorials for best practices with coaches as supervisors, in addition to applied sessions).

Second, ECs and SCs both agree on their needs to be carried by each other, for gamers' performance and health to be supported with specific expert content whatever the coaching stage. ECs-SCs collaboration would be improved through the co-creation of contents in the stage of the season preparation (e.g., mental and physical routines to be applied during warm-up in esports sessions; sensitization around esports' specific injuries and hazards by ECs to guide SCs), and through punctual involvement of SCs during esports sessions (e.g., mental preparator to find keys for better communication between ECs and gamers).

Coaches for e-reputation, career path, and mental health were also involved in the team.

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# Stress Responses Associated with Training and Competition in League of Legends

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**Keywords:** Emotion, cortisol, heart rate, psychophysiology, competitive gaming, League of Legends.

Sport psychological research aims to help athletes to adapt their training and competitive behavior to maintain or even increase high levels of performance under stressful and competitive situations (see review by Brown & Fletcher, 2017). A similar approach might prove beneficial for esports players (e.g., Leis et al., 2021). Although research has provided insights into psychological aspects (see review by Bányai et al., 2019; Pedraza-Ramirez et al., 2020) including stress and coping in esports (e.g., Leis et al., 2022; Poulus et al., 2021; Smith et al., 2019), a better understanding of stress in esports is needed to support players achieve

high cognitive and motor performance (Leis & Lautenbach, 2020; Mendoza et al., 2021). In addition, more research on the stress-performance relationship in esports is necessary to inform future intervention studies and impact players' performance (e.g., Behnke et al., 2020).

## Objectives

The main aim of this study is to investigate whether playing esports in competitive settings is related to psychophysiological stress and if so, whether stress responses can predict in-game performance. Based on previous research and theoretical frameworks on competition (e.g., Leis & Lautenbach, 2020; Oliveira & Oliveira, 2014; Salvador & Costa, 2009; Van Paridon et al., 2017), we assume that psychological and physiological stress responses related to competitive game play are higher than responses in relation to game play during training. We also assume that psychological and physiological stress responses can predict performance (e.g., Lautenbach et al., 2014; Lautenbach & Lobinger, 2018).

## Method

In contrast to previous studies that primarily focused on physiological stress (see review by Leis & Lautenbach, 2020), this study aims to assess both psychological and physiological stress responses. Whereas previous studies predominantly investigated non-competitive game play (e.g., Ferguson et al., 2016) and amateur players (e.g., Schmidt et al., 2020), this study assesses stress responses during training and actual competition in professional esports players. In addition, this study addresses limitations of previous research such as a priori sample size calculation and prior assessment of perceived match importance (see review by Leis & Lautenbach, 2020). Therefore, this study focuses on psychological and physiological stress responses of 27 professional League of Legends players during training (i.e., scrims to prepare for upcoming competition) and official competition using a within-subject design. Participants are required to play in official leagues such as the League of Legends European Championship or the France's national league. Psychological (i.e., perceived stress, affect, emotion) and physiological stress (i.e., cortisol, heart rate, heart rate variability) will be measured approximately 55 min before, 45 min before, 25 min before game play as well as immediately after, 15 min after, and 30 min after game play (i.e., training and competition). In-game performance will be measured using game specific parameters (e.g., kill-death-assist ration, gold), self-rated performance, and outcome of the game (i.e., victory, defeat).

## Findings

Preliminary findings from two professional teams (n = 7) highlight differences in perceived match importance and motivation with higher scores for competition in comparison to training. Preliminary data also indicates an increase from baseline during competition in heart rate, heart rate variability, affect, and perceived stress. Due to the limited sample size, no preliminary results will be reported on the stress-performance relationship for now. Although the measurements will continue in January 2023, more detailed results on the preliminary findings will be presented at the conference.

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# Characteristics of Health and Health Habits of Norwegian Esports Athletes: A Prospective Cohort Study of Esports Athletes in "Telialigaen" Division 1 To 5.

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Even though esports athletes are likely to benefit from having a healthy diet, sleep, and fitness habits, several studies suggest that engagement in esports is associated with suboptimal health habits. Concerns regarding esports athletes' health have been raised partly due to the inactivity inherent in esports (DiFrancisco-Donoghue, Werner, Douris, & Zwibel, H., 2020). There is currently little data on the Norwegian esports athletes' health or performance. However, one recent study found that Norwegian esports students have some sub-optimal lifestyle habits, such as skipping breakfast, consuming energy drinks, and using blue light-emitting devices before bedtime(Baumann, 2022). Esports athletes are reported to sit between five and ten hours per day in the pre-competition phase, resulting in pain or fatigue in the back, neck, wrists, or eyes, or a combination of these (DiFrancisco-Donoghue, Balentine, Schmidt, & Zwibel, 2019). Inactivity, such as excessive sitting, is associated with an increased risk of all-cause mortality exceeding six to eight hours per day(Patterson et al., 2018). Further, esports athletes' dietary habits have also raised concerns. One study reported that gamers and esports athletes' fruit and vegetable intake was less than half of the daily recommended intake(Rudolf et al., 2020). Low intake of fruit and vegetables has been linked to an increased risk of cancer, cardiovascular disease, and mortality (Aune et al., 2017). These challenges mentioned above might be

jeopardizing the social sustainability of esports due to the impact they might have on the esports athletes' health and well-being (Nyström, 2022).

## Research questions

- What lifestyle habits does esports athletes at a national level have?
- To what degree is the level of esports associated with health and health habits?
- To what degree does the esports athlete comply to national and international sleep, dietary, and physical activity guidelines?
- How does health and health habits change when competing at a national top level in esports during a year?

## Methods

Approximately 6300 esports athletes from four different esports (PUBG, Rocket League, CS:GO and League of Legends) represented in the national league (Telialigaen) will be recruited to a prospective cohort study. Recruitment will be done through the official webpage for the league (Gamer.no) during fall 2022. To improve the response rate 50 Steam-gift cards valued at about 50$ each will be randomly given out to the participants, as well as two Iphone Pro Max 512 GB. The data from the round 1 (T1) will be analysed with descriptive statistics with averages and standard deviations. To evaluate the difference between the players in the different divisions (1 to 5) linear regression will be used. When measuring changes from baseline (T1) to ending (T2), the T2 will be the dependent variable, while independent variables will be corresponding values from T1. Instruments included in this study measuring the variable will be demographics, MCTQ (Munich Chronotype Questionnaire), Bergen Insomnia Scale (BIS), electronic media usage/gaming habits and sleep, Attitudes Towards Sleep (ATS), International Physical Activity Questionnaire – short form (IPAQ-SF), Subjective Health Complaints (SHC), Sport Orientation Questionnaire (SOQ), Esports performance, and Caffeine Food Frequency Questionnaire (CFFQ).

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# Track: Psychology & HR

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In 2022 the European Parliament passed a resolution in which video games and esports contribute to skill development and train digital competencies. This observation highlights that esports is a highly social environment that can help train people for the (digital) society. Although it becomes evident that Psychology and Human Resources are essential for any esports team, most esports teams are neglecting them. In addition, non-endemic organisations often ignore the competencies trained within video games and esports. These gaps are essential to close if esports teams are maximising their talents and if companies are finding and attracting them, they are lacking in the war for talents. In line with these gaps, this track aims to add valued research to the discourse and show potential for further research. First, Dekli explores in his presentation that esports can be a new tool for human resource management in non-endemic companies. Then, Carton and Lorz highlight that video games teach leadership through playing video games. Next, Kallinen-Kuisma and Auvinen focus on the way to do responsible and good leadership in esports organisations and how there is a lack of focus on the right way of doing business in esports. Then, Brain et al. look at the transition of sport psychologist into esports and how to improve this process. Uebach et al. focus on the individual vulnerability of esports players and how sharing vulnerability can benefit an esports team. Finally, Varga shows insights into the business growth and how this can be translated into sustained esports performance. In summary, psychology and HR are still often neglected in research and within esports; however, it becomes increasingly evident that esports is a good training environment for skill development and competencies training. Ignoring this potential can harm esports teams and the individual player's development. However, focusing on the HR perspective can lead to a temporary competitive advantage.

# Esports, a New Tool for the Human Resources Management of Non-Endemic Companies? Sustainability and Diversification of Esports Organizations in a Digital Society

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**Keywords:** Esports, human resources management, non-endemic companies, diversification, sustainability.

## Objectives and Research Questions

The aim of this exploratory research is to analyse esports as a human resources management tool in non-endemic companies. More precisely, we want to: empirically evaluate the use of esports within the framework of human resources management actions (employer brand, recruitment, quality of work life, etc.), and understand and explain the interests of esports organizations (esports clubs and event organizers) and non-endemic companies on this subject in a digital society.

## Theoretical Background and Literature Review

Corporate esports is growing more and more as evidenced by the multiplication of events around the world such as "Corporate Esports Association" (since 2019, USA), "Gaming Masters" (season 4, Germany), tournament organized by Lenovo (Japan, 2020) or "Ligue Corpo" (since 2021, France). These events are organized by corporate associations, esports events organizers or esports clubs. The main arguments in favour of corporate esports by these organizers are "the strengthening of a digital corporate culture", "the recruitment of young talents", or even "a tool for teambuilding and quality of work life". Indeed, research shows that esports would be conducive to managerial studies (Berard, 2021); first, because gaming is a social experience (Saiz-Alvarez et al., 2021). Esports would be suitable for investigating questions around the formation of social relationships and social support as it would be a valuable social resource (Trepte et al., 2012). More specifically around HR issues, esports can be a solution for companies (Nothelfer and Scholz, 2021) concerning the employer brand, recruitment or employee retention. However, research on this topic is still recent and there is a

need for more empirical studies. Beyond the links with managerial issues, this new relationship between non-endemic companies and esports could be explained by the intrinsic characteristics of this industry. We can suppose that not necessarily having a solid business model (Scholz, 2019), esports organizations are sometimes forced to diversify their activities, such as the organization of inter-company tournaments, to ensure their sustainability. Moreover, the digital society brings together the interests of esports organizations and non-endemic companies. Recently, the enforced digitalization of society is pushing companies to develop new strategies, in particular by targeting the younger generations. As a reminder, Wagner (2006) observed that esports is a fundamental element of young digital culture and that the skills of this young generation "will most likely be influential in making decisions about the usability of technology in the future" (p. 439). Non-endemic companies could use their involvement in esports to attract younger generations allowing them to meet the new challenges of the digital society. We want to explore these different elements in the exploratory research that we present in this proposal.

## Methodology

In this exploratory research, we carried out five semi-structured interviews with: two organizers of esports events, two members of the management of two different esports clubs and an HR manager of a non-endemic company. All these interviews were conducted in France. We mainly asked questions about the activities of each organization, the genesis and conduct of esports events involving employees of non-endemic companies. We also delved into the questions around esports organizations interests and the impact on human resources management for non-endemic companies.

## Main Results/Findings

The first results of this exploratory study show that corporate esports has developed a lot since the pandemic and the periods of lockdown and teleworking. Esports clubs and organizers of esports events, whose event activity fell sharply during this period, took advantage of the opportunity to create online tournaments with non-endemic companies. Online tournament has been an asset during this period and will be even more so in the future according to the members of the esports clubs and event organizers we met. This diversification of their activities gives esports organizations the opportunity to respond to the difficulties of their business model by establishing partnerships with non-endemic companies in another way. For the non-endemic companies, esports is a way to modernize and rejuvenate their employer brand. It is necessary

to specify that it is not only companies linked to digital technology (companies related to IT, digital transformation, new communication media…) that engage in esports. Tournaments are usually organized by an esports club or event organizers who take care of the logistics and provide the communication devices for the participating companies. For example, these companies may be the sponsors of esports club or have been approached by an esports club or event organizers with a presentation of the commitment benefits in esports.

Based on our interviews, corporate esports would promote employees' sense of belonging. This sense of belonging can be explain by representing his company and feeling colleagues support. The other explanation is that participating in tournaments is one expression form of the commitment in esports by non-endemics companies, then allowing to improve their employer brand. Concerning management more specifically, our first results show corporate esports allows employees who would never have had the opportunity to communicate with each other to do so and to find out other professions in their company. In this context, the use of collaborative or communication tools such as Discord would facilitate internal communication and would accelerate creativity between employees. Commitment in esports could be an opportunity for managers and employees of a company to enter more quickly into a digital culture (using tools, developing new skills, adapting easier to technological evolutions) and mobilize it in the human resources management. These different elements will have to be further clarified and explored in the rest of our exploratory study.

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# Towards Gamers Recognising Leadership as a Learnable Skill

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Social sustainability is considered a primary concern of both practitioners and researchers of esports (Nyström et al., 2022). A number of barriers prevent satisfactory social sustainability in esports. Exposure to toxic behaviours in online play directly harms player well-being, enjoyment, and retention (Beres et al., 2021), with esport athletes reporting anti-social behaviour as a prominent and novel stressor relative to traditional sports (Poulos et al., 2020). The average career of an esport athlete is remarkably short, with about 20% of professional athletes' careers lasting 2 years or longer (Smithies et al., 2020) adding to athlete concerns of financial and job insecurity. Gender inequality remains a persistent phenomenon which impacts the opportunities of non-male players (Friman and Ruotsalainen 2022). Most esports research is focused on men (Yusoff and Mohd Yunus, 2021) which may perpetuate unequal policy-making.

Drawing on the theory and practices of "leadership" may offer a united front for addressing several issues of social sustainability in esports. Leadership is one of six key thematic areas of engagement in the EU's 'Towards More Gender Equality in Sport' action plan (European Commission, 2022), thus leadership is similarly likely to play a pivotal role towards gender equality in esports. Esports are linked by exemplary scientific evidence with the development of skills for the digital society (Scholz and Nothelfer, 2022), including leadership skills (Funk et al., 2018; Hallmann and Giel, 2018), which may support career transitions for athletes in semi-professional or professional esports (Cortellazzo et al., 2019). The development of leadership skills and awareness at scale is highlighted as a potential long-term solution to toxicity.

The authors propose a number of interventions which could be made to a video game and esport ecosystem to nurture leadership development. Topics discussed will include technological challenges, novel elements of game and narrative design, and the results of early findings based on practitioner experience and user surveys.

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# Responsibility in an Esports Organisation: Emerging Good Leadership

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## Theoretical Background

In recent years, we have read too many headlines of esports players taking a break or retiring because of burnout, mental health issues, or problems with unfair or unethical deals. If we expect esports to survive and develop into a sustainable sector, a deeper understanding of good and responsible leadership within the field is needed (Nyström et al., 2022). Today sustainability is expected from all organisations, but it is also widely seen as the ethical (i.e. the right) way of doing business (Waldman et al., 2020). Thus we can expect sustainable and responsible actions also from esports organisations. In this study, we focus on social sustainability which results in leadership as 'good leadership' or 'responsible leadership'.

Previous studies have rarely combined esports, sustainability and leadership. The focus has been, for example, on team formation and effectiveness, good governance and stakeholder dynamics, or knowledge management (Freeman & Wohn, 2019; Mysirlaki & Paraskeva, 2020; Peng et al., 2020; Saiz-Alvarez et al., 2021). However, to develop leadership in esports organisations we need to understand the different organizational structures and identify what kind of leadership exists in them (Scholz, 2019; Taylor, 2015). Esports clubs seem to have adopted many of their structures and practices from various sources. This leads to a variety of ways of sharing leadership in an organisation (Falkenthal & Byrne, 2021; Musick et al., 2021). As this is still a novel field of research, more research is needed to understand the thinking and mechanisms that dictate, or are dictated by, leadership actions. Therefore, the themes are discussed in the framework of prevailing leadership theories (e.g., Alvesson & Spicer, 2011; Pearce & Conger, 2003; Storey, 2016; Uhl-Bien & Ospina, 2012).

## Research Question

This qualitative research will provide a new perspective on social sustainability in esports. Our main research question is: What kind of characteristics of good and responsible leadership can be identified in esports clubs and teams? Other research questions are: What kind of leadership practices can be identified? What kinds of ethical stands do leaders need to take?

## Method

The data consists of twenty semi-structured theme interviews and ethnographic observation notes. The focus is on first-person shooter games that are played as teams but the context of entire esports clubs is considered as leadership seems to be shared in most cases. Esports players, in-game leaders, coaches, managers, CEOs and esports experts were interviewed during 2018–2021. The observation notes are taken during national esports events. A content analysis approach will be applied to analyse the data.

## Findings

Our preliminary findings show that many esports clubs and teams seem to lack an understanding of responsible leadership. Managerial and leadership practices have often been applied from other fields (see also Reitman & Steinkuehler, 2021). This may cause conflicts or discontinuities as some practices may not be optimal for an esports club. Also, the leaders may be left alone to operate without the necessary support structures. For example, employment contracts may not be prepared responsibly, or legal issues are ignored or not recognized. Some of the shortcomings may be due to scarce resources and a lack of leadership competence.

Financial issues may also conflict with ethical decision-making processes. If the focus is on quick financial returns, high expectations for quick wins in the games are emphasised. If the team falls short of these expectations, it may lead to a rapid release of a player, even a recent recruit, instead of taking time for team development and letting the team follow the typical stages of a team life cycle. Therefore, neglecting ethical and responsible leadership practices will lead to missing many benefits of teamwork.

We also found characteristics of good leadership in the data. Despite their organisational role, many esports leaders indicated that discussions are their main strategy to handle problematic leadership situations. For example, some leaders recognize the line-up changes as delicate

strategic decisions that have many consequences, and thus require discussions within the team, with the particular player, and often also on the organisational level (manager or CEO). It also seems that there might have been some positive development during this research process. The attitudes and understanding of good leadership have evolved from the interviews conducted in 2018 to the ones conducted in 2021. Therefore, as a result of this study, we will present a thematic framework visualizing emerging good leadership in esports.

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# Transitioning from Traditional Sports to Esports: Investigating Sport Psychology Practitioners' Experiences.

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Traditionally Sport Psychology Practitioners (SPPs) have provided supporting services to athletes, coaches, staff members and sport organizations within athletic environments. However, due to the numerous psychological issues existing in other performance domains, SPPs have started to export their services to the corporate world and the military services for instance. This shift into new performance contexts is supported by the assumptions that SPPs have the competence to provide effective service delivery to performers operating within these domains and to support them to reach optimal performance. One domain that has recently begun to see a growing relevance of the role of mental performance professionals is the world of esports.

While the esports industry shares some characteristics with traditional sports in that it is an entertainment industry built around competition, spectatorships, fan allegiance and loyalty (Hollist, 2015), it is also characterized by specific unique factors. For example, optimal performance in esports relies on players' mental skills, reaction time, game knowledge and strategy, rather than on factors such as height, weight, speed or strength (Candela & Jakee, 2018). Furthermore, esports' uniqueness as a performance domain may also add a wide range of competitive stressors on top of those esports players already traditionally endure. For instance, esports players' have a narrow timeframe to achieve peak performance and financial success due to careers being extremely short (e.g., one-in-five esports careers last 2 years or

longer; Ward & Harmon, 2019). Additionally, some esports organizations are unable to protect players from legal matters and long practice hours (Hollist, 2015) and tend to adopt a short-term vision when building teams resulting in players having fragile job security as they are yet to be unionized (Smithies et al., 2020).

The fast rise in popularity of esports and the increased recognition by key stakeholders of the important role played by mental performance in esports, an overabundance of opportunities for mental performance professionals has begun to appear and will continue to appear in esport organizations. While the role of SPPs is now appreciated in esport, only a handful of them received some esport-specific training, with the wider majority of SPPs having received their training within traditional athletic contexts. We are therefore yet to understand how SPPs trained in traditional sport environments shift their practice to the esport domain and develop adequate competence, skills, contextual knowledge and understanding to operate in this unique setting to provide the most effective and ethical service. Consequently, the current study aims to gain an in-depth understanding of SPPs' transition from working in traditional sports to esports and how they adjust to the unique characteristics of the esport performance domain.

We framed this qualitative study within an interpretivist paradigm (Levers, 2013). Using semi-structured interviews, we have explored the lived experience of SPPs who transitioned from traditional sport to esport, to learn: i) how they experienced their transition into esport, ii) what elements characterize their transition into esports, and, iii) how they navigate and manage the nuances of their transition into esports. Developing an understanding of the experiences of traditionally trained SPPs transitioning into esport may benefit current SPPs interested in working in esport to better prepare themselves to face this transition. Additionally, the results hope to inform how professional sport and exercise psychology training routes may adjust their model of training to appropriately meet the need of trainees interested to work in this space**.**

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# Exploring and Exploiting the Sharing of Individual Vulnerability in Esports-Teams

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Esports is often seen as a fast-paced environment in which teams regularly change. Especially the concept of shifting metagame contributes to this fluctuation. In some games contracts are short-term focused, because the teams are always looking for a better player (e.g., League of Legends), and in other games because the players are looking for a better deal (e.g., Counter-Strike). However, success is not as plannable as it may seem and just picking the best players is not sufficient (Parshakov et al. 2018). Building entirely new teams may be less predictable since they are not yet a team to achieve a benefit of their team-play. So, equally for entirely new and old teams there exists the same challenge: to create a high-performing team that is built on trusting each other blindly as there is no time for long discussions during a match. When composing teams, most organizations focus on the players' strengths but neglect their weaknesses. Furthermore, it is essential to analyze these strengths and weaknesses from a team perspective and, thereby, see them from a neutral perspective. On that basis, it is important to highlight that every team member and, subsequently, every team has indeed some form of vulnerability, which cannot be overlooked but should be incorporated in the team composition. Consequently, it becomes a metagame in which the individual vulnerability is openly shared and becomes an essential part of the strategy. The vulnerability is no longer ignored but utilized as another element of the metagame.

In organizational contexts, the topic of vulnerability is often connotated in a negative way and depicted as a liability or a risk (Singal & Jain 2016, Fernandez et al. 2022). Especially, revealing

a vulnerability equals organizations freely exposing themselves to environmental threats (Fernandez et al. 2022, 5). In individual contexts, vulnerability is equally seen as a weakness (Knights & Clarke, 2014, 337) and is something that needs to be held under disclosure (Bunker 1997, 123) or, at best, to be removed. Though especially in a team context, hiding a vulnerability may lead to bigger issues, that could harm others. However, showing vulnerability can be seen and approached in a positive way (Brown, 2018). Especially because trust is described as the willingness of an individual to be vulnerable to the actions of another (Mayer et al., 1995). Vulnerability is a "key manifestation of trust between individuals" (Nienhaber et al., 2014, 568) and trust is seen as a foundation of high-performing teams (De Jong et al., 2016). Interestingly, the concept of ambidexterity in terms of exploration and exploitation are relying on weaknesses in organizations (O'Reilly & Tushman, 2004). There are resources, people and processes that need to be explored and exploited so that there is a way to create a competitive advantage. Therefore, if the team players know their individual vulnerability, they learn how to share their vulnerability and contribute to the team and its team fit. With the knowledge of individual vulnerability, it is possible to work on the team-fit and utilize it in a constructive way. Consequently, this is essential to sustain long-term team success. Raising the sustainability issue (Nyström et al. 2022), the question is how sharing vulnerability relates to specific dimensions of sustainability. Perceiving esports teams as systems, sharing vulnerability makes behaviour patterns of team members more predictable, contributing to long-term stability and team robustness.

The concept of vulnerability takes another hold in esports. In any title, knowing and utilizing vulnerability are the essential part of gaining the upper hand in games. The concept of metagame is about exploiting the strengths and weaknesses of their own team as well as the opponent. It seems ironic that this understanding of metagame is normal for hero selection and strategies within the constraints of the game but neglected in the context of team compositions. Therefore, knowing and sharing the own vulnerability can be used to create strategies for counteracting the opponent that may lead to traps or build advantages. Factoring in the team members' vulnerability will not only expand the strategic potential and the ways to act and counteract the opponent, but also the functioning of the team itself. The sharing of individual vulnerability and the knowledge about the team members' vulnerability is part of the team. Teams can build their strategy around a certain vulnerability and exploit the positive outcomes of sharing this vulnerability. Consequently, vulnerability is a crucial part of playing the

metagame as it gives a team more possibilities for the metagame and find the competitive edge that is necessary to win.

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# Building Business Growth Around Sustained Esports Performance

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**Keywords:** Business, strategy, innovation, performance, research.

Esports, as an emerging industry, social phenomena and broadcasted sporting event has seen a great increase in academic literature over the past decade, but as Flegr & Schmidt (2022) also pointed out, an academic perspective on strategic management is somewhat lagging behind. It's worth mentioning that although business advisory services such as Mercer Capital, KPMG and Nielsen also contribute a great deal to understand business models and principles governing the key players in esports, they often don't elaborate enough on the athletic performance side of competitive videogaming that we could see as almost a requirement for esports organisations to thrive in today's market.

As both Peša, Čičin-Šain & Blažević (2017) and Scholz (2019) expands on the entrepreneurship perspective and long-term growth in a self-organising industry, we can understand that although there can be multiple success factors for a thriving business building on the special market esports is set in - such as the social need of belonging and the merging of offline and online realities through events - the very core of an esports business is likely to be founded on professionally forming athletic teams and winning tournaments. The mechanisms with which competitive success can be utilised for financial, marketing and developmental power can be quite entrepreneurial and novel, given how uniquely esports is situated within the general media sphere, according to Scholz & Stein (2016).

Additionally, it's curious to consider that as esports is bedded in a cross-cultural environment as many of the most successful leagues, tournaments and brands have multi-national teams required to work in optimal harmony, it invites further investigation of the effects of cultural diversity both for managing a business and setting up for success in a target market, as well as training for triumph as a competitive team.

In this industrial case-study, we aim to provide insights into the mechanisms of how sustaining top-level performance in multiple gaming titles as an esports organisation contributes to not

only the growth of the organisation as a business, but the growth of the media and social reach of the industry in the digital society, in addition to how other brands outside of esports can benefit from this growth - all stemming from consistent high performance in competitive video-gaming.

Our presentation is set to include:

- A brief history and intro into esports organisations' role in building a sustainable brand through elite-level competitive gaming
- A small literature review and anecdotal examples of how esports organisations can invest in sustainable high performance, and why it contributes a leverage in a growth-oriented business model
- Analysing the ROI for brands external to esports and their key role to the growth of the industry both from a financial and social point of view as well as dissecting their importance in projects centered around athletic performance
- Exploring anomaly cases where investing in performance can still stagger business development and how sustained poor performance & shorter-than-expected career span of esports players can damage organisational growth
- Additionally, we have the option to illustrate examples of:
    - developing a sustainable organisational culture and the benefits for competitive gaming
    - long-term strategic thinking in new go-to markets
    - action-items within reach to contribute to environmental sustainability

Sharing nearly 2 decades of experience with a multitude of special projects and unique details, our case-study aims to enrich the readers with first-hand industry examples. Connecting our findings with the current academic literature, we hope to shape the future of research for sustainable business models in esports and the importance of consistent high athletic performance in a safe way to not just positively impact individual organisations' success, but further accelerate the growth of esports in the modern digital society.

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# Track: Evolution of Esports Business

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For the past decade, the growth and spread esports has been tremendous. Developing as a business and as a set of business practices, esport's growth is not without its challenges: questions of legitimacy and sustainability of esports are strongly present. Alongside these challenges, there is also great potential as esports can offer novel ways to conduct business and foster rapidly evolving business practices. In this track these challenges and potentials are examined under the shared theme of *Evolution of Esports Business*. The presenters interrogate this important theme by asking, for instance, how esports can be not only a profitable, but also a sustainable and ethical practice, by examining the way esports business is currently evolving, and by analysing the ways esports as an evolving practice is legitimized. As such, the track hosts multitude of inspiring topics and perspectives about the *Evolution of Esports Business,* offering a number of fruitful and promising ways to approach the theme.

# Co-creating Competitive Gaming: Exploring the Institutional Role of Esports for Indie Game Development

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**Keywords:** Indie, game development, esports, service dominant logic.

This paper aims to discuss the conceptualization of the relationship between esports and indie game development by applying the theoretical perspective of Service Dominant Logic (SDL). The paper reports from an interview study with indie game developers in Sweden about how they reason, talk about, develop their games (services), and relate to esports as a new institutional force in the game development industry.

Game developers are primary stakeholders of the esports ecosystem and vice versa (Scholz et al., 2019). However, developers who produce the services we typically refer to as "esports titles" remains at an exclusive cohort of large corporations, so-called "Triple-A" studios despite often being created in smaller grassroot settings such as through modding teams. While these studios occupy relatively strong and dominant positions within both gaming and esports, indie game developers are typically situated in the creative fringes of these industries (Styhre & Remneland-Wikhamn, 2020). In recent years, tools for developing more technologically advanced games have become more sophisticated, affordable, and therefore available to smaller game development studios. This is believed to upset the traditional large-scale advantage of Triple-A studios as well as attracting many new entrants to the game development industry.

The new and technologically improved conditions for smaller game development studios to produce titles that are perceived as high-quality products calls into question the classification of independence. Within the context of game development, "indie" stands for independence and has traditionally been understood factors like financial restraints, pursuing artistic autonomy, sustainable working conditions, and independence from game publishers (Garda &

Grabarczyk, 2016). In this paper, we are curious about the relationship between the independence between game development and esports as a phenomenon in a wide sense, entailing both the industry logics of the esports scene as well as the practice of competitive gaming.

To explore and discuss how indie game developers perceive esports to influence their business practices, we conducted semi-structured interviews with 19 participants who are employed and/or executives at 18 different indie game development studios in Sweden. Our questions concerned areas such as how they discuss competitive play as a part of the services they provide, how they co-create value with their audience-focused communities, and how they perceive that the influence of esports to have changed the practices of marketing their services. This empirical material was coded in NVivo and analysed through the concepts of SDL. The study is still in progress and the findings presented here are preliminary.

SDL originates in service literature and consists of several foundational axioms and propositions (Vargo & Lusch, 2016) that offers a *processual* logic of value and transaction. This perspective has been applied in several disciplines and empirical domains (e.g., Hardyman et al., 2015), including esports (Kunz et al., 2021). In contrast to traditional economic logic of goods, where resources are thought of in input-ouput-relations, SDL posits that *value* is something we experience sequentially and cannot therefore be stored like ordinary goods (Vargo & Lusch, 2017). In this paper, SDL informs our interpretation of the empirical material in two main ways: it allows us to conceptualise indie game developers as providers of a service that is co-created with their audience and audience-driven communities; and it forms a conceptual ground for challenging the idea of independence in relation to the institutional arrangements of the esports ecosystem.

We find that, while the developers we interview prefers the label of “indie”, this signification of independence does not mean that they are unaffected by esports in terms of a new institutional force. On the one hand, the interviewees find that the influx of esports have given rise to new expectations from communities—especially unsustainable demands for integrating elements of competitive play and the aesthetics of esports in their services. On the other, smaller studios often struggle to sustain the task of upholding the integrity of competitive gaming environments, as this requires hefty and continuous investments in anti-cheat software, as well as services of enforcing sanctions against violations. However, we find that indie-game

developers embrace the possibilities of their audience (and their community) to host, regulate, and sanction competitive forms of playing the game. In this sense, some indie game developers embrace the possibility of player-autonomy when it comes to furthering the service they provide through their games and thus the extensions of the co-creation of the experienced values that their service provides. We also find that while indie game developers situate themselves outside the centre of the esports ecosystem, new actors/corporations within the esports industry (i.e., sponsored players, esports teams, streaming services) provides new ways to communicate their own titles to the market. We find that esports have also influenced the marketing logic of indie game development, more specifically the balance and concerns of having a sustainable relationship to communities and their ever-increasing demands. Theoretically, this sheds light on how co-creation may be affected when introduced with a new logic and its subsequent spillover effects.

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# Profit, First-Mover Advantage or Relational Rent? The Strategies of French Professional Esports Clubs

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The esports industry is currently experiencing a very strong development, and its economic sustainability requires an evolution of business logic (Nyström et al., 2022). Indeed, the 2021 League of Legends World Championships attracted 30.6 million of spectators (+32,8% in 1 year). This is accompanied by new economics issues for this sector. Clubs are raising more and more funds (for example, Vitality raised 85 million in 3 years from the society Rewired.GG). Moreover, investors with various profiles are involved in the fundings of the clubs, such as gaming personalities, traditional sports clubs or endemic societies. These fundings lead to an increase of the principal sources of expenses of the clubs: the talents, and material or immaterial investments (such as gaming houses or league franchises).

These funding archetypes, seemingly based on extern investments, echoes two models. First, the model of the startups, which are loss-makings companies that are betting on their future profitability. Then, the model of the European traditional sports clubs, historically in deficits since they are engaged in an arm race (Carin & Terrien, 2021) and a win maximization strategy (Sloane, 2015).

Thus, the interest of investors to finance an industry that does not seem (yet) profitable brings the following research question: what are the economic strategies of the French esports clubs

and their investors? Considering that the esports industry is currently not profitable (an underlying conjecture that remains to be proven in this research), two hypotheses are posed, based on the resource theory (Prévot et al., 2010).

Firstly, the attractivity of this industry could come from research of profits in the long run. This profitability would be allowed by a first-mover strategy (Lieberman et Montgomery, 1998). Indeed, a pioneering position would allow the acquisition of competitive advantages, such as the preemption of scarce resources and consumers advantages, which are strong advantages in the traditional sports industry (Maltèse & Véran, 2010). This strategy is also characteristic of high-tech startups (Hellman & Puri, 2000), and needs most of the time venture capital fundraising. Thus, in view of the repeated fundraising by esports clubs and their consequent investments in talents, some clubs might have such a strategy.

Secondly, the attractivity of the esports industry could not be linked to its direct profitability, but by the search of synergies between the esports activity and the other business of the clubs' owners, allowing to develop competitive advantages (Mauws et al., 2003). Thus, the hypothesis of a relational rent strategy is proposed, where the esports club would constitute a strategical resource for its owner (Dyer & Singh, 1998).

Therefore, the purpose of this study is to determine the professional esports clubs' strategies. To do so, a qualitative method has been used. Seven semi-structured interviews have been made with 5 professional French clubs and two international player agents. Annual accounting reports of clubs have been studied to complete the interviews. Thus, this study is based on a sample of seven professional French clubs (interviews + annual reports), of about 15 in total listed in France, leading to theoretical saturation.

The results highlight the loss-making nature of professional esports clubs, thus confirming the initial conjecture of this research. The two strategies defined in the theoretical framework are also identified, but correspond to clubs with different profiles. First, the interviews conducted for this study confirmed the hypothesis of a first-mover strategy adopted by some French professional sports clubs. These clubs are aiming to reach the best European leagues as quickly as possible in order to get a pioneering position. They are using venture capital fundraising in order to cover the huge investments in an arm race and the purchase of closed leagues franchises. Therefore, they are using a win maximization strategy to achieve long-term profitability through their pioneering position. Then, the results of this research also support

the hypothesis of a relational rent strategy for some clubs. The relationships between esports clubs and owners would constitute a strategic resource. These clubs are aiming for making good sporting results for marketing purposes. The expenses in talents and their utility maximization approach (Sloane, 1971) are covered by the external funding of a parent company. The latter is looking for the maximization of its own profit in the short run through the complementarity of resources: the sporting results of the esports clubs aim to maximizing the parent society profits.

Finally, the presentation will discuss the managerial implications of this study. The sustainability of the two approaches will respectively depend on the long-term profitability of the industry (which is a risky bet) and the synergies developed by the club owners. Thus, the study of strategic content (the effectiveness of strategies, in the short or long-term depending on the strategy undertaken) constitutes an interesting extension of this research.

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# Esports and the Spatial Legitimation of a Market

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The legitimacy of the esports industry has grown substantially over the course of the past two decades. There have been numerous discussions of how esports has grown and institutionalised, including the extent to which it can be considered a sport (e.g. Jenny et al., 2017; Jonasson & Thiborg, 2010; Abanazir, 2019), and the professionalization of participants (e.g. Taylor, 2012; Kempe-Cook et al., 2019; Seo, 2016). However, the role of the spaces used in esports – online spaces and event spaces in particular - and their effect on the legitimation of the market has not been examined.

Similarly, how markets grow and legitimise has been a key discussion within Marketing academia, and prior work has dealt extensively with the creation, evolution, and legitimacy of markets via the lens of institutional theory (e.g. Humphreys, 2010; Coskuner-Balli, 2013; Scarabato & Fischer, 2013; Baker et al., 2019). However, much of the focus has been on the processes or actors involved in institutionalisation (e.g., Tolbert & Zucker, 1996; Lawrence & Suddaby, 2006; David et al., 2019). Institutionalisation is the process by which a phenomenon becomes accepted as a norm within a society. We argue that the role of space and place in the legitimation of a market has been underexplored, particularly online spaces (Berger, 2020). Given society's high usage of online spaces – especially since the pandemic – it is important to understand their effect on the institutionalisation of a market. As such, the aim of this paper is to fill out this gap by investigating the legitimation over time of a market that is dependent on both online and offline spaces: the esports market.

The Esports market is the ideal context for this study due to its unique spatial context. Games take place in virtual places, often with players connected via the internet and without necessarily being in the same room with each other. In addition, the development of streaming on sites such as Twitch has allowed Esports participants to share their gaming experiences and to watch others play (Sjöbolm & Hamari, 2017). Yet despite the virtual nature of esports, many matches often take place in offline, in-person events. The variety of both online and offline spaces used in Esports makes it an ideal context for this research.

To achieve the objectives of our study, the first author conducted 32 semi-structured in-depth interviews with esports participants who are involved in the esports industry in a variety of roles, from casual players to event organisers. Data collection also involved archival research (e.g. newspaper articles, television news reports and documentaries) in order to create a timeline of the market legitimation of esports (Golder, 2000), which will be used to demonstrate how attitudes towards Esports have evolved over time.

Our initial findings suggest that the esports industry has mimicked other already legitimate markets (DiMaggio & Powell, 1983) to gain legitimacy, in particular by holding match events in stadia typically used by traditional sports teams. We also find that, despite the majority of esports activity taking place online, the physical location of participants is nonetheless important: legitimation of the industry varies by region, with internet speeds, internet café usage, and appearance of esports on mainstream media channels all playing a role. Finally, despite the online nature of esports, respondents reported viewing offline matches as more legitimate due to the extra pressure of competing in front of a crowd and the increased difficulty of being able to cheat. The purpose of this work is not to explore whether or not esports has achieved legitimacy within society – not only is there no standard measure of legitimacy, but whether or not esports has achieved legitimacy will be very subjective. Whilst those who participate in esports will likely view the industry as legitimate, this may not always be true of wider society (Cestino-Castilla et al., 2021). Rather, the purpose of this work is to explore *how* esports has gained legitimacy over time and what this tells us about the processes of institutionalisation in the digital age. It is anticipated that the study findings will contribute to the literature on both institutional and space and place theory, and to the nascent field of esports research.

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# Simulated Racing and Esports – Disregarded Underdog of Competitive Gaming?

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**Keywords:** Esports, motorsports, simulation, simulated racing, sustainability, synergy.

This abstract suggestion regards simulated racing and how it has been left in the shadows of other esports despite its global popularity, future potential as well connections to sport organizations and different industries. This also handles themes about the history and current situation of simulated racing itself, co-operation between sim racing and motorsport, and upcoming developments to expect. Despite grown interest and status of sim racing, there has been minor academic research about the possibilities and consequences this might bear upon in the future, let alone developments in the field of simulated racing and how they look for traditional motor racing.

Simulated racing is a vast phenomenon. Due to its inseparable simulated connection with motorsport and automotive industry, combined with the media visibility of the real racing series and brands related to them, and as well the sheer popularity of different racing games, sim racing provides an interesting, comprehensive and competitive environment for research. However, the effects of COVID-19 contributed to the sudden rise of popularity, and hence the balance between effort and future possibilities of sim racing are still unwritten (see Murray et al. 2020; Kovács & Szabó, 2022). The constant financial challenges and unpredictability of real-life motorsport are also worth bearing in mind (see Jenkins, Pasternak & West, 2007; Jensen, Cobbs & Groza, 2014).

As for social factors, sim racing is more accessible and has a much lower threshold to start a career in than real-life racing, as it requires less different forms of capital/resources (such as money, social contacts etc.) in order for one to succeed. On the other hand, more (and also more expensive) equipment is required to compete in the top level than in many other forms of

esports. The scene is also still largely biased regarding different nationalities and gender. Limits of simulation, regarding general media appeal in terms of spectacle value, are also an issue despite close competition in sim racing.

Also, compared to real-life motor racing, simulated racing as genre(s) of esports are also more environmentally friendly forms of competition than the sports they are based upon, even though the simulated relationship, inspiration and reciprocity between these parties raises questions. This evident with the hardware required, demand for suitable infrastructure and general acceptance.

Reflecting upon these factors and how they seem to benefit the future of the sim racing, the status of sim racing is still more or less a niche form of esports. This is despite its ties to different industries, potential sponsors and organizations. So far, apart from some exemptions (see Schacchi, 2018; Malinen 2019; Witkowski et al. 2021), non-economical or non-technical academic interest towards this subject has been limited, even though the realization of entertainment value and realism of simulation is not new (see Riddell, 1997; Young, 1998). Then again, these developments have been dealt in more general mediums, such as in both gaming/IT and motorsport magazines and publications.

The plurality of games in different platforms, access difficulty of accurate simulations (vs. “arcadeish” racing games with mass appeal) and national differences in organizing simulated racing, it remains unclear how to comprehend sim racing in the field of esports as a whole. The cultural significance of motorsport is worth considering with the overlap in differences of access to competitive racing games. Another feature worth acknowledging is how both sim racing, as a form of esports, and traditional real-life motorsport might collaborate with each other in order to generate sustainable environments with acceptance from global audiences.

The grown collaboration and history between simulated racing and esports, along other parties and agents, include many questions that we seek to find answers for. How does sim racing fit in the field of esports. What factors have affected to the state of sim racing as it is now. Can the connections with motorsports and other related industries be found sustainable. How does global growth in popularity compare with financial risks and maintaining cultural stability. Then again, what in the end are possible future trends and developments and how do they affect our understanding of that, what we consider as not just competition but racing.

This paper is designed to be a theoretical, reflective abstract for a possible article, embracing the sociocultural significance of racing games, political and economic interest affecting them as well the questions about identification and participation. We believe this work would also develop new ideas and discussion studying simulated gaming. It would also give visibility for the subject and phenomenon worth studying more in the future across different faculties.

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# Interaction between Human Rights' Mechanisms and Informatics' Devices: The Way forward to Sustainable Esports

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**Keywords:** Education, academia, degrees, curriculum, courses, certificates.

Considered the new frontier of sport, online competitive gaming has attracted the interest of many people all around the world. Those involved in the booming business of e-sports create digital environments that are specifically aimed at drawing the attention of individuals, especially young people and children, in a way that few others can. This was particularly true during the coronavirus pandemic, which significantly restricted opportunities for play and socialization in real-world public spaces.

Yet, as is often the case with very successful economic phenomena, e-sports may pose important questions in terms of respect for human rights and fundamental freedoms. For instance, ensuring inclusion and gender equality, preventing excessive and toxic use, fighting verbal and physical violence, and managing commercial influence may all be key issues that require greater attention and prompt legal and informatic responses. Additionally, the e-sports are subject to further typical issues of digitalized assets: from those related to management of personal data (e.g., correct identification of participants or profiling) to more innovative issues, (e.g., protection against e-Doping, also known as cheating).

As is usually the case with traditional sports, answers to these issues may be found in Italian constitutional provisions, on a personal (art. 2 Const.), social (art. 18 Const.) and economic level (art. 41 Const.), as well as in international human rights instruments of hard law (e.g., the

1950 European Convention on Human Rights and the 1966 UN Covenant on Social, Economic and Cultural rights) and soft law (e.g. the 1948 Universal Declaration of Human Rights).

Furthermore, the frequent engagement in e-sports of young people and children raises its own important questions (see the 2020 UNICEF Recommendations for the Online Gaming Industry on Assessing Impact on Children). Indeed, since participation - as player or viewers - in public e-sports events streamed on Twitch or other digital platforms requires personal identification, the violation of a number of additional personal rights may occur. Particularly, in the case of participation by minors, their registration must obviously be subject to parental consent (art. 8 GDPR). Less obvious is how parental consent will be given and verified.

Considering the delicate interconnection existing between virtual reality and real life, our interdisciplinary research aims, first and foremost, to demonstrate whether, in contemporary digital society, e-sports can contribute to the realization of the fundamental right to play and enable the activation of other fundamental rights' mechanisms, such as the prohibition of non-discrimination and the rights to health, assembly and freedom of expression, peace and development. Second, the roles, duties and responsibilities of the various institutional and non-institutional actors involved in the e-sports' developments will also be assessed. Particular attention will be given to online gaming providers, showing whether and to what extent they should bear specific obligations under human rights law when making online e-sports products available. Third, indicators to establish whether and possibly which activities realize the fundamental right to play as well as indicators to identify, monitor and prevent actual and potential threats to sustainable competitive gaming will also be elaborated. Ultimately, given the special relevance of children's rights in the e-sports' context, we will also explore methods to obtain and certify parental consent, examining those that have already been used by some social platforms or those which are already in force in other legal systems.

To achieve these cross-cutting objectives, authors will rely on two methodologies. First, for a theoretical reconstruction of the phenomenon and its potential harm in real life, we will rely on a systematic literature review on e-sports known issues related to its digital nature. Moreover, we plan to collect available open data (log of e-sports events, scientific papers, data collections) in order to build a specific dataset that enable us to define and possibly validate the set of indicators proposed above. Collected data will help in a process of identification, classification and analysis of existing data, literature, hard/soft law instruments, and the jurisprudence of

domestic/international courts and monitoring bodies. Subsequently, we will rely on a top- down approach aimed at understanding how e-sports practice concretely works and develops in different value systems. Both methods will strongly benefit from the close interaction of its authors: two experts of civil and international law with an informatic engineer.

Namely, such interaction will foster general awareness and legal understanding on the esports practice, will determine the elaboration of adequate indicators on actual and potential harm for e-sports' players and viewers, and finally lead to new proposals based on both existing and innovative legal options.

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# The Truth about Esports during the Pandemic: Generalizable Economic Sustainability Lessons Learned in France

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**Keywords:** Esports, France, covid, industry, video gaming, business, economic, pandemic, sustainability

Overall, much of the general media reports on gaming and esports during the pandemic glorified surges in player and viewer statistics (e.g., Geyser, 2021) or entire video gaming industry sales (e.g., Dealessandri, 2021) with little attention to the objective economic impact of COVID-19 lockdown regulations on companies within the esports ecosystem. For example, as early as May 2020, economic journalist Stefan Brambilla Hall reported that the COVID-19 pandemic "*is taking esports to the next level*" (Brambilla Hall, 2020). Likewise, in France, the media narrative was similar. For instance, in March 2020, *Le Midi Libre* headline read "*E-sport, the big winner of this crisis*" (Gounel, 2020), while in July 2020, Europe 1 titled its column La Rétro Sport: "*E-Sport, the lockdown's big winner*" (Europe 1, 2020). Therefore, from an outside perspective, it may be believed that the video gaming and esports industry thrived during the COVID-19 pandemic lockdowns due the capacity for online gaming at home (i.e., social distancing) and the enhanced media attention. However, little attention was paid to actual economic ramifications of the pandemic, particularly with mid-size and smaller esports-related companies.

Therefore, the purpose of this study was to investigate the pandemic's economic impact on the esports industry, taking into account varying types of stakeholders (i.e., primary esports activities performed, legal status, business size), using France as a case example. Guiding research questions included: What were the economic consequences of the pandemic upon the esports market? Did the additional media exposure that esports received during the prime pandemic period (i.e., March 2020 to February 2021) have a positive effect upon esports market

revenue? Has the pandemic had the same or varied impact on the different types of esports stakeholders, based upon their activities, legal status, or size?

While these questions may apply globally, this study targeted impacts specifically within the French esports ecosystem. France holds a unique presence in the global esports ecosystem: Some of the biggest global video game publishers and console providers headquartered or have branch offices in France, (e.g., Ubisoft, Riot Games, Electronic Arts, Activision Blizzard, Microsoft Xbox, and Sony PlayStation); plethora of French esports organizations (e.g., Vitality, Karmine Corp., LDLC OL), tournaments organizers (e.g., Webedia, Gozulting), as well as a well-developed non-profit esports ecosystem (e.g., Futurolan, Lyon Esport, 3 Hit Combo) reside in France for more than twenty years; local public authorities and the French government have supported esports legislative, economic, and social development since the 2016 law for a Digital Republic (Vansyngel et al., 2018). As a result, France is now one of the major esports markets of Europe, alongside Great Britain, Germany, Sweden and Denmark.

To evaluate the economic impact of the health crisis on the French esports sector, a targeted online survey was conducted via purposive sampling method, disseminated both by email and social media networks among French esports industry stakeholders (e.g., esports clubs or teams, event organizers, equipment manufacturers, service providers, agencies, and specialized media). This 10-question quantitative survey mostly centered on items relating to estimated losses and gains in revenue, with additional demographic questions centering on the legal status of the organization, the number of Full-time Equivalent (FTE) positions (i.e., company size), and the main esports-related business activities provided. Data collection was conducted via Google Forms over two time periods, while data analysis (i.e., flat and cross sorting as well as descriptive statistics) were performed using Microsoft Excel.

Results (n = 86 complete responses) indicated the vast majority of the sample (89.5%; n = 77) reporting that the health crisis had a negative impact on their income. Strikingly, nearly one third of respondents (32.6%; n = 28) estimated their losses to be more than 50% of their typical pre-pandemic revenues, primarily impacting companies with fewer employees (i.e., smaller companies). Conversely, only 4.7% of respondents (n = 4) reported that the pandemic positively impacted revenues. Overall, findings demonstrated an estimated French esports industry loss of revenue between 13% and 26% compared to the previous year. This study's results confirm, to some extent, other findings observed in Spain where esports industry losses

were estimated at 23% for 2020, or more than 8 million euros within the Spanish esports market estimated at 27 million euros (Asociación Española de Videojuegos, 2020). Moreover, these results correspond with the data from the esports market research institute Newzoo (October 2020 Update), which reported that for the first time since the banking and financial crisis of 2008, the global esports market experienced an economic regression (i.e., minus 1.1% in 2020 compared to 2019).

Findings indicated these reported massive losses may be explained by: 1) the multiple cancellations or postponements of (inter)national esports in-person events within France and surrounding regions that could have resulted in a lack of ticketing and other on-site revenues; and, 2) the suspension or postponement of economic partnership agreements (e.g., sponsorship) with teams or tournament organizers.

Contrary to appearances, the organization of exclusively online competitions, although particularly beneficial for the visibility of the esports sector, does not appear to be a sustainable solution. This presentation will discuss lessons learned from this study that may facilitate the economic sustainability of the global esports industry and related stakeholders.

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# Track: Research Development Session 1

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This session featured a range of presentations describing ongoing work, ranging from individual papers to large-scale research projects and product development. It provided a forum in which researchers presented the current state of their work and were encouraged to highlight specific areas in which they required feedback from their peers. The session encouraged constructive criticism delivered in a friendly and supportive environment. Given the diverse nature of works, both in topic and format, there was no overall theme which guided the content of the session, however, there was a clear focus on issues addressing social, rather than economic or environmental, sustainability.

# A Text Classification Approach to Moderate Harassment in Twitch Communities

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**Keywords:** Linguistic analysis, social media, text classification, Twitch communities.

The Pew Research Center's 2021 State of Online Harassment report showed that 41% of American adults experience harassment online (Vogels, 2021). While this number has been steady since 2017, the severity of harassing behavior has risen substantially over the past three years (Desilver, 2021). Victims of online harassment experience a multitude of detrimental consequences for their mental health, ranging from depression, anxiety, and panic attacks to suicidal ideation (Stevens et al., 2020). Unfortunately, identifying harassment is not easy.

Several studies in the natural language processing domain, like Waseem et al. (2016), require the manual categorization of a sampling of data which is later used to train a classification model. This method assumes language is static and easily categorized. But online communities like Twitch are neither static nor easily categorized. User messages are full of ambiguity making it difficult to detect things like sarcasm and irony which leads to difficulty in categorizing messages as harassing or in good humor (Meriem et al., 2021).

## Twitch

To protect its 15 million daily visitors, Twitch has a series of guidelines for minimizing harm from hateful conduct and harassment. These guidelines include definitions for several kinds of harassment and serve to outline acceptable behavior for new and returning users. Additionally, individual broadcasters post rules outlining acceptable behavior within their individual communities which are moderated by the host and valued community members. But with online harassment being so widespread [6], cyberbullies and trolls disrupt live streams by posting insulting comments ranging from ambiguous negative comments about gameplay to

using racial slurs and unsolicited sexual advances. While Twitch does not condone this negative behavior, and individual broadcasters police the matter in their channels, occurrences still happen and this negative behavior has a contagious effect causing (or allowing) other users to imitate the behavior (Cai and Wohn, 2019).

## Text Classification

Text classification on social media platforms is a common practice for extracting useful information such as opinions, sentiments, and emotional expressions from an unstructured source (Kahn et al., 2009). These tools are used in places like online reviews where users provide product feedback and retailers attempt to programmatically determine the overall sentiment of the reviews. Classification of these reviews is done by manually categorizing a large set of messages, comparing differences across various language categories, and training a text classifier to predict the class for further processing.

For this project, we are using a similar approach to help Twitch communities programmatically moderate chat messages. Using past chat logs from individual Twitch communities, we are building text classifiers that can identify messages as acceptable or not acceptable. But instead of manually labeling messages from past streams, we've automated the process by building language models from the accepted and banned or deleted community messages.

## Method

We've collected 16.1 million chat messages from 45 English-speaking Twitch communities over four months in 2020. The data set was pre-processed by removing non-english messages, messages containing URLs, and notifications from the Twitch platform. Additionally, sessions with low message counts or a low number of banned messages were also removed. The resulting data set contained 3.9 million messages from 38 communities.

The next step was to identify linguistic differences between the two classes of messages: accepted, and rejected1 using hierarchical linear modeling scores for the appropriate Linguistic Inquiry Word Count (LIWC) categories. This analysis confirmed significant differences in language usage between accepted and rejected messages in the categories of positive emotions, negative emotions, sexuality, and swear words. This confirmed that differences existed

between the classes and a classifying model might be successful in predicting inappropriate messages.

## Discussion and practical application

We are currently in the process of comparing the prediction accuracy of five different classifiers. Each classifier has its own advantages and a series of disadvantages ranging from low accuracy scores, overfitting, tuning difficulties, and lengthy training times.

At present, we've had moderate success with Term Frequency-Inverse Document Frequency (TF-IDF) and n-grams. Both methods have performed moderately well in prediction accuracy and reducing False Positive results.

Once completed, we envision the tool working as a Twitch chatbot. Streamers would install the tool and as visitors chatted, messages would be intercepted, assessed, and either passed along to the chat window or quarantined for moderator review. Once a chat session has ended and the streamer goes offline, the bot would collect messages from previous sessions and build a new text classification model. This new model would take into consideration recent changes in the community's language norms allowing the model to self-adapt over time.

We are hoping this text classification approach can be further perfected for a wide variety of Twitch communities (including the esports channels) for the well-being of individuals and marginalized communities.

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# Accountability Games: The Emergence and Dynamics of Accountability for Sustainability in Swedish Esports

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**Keywords:** Accountability, sustainability, esport

## Background and research questions

The sustainability of business operations and corporate responsibility are today considered fundamental concerns for any corporation (Business Roundtable, 2019; Dumay et al., 2019; Eccles & Klimenko, 2019). This means organizational decision makers are held accountable for profitability as well as the sustainability of business operations in relation to a large number of stakeholders. An important issue for research is therefore to describe and explain how it is worked out what counts as sustainable operations in different industries and who is held accountable to whom over what, i.e. to explore emerging structures of accountability in different contexts (Conrad, 2005; Deegan & Blomquist, 2006; Parker & Chung, 2018; Unerman & Bennett, 2004).

In this project we make use of a case of emerging structures of accountability for sustainability in which very little in terms of pre-existing institutional structures of accountability exists: the world of Swedish esports. A key characteristic of this context is the lack of legitimised central governance as bottom-up resource allocation has characterised a rapid growth since 2014, driven by a youthful passionate audience that are digitally savvy and goal orientated (Scholz, 2019; Newzoo, 2020). A multitude of national and international stakeholders, both commercial and non-commercial, continue to negotiate structures, legitimacy and accountability within this 25 billion dollar industry. Sweden, as one of the early successful countries within this realm,

hosts a range of actors that continue to negotiate accountability and legitimacy within areas such as commerce, education, national governance and society. Exploring this case, our aim is to contribute to theorising the process of how accountability relations arise and are renegotiated in a way that is relatively abstracted from the influence of legacy institutional structures of accountability shaping these relations.

The research questions guiding the project are:

- What does sustainability mean in the Swedish esports sectors and who or what is held accountable to whom over what (i.e. structures of accountability for sustainability)?
- How do structures of accountability for sustainability unfold in Swedish esports and what determines how they unfold?

**Theoretical departure**

The accounting literature considering accountability for sustainability, has particularly focused on the reporting of (often listed) corporations (Miles & Ringham, 2020). The notion of a 'social contract' to which firms must adhere to get a 'licence to operate' has been particularly influential for conceptualising the external expectations, to which firms according to legitimacy theory will adapt their sustainability reporting (e.g., Deegan, 2002). The literature has, however, arguably no strong theory about how and to what extent firms and/or individuals develop a strong identity as socially responsible to form a basis for this type of accountability, typically assuming that the profit motive will have primacy. In this study, we will draw on structuration theory (Giddens, 1979; 1984) for theorising the processes of how accountability relations pertaining to sustainability arise and are renegotiated over time. As the theory places the limelight on the interplay between reflective action by individuals (e.g., identification, assuming responsibility, providing accounts) and the structural properties of social systems (e.g., external demands to take responsibility, calls for accounts), structuration theory is useful for addressing important gaps in the literature on accountability for sustainability.

**Research design and expected contribution**

Our proposed research design includes an in-depth case study of the Swedish esports community which will allow us to capture the dynamics of the formation and reformation of accountability relations pertaining to sustainability. We will collect data that covers the

historical development of Swedish esports, including formalized responsibilities pertaining to actors within the sector and their relations to other actors within and outside the field. In addition, we will interview key actors within the field, review annual reports and publicly available material on key organizations as well as study how esports and gaming have been debated in the media since its emergence.

Our analytical approach is inspired by critical discourse analysis (Fairclough, 2003), an approach for closely analysing language (e.g., how actors describe their responsibilities or formal accounts) in its societal context with a focus on how societal structures of power, meaning and morality forms the conditions for discourse.

While the main purpose of this project is to contribute to the knowledge about sustainability issues in the esport industry in general (e.g. Scholtz, 2019) and the esports industry in Sweden in particular (e.g. McCauley et al., 2020; Cestino et al., 2021) an important aim is also to contribute to the knowledge about sustainability and accountability.

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# Combating Game-based Toxicity and Harassment: Challenges to Ensuring Safe and Healthy Spaces in Esports

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**Keywords:** Games, toxicity, toxic, harassment, griefing, hate.

Despite the immense potential of esports, competitive games are also platforms on which players can experience or witness harmful behaviours like toxicity and harassment. These harmful behaviours have become more problematic and widespread, with recent reports indicating that 83% of adult gamers experienced harassment in online multiplayer games (Anti-Defamation League, 2021).

In this talk, we argue that toxicity represents a threat to the social sustainability of esports. We will provide an overview of the current state of research on toxicity and harassment in competitive games and highlight why it is difficult to combat. Using findings from prior and our own research, we exemplify some of the technical and social challenges of combating toxicity in esports.

(C1) Toxicity is normalized in competitive gaming communities. Prior work (Beres et al., 2021) showed that players often do not report toxicity because they think that such behaviour is acceptable, inevitable, or typical of games. As it is also often cyclical, i.e., toxicity leads to more toxicity (Beres et al., 2021), we argue that this cycle must be interrupted.

(C2) The subjectivity of what is toxic is a complex challenge. If we cannot agree on what is acceptable and what is not, how can we hope to combat such behaviours? We know that individuals perceive toxicity at differing levels of severity and that many factors contribute to this, such as susceptibility to online disinhibition (Beres et al., 2021), game expertise (Beres et

al., 2021), and identity (Goyal et al., 2022), which complicates a shared understanding and enforcement.

(C3) There is still a lack of widely accessible and meaningful tools to detect toxic behaviour. While there is ongoing work on toxicity detection methods (e.g., Reid et al., 2022a, Harris, 2020, Chapman & FACEIT, 2021), they are often limited to specific communication channels (Reid et al., 2022a), unsuitable to account for context (Frommel et al., 2020), reliant on objective ground truth ratings, or proprietary (Harris, 2020, Chapman & FACEIT, 2021).

(C4) There is a lack of support for people experiencing or witnessing toxicity in competitive gaming contexts. Most current approaches to address toxicity focus on punishing toxic players—for example, muting, reporting, and banning. While these approaches are important, they are also sometimes underused or misused (Beres et al., 2021), and still leave targets and witnesses harmed. Previous findings (Reid et al., 2022b) indicate that support mechanisms for targeted players may help them cope with negative experiences. Such approaches may be useful but have not been integrated into esports environments. This is further complicated by questions about how to enable this in a way that is effective, unobtrusive, and accepted by players.

There are multiple reasons why toxicity and harassment are a threat to the social sustainability of competitive esports. First, training in toxic cultures may be detrimental to the athletes' performance, harmful to their mental health, and potentially contributory to burnout. Second, esports athletes are public figures. With that, they are both a) often directly targeted by toxic behaviours, and b) influential in defining what is normal and acceptable behaviour. Thus, toxicity further burdens athletes as they are both more affected, but simultaneously need to remain positive examples to the community. Third, minority players (e.g., women, LGBT populations, and people of colour) are disproportionately targeted by toxic or harassing behaviours; we must address the hostile behaviours to make esports communities safe spaces for all and to encourage continued and diverse growth.

With this talk, we provide an important reminder that toxicity is and remains a problem in competitive games and esports. It is a call to action that we must and can do more to ensure that esports are safe spaces for everyone, which requires concerted and continued efforts of everyone involved in and around the scene, including game developers, esports organizations, researchers, industry stakeholders, communities, spectators, and players.

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# Cross-leveraging: What Can Sports and Esports Learn from Each Other?

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**Keywords:** Wellbeing, wellness, learning, collaboration, return on investment, high performance.

Over the last 3 decades a combination of exercise and sports science, technological advancement and experiential studies of teams, coaches and athletes has led to progressively more nuanced knowledge about the human body. Although nowadays collaboration of practitioners in sports and scientists towards answering questions together is common, such curiosity driven collaborations were rare. Despite early scientific advances in understanding basic principles of training, as well as practical findings gathered by experienced coaches and athletes in the field, collaboration for and application of science was quite static. Furthermore, despite the decades of advancement - or perhaps because of the decades of advancement - traditional sports were generally static. Deviation from the traditions, changes to rules, and new approaches take months or years to implement.

Esports, on the other hand, is a nascent industry where best practices are yet to be developed. It is not uncommon for a skilled player to take on coaching despite no experience or training in coaching - something that used to be common in traditional sports in the past. Such “legacy “approaches in training methods may have led to issues for esport athletes, such as early retirement, ineffective strategies, and health risks. Ironically, traditional sports only recently started realising that focusing on holistic wellbeing for individual athletes is not only beneficial to their general health but also their performance. Furthermore, it is well established in the business world that wellbeing driven work culture can produce a ROI of at least 2.3x. The general workforce might be far less inclined to adapt to wellbeing practices than an athletic population, making it reasonable to assume that investing into the wellbeing of sports and esports athletes will have much greater ROI and economic sustainability. Thus, it appears that despite a significant amount of lessons learned from science, traditional sports are still playing

catch-up, and esports with its recurring burnout themes of young adults is not really taking advantage of the knowledge that was, or was not, applied in traditional sports and business. Maybe, as suggested by some authors, the practitioners of exercise and sport science are not ready for esports to “grow up” into a professionally supported activity.

That being said, esports, due to its relative early state and the nature of games, encourages adynamic approach to development, whether in-game or out-of-game. As such, esports has created innovative approaches to training; taught players and teams to be adaptive; improved creative problem solving; all without the necessity of physical proximity, something uncommon in traditional sports.

Though esports is a nascent industry, it is fast adopting tools, strategies, and technology from traditional sport science. There is a desire to improve player development, performance, longevity, and overall wellbeing. As a result, the decades of sport science foundation is starting to influence and overlap with esports. A new question arises from this transfer of knowledge: is most traditional sport science applicable to esports?

We will be exploring the topic of what esports can and should be adopting and learning from traditional sports in terms of approach, strategies, and tools. That being said, we don’t believe itis a one-way transfer: the static nature of traditional sports can benefit from adopting strategies, tools, and skills from the ever-changing, innovative industry of esports. By exploring the cross pollination of these two performance-based and competitive fields, we can further advance the approach for both sides, ultimately leapfrogging the development of both traditional sport and esports athletes.

# Competitive Playing, Mobile Games, and Social Diversification within Brazil.

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**Keywords:** Mobile gaming, esports, diversity, Brazil.

Esports, as often imagined, a competitive computer setting with broadcast production was present in Brazil as in other markets despite differences in structure, proportions, and international reach. However, mobile gaming within a competitive setting, as leisure, consumption, and work opportunity, has flourished in the Brazilian scenario recently and mobilised the scenario more intensely. Therefore, this work in progress aims to explore some of the modifications and diversification still in the curse providing context to that local and yet connecting it to an international context. The proposal is the start of a much-needed discussion about the enhancement and social contributions of esports – with the possibility to expand it to digital media – to the contemporary landscape, mobile gaming – competitive or not – and so-called peripheral areas with vast markets for growth as is the case of Brazil.

Nonetheless, the methodology of this work is currently rather loose. I have collected a variety of materials in different formats since 2018 for other investigations related to gender-sexuality and race, but I observed that mobiles were becoming mentioned and the hot commodity as other competitive tournaments were facing difficulties such as the case of Overwatch Contenders SA, casters and players audience started to talk more about mobile games, for example. So, I am in the process of delimiting the scope of this work, which will operate with a qualitative investigation. Producing analytical generalisations from qualitative materials is not an approach with a clear path (Halkier, 2011). The author suggested some proposals to defend the arguments that it is possible to contextualise the specificities and yet cover the "dynamisms, ambivalences, conflicts and complexities" (p. 788), which resonates with the state and pace of esports.

Like other countries in South America, Brazil has had difficulties regarding access to technology for playing. They were – and still are – not readily available because of their price after taxation and average income. (Taden-Penix, 2016) Consequently, the country has seen

various arrangements to facilitate playing, such as LAN-houses centres, info-centres, renting, borrowing, sharing, and purchasing from official and unofficial marketplaces (e.g., Nemer and Chirumamilla, 2019). Brazilians have experienced an economic period that was favourable towards the consumption of lower- and middle-income classes, and the access to technologies such as mobile represented a significant mark not only in consumption but belonging and citizenship. (Pinheiro Machado, 2014 and Pinheiro-Machado and Lucia, 2020) Therefore, such modifications allowed Brazilians to be among the top users and consumers in the world, from applications to F2P games. This initial playing and daily practice could be considered the initial basis for the upcoming expansion of mobile games we have today.

Nevertheless, the country's depiction and gaming culture at national and international levels have been characterised by mostly negative discourses. Brazilians became known for their ambivalent playing behaviour in online gaming environments (Fragoso, 2014) and its historical violence and social struggles became not only the playing background but element of narratives from popular and mainstream franchises such as Max Payne 3 (Rockstar Games, 2012) and Rainbow Six Siege (Ubisoft, 2015) with the Operation Skull Rain. These titles exemplify how othering constructs an imaginary and has the potential to influence players' perceptions, which in this case happens to reinforce racism, for example. (see, Leonard, 2016, Fordyce et al., 2018, Gray and Leonard, 2018)

Brazilian demography and the player population are diverse. According to marketing reports conducted annually, the distributions of gender were balanced. However, whit the popularity of mobile games, there has been an increase of players of colour coming from low-and-middle income stratifications. (e.g., PGB 2021) Moreover, pro-players, streamers, and consumers of mobile competitions tend to be more diverse than PC modalities such as League of Legends (Riot). Some grassroots initiatives have been organised around these contexts, such

as Copa das Favelas (Favela’s Cup), which is exclusive to competitors living in favelas. This reterritorialisation is a proactive initiative that got stakeholders' interest and partnership. Therefore, stakeholders’ awareness of opportunities, made them invest in adapting their communication strategies by adopting similar language and aesthetics of target regions and profiles; thus, exemplifying interrelation between stakeholders and an opening for sustainable development of social business. (Scholz, 2019 and 2020) One example of such is Garena

(SEA), responsible for Free Fire (Garena, 2017) which occasioned both popular and successful campaigns and conflicts over regulating of competitive tournaments.

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# Esports and Education – With a Focus on Young People with Disabilities.

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**Keywords:** Education, young people, disabilities.

Esports is a wide spread cultural phenomenon in the 21st century. It is a dominant youth cultural expression in many countries, from east to west, and the industry's revenues increases exponentially each year. (In 2018 the sum for that, only in the US, was $100 millions.)

Piggybacking on the sport phenomenon, at least nominally, it differs greatly from its elder sibling as to some decisive (arguably paradoxical) aspects: Its capitalist preconditions, its fundamental grassroots and community culture, and its conspicuous lack of, or inconsistencies regarding formalization, regulation and organization.

In connection to this, and which this paper will delve into, another area in which eSport hasn't been thoroughly established is education. There are numerous instances of how eSport and education have begun to mire during the last two decades, but no comprehensive discussion on the conditions and arguments for their fusion.

Firstly, we will make a brief scan of sport to see how that phenomenon and cultural practice has fared in combination with education (including academia).

Secondly, we will look into examples of how esport and education have begun to merge, e.g. in relation to young people with disabilities.

Thirdly, we will discuss education in relation to the terminology and metaphors used to comprehend the whole phenomenon of esports scholarly. Here, concepts like ecosystem, industry, ecology, party, community, and culture will be focused.

The paper is concluded with some remarks and what the combination of education and esports has displayed, what it could develop into, and, perhaps what it shouldn’t do and become.

# Track: Esports in Culture

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This track approaches the main conference theme 'Sustainable Esports in the Digital Society' from the perspective of cultural research on esports, paying particular attention to critical social issues in esports such as commodification, gender equality, legal rights, and gambling. Patrick Prax provides an important intervention regarding the relationship between esports and consumer culture. Prax suggests that we need to reconsider the role that esports has to participatory culture and the ways in which it might be manifested to benefit civic society. Ståhl et al. provide a work-in-progress study exploring how visual norms shape extended play within a Nordic esports scene. Through a mixed methods approach they demonstrate how a specific type of esports aesthetic appears to be (co)constructed both culturally and individually from the player perspective. Miia Siutila and Maria Ruotsalainen examine the cultures of discipline in two esport titles, League of Legends and Overwatch. Their preliminary findings underline that approaches towards punishing transgressions in organized esports can vary and are rooted in the motivations of the game publishers. Josh Jarrett's work extends the conversation on the role of the game publishers within a sustainable esports. Through highlighting players spending practices in games with large esports followings he forecasts findings important to framing the political economy of games, esports and their publishers. Tsubasa Shinohara argues that from a legal perspective it can be considered that the esports publishers in the esports society have a similar status as independent states in the international society. This represents a barrier to a unified institution for all esports stakeholders, due to publishers possessing exclusive rights to use their games for competitions under intellectual property law. The final work by Topias Mattinen and Joseph Macey explore 'gamblicifation' through the results of a case study of Magic Arena, a contemporary digital version of Magic: The Gathering (MTG). Their findings illustrate the pervasiveness of loot box mechanics in games and issues in legitimizing a game as an esports title that is arguably dependent on luck and "pay-to-play/win".

# Esports between Civic and Commodified Culture

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**Keywords:** Participatory culture, power, co-creation, commodification, civic culture, commodified culture, sports, culture, agonistic pluralism.

Esports is rapidly growing both as a youth hobby, an industry, and an element of contemporary culture. Sports is typically seen as a place in civic society that fosters creative participation and democratic engagement in young people. However, while esports is developing into an ever-more widespread phenomenon, we are lacking an analysis of its relation to civic society and democratic participation, especially for young people. This might lead to a situation where government agencies, municipalities, NGOs and businesses develop policy, activities and enterprises blindly or guided by short-sighted economic interests. For example, there is a real risk for Swedish civic society of a generation of youth who mainly conceptualize themselves as customers of a commodity instead of participants in a shared culture. In esports there may be potential for civic engagement, participation and organization, but it is unclear to what extent this happens.

This research project will study esports as participatory culture and a kind of cultural industry, with a focus of young people's' civic participation in and through this emergent culture. The notion of participation and participatory culture focuses on the power position of participants - to what extent are they able to influence how esports culture is shaped. Esports as participatory culture can then serve as a contrast to commodified culture. This contrast stresses the possible role of young people as active players, event organizers and community leaders, roles that reflect the notions of civic society and democratic citizenship. This project asks if and how esports can be seen as a part of civic society, and how these relations are organized.

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This research project is aiming to analyze the role esports plays as a part of civic society in Sweden by investigating different stakeholders in esports as well as their power position within this culture. The following two research questions are posed:

- How can we understand esports as participatory culture and a part of civic society?
- How does the production of esports as a commodity interact with its role as sports and culture?

On the side of critical media studies this project draws on the framework of political participation (Arnstein, 1969; Carpentier, 2011, 2016a, 2016b; Jenkins & Carpentier, 2013). Arnstein's ladder of participation (1969) is a theoretical tool that can be used to classify the power relationships of participants in each process and that has been developed using examples from citizen participation in democratic institutions. It highlights the power positions and imbalances of participants in the process. This tool has since been developed further for more general use by Carpentier (2016b). The focus on power relationships in participation and the possibility of participants to defend their interests and perspectives has more recently also been connected to the notion of agonistic pluralism (Mouffe, 2013). Agonistic pluralism is an alternative to consensus as an aim for a democratic society. This view on democracy asks if participants like actors in civic society have the necessary power-

position to defend their interests and a successful democracy is one where even disempowered groups can have a say as relevant participants in the process. Both frameworks are useful in the context of player participation in cultural production, such as where players act as co-designers of digital games and have influence over cultural policy. This approach also exists in game studies literature about productive gaming culture which argues for the impact and range of player creativity not only in terms of consumption but also the making of games culture (Pearce, 2006; Pearce, Boellstorff, & Nardi, 2011), and where it has been used to examine esports (Witkowski et.al. 2013; Witkowski & Manning, 2018).

In many studies (for example Coalter, 2007; Kay & Bradbury, 2009; and the collection by Holt, 2016), taking part in organized sports is correlated with increased civic engagement, as measured for example by taking part in elections, volunteering for community work or following news. Other studies have examined the specific conditions under which sports can lead to such engagement, finding that engagement in sports increases social capital more generally. From a psychological standpoint, Positive youth development (PYD) is seen as an outcome of taking part in sports (Holt, 2016). Organized well, sports are understood as a context in which youth can learn to engage with society and learn to partake in democracy. However, some researchers also warn of 'sports evangelists' (Coakley, 2011), who tote the all-positive effects of sports participation rather than providing a critical and more nuanced view of how sports might contribute to youth development, democratic participation and learning.

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# Exploring Constructions of a Situated Esports Aesthetic Within and Outside Gameplay in a Nordic Context

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**Keywords:** Esports aestethic, esports, player perspective, video games, visuality

## Theoretical Background and Literature Review

Video games are "constituted by the images on the screen" (Rose, 2016, p. 88) and game graphics are often discussed by the audience (Johnson, 2019). Further, Kirkpatrick (2011, p.1) argues that video games are a "historically specific instance of an aesthetic form" and should be viewed through the aesthetic lens to be understood. Despite the relevance to the gameplay experience, there is limited academic discourse on visuality in video games, particularly from a player perspective, as the existing studies often focus on game design (see e.g. Salen, Tekinbas & Zimmerman, 2006). Further, research on visuality from a player perspective is both limited and narrow in scope, primarily focused on player in-game representation and avatars rather than on the gameplay experience as a whole.

## Research Questions or Objectives

To address these research gaps, we will combine situated in-game experience, organisations' official communication within the context as well as documentation from an esports event. Taken together, these three perspectives and visual datasets provide insight into visuality within an expanded view of play. The aim is twofold: to explore how an esports aesthetic is

constructed within a Nordic esports scene and to see what identities can be (co)constructed within the frames of such a situated aesthetic.

## Method or Proposed Method

This work-in-progress study combines an aesthetic analysis of a wider game culture aesthetic within and outside games based on three datasets: 1) esports organizations webpages, 2) an ethno-case study focusing on an in-game player perspective and 3) visual ethnography from an esports event. The first dataset consists of the communication on the webpages of Finnish esports organizations. The material includes the public websites of 53 Finnish esports organizations; for example, associations, teams and player organizations, competition leagues, educational institutions and esports events. The material (collected in 2021) has previously been analysed focusing on organizations' communication from the perspective of equity and inclusion, including plans, statements and visual material communicating both inclusion and exclusion (Friman, Ruotsalainen & Ståhl, 2022). Here, the focus is on the visual communication of the websites. All websites have some visual material, however the formats used and to what extent varies. In general, the visual includes individual portraits of key people within the organization (photos and illustrations) and event photos, promotional videos, illustrations, logotypes and in-game content.

The second dataset is part of a qualitative case study informed by ethnography or ethno-case study (Parker-Jenkins, 2018) and was conducted (2017-2018) in collaboration with seven focus- group students at an esports program at a vocational school in Finland. The data consisted of seven matches of Counter- Strike: Global Offensive (Valve Corporation & Hidden Path Entertainment, 2012) and four scheduled interviews per team. The participants recorded and shared their matches regularly with the researchers through a secure file sharing service. The research design depended on student engagement due to the physical distance between the researchers and participants. Regular interviews held at the school were recorded and stimulated recall (Pitkänen, 2015) on relevant sequences from the screen recordings was employed, providing the researchers with the participants' thoughts and comments on certain in-game situations. The material has previously been analysed focusing on inclusion, visual agency and identity (co)construction (Ståhl & Rusk, 2020; Ståhl 2021; 2022).

The third dataset is a visual ethnography (Pink, 2013) to be conducted during DreamHack Winter 2022 in Jönköping, Sweden. The data will consist of photographs and authors' field

notes. Taken together, the three datasets will triangulate an esports aesthetic with an expanded view of play: combining event material with in-game perspective as well as official communication by esports organisations. We thereby demonstrate how a specific type of esports aesthetic appears to be (co)constructed both culturally and individually.

## Findings

The focus of this work-in-progress paper is to explore, from a player perspective, how an esports aesthetic is constructed within a Nordic esports scene and to see what identities can be (co)constructed within the frames of such a situated aesthetic. In other words, how does visual norms shape extended play. The first dataset was analysed through Barthe's (1982) levels of visual communication, whereas the second dataset was analysed inductively. Apart from these approaches, we are considering the social lives of images (Awad, 2020) as the media aesthetic of play (Fizek, 2022) as a potential framework for the paper.

The preliminary results show that technology is visually emphasized in both the first and second datasets and thereby part of the situated esports aesthetic. In the visual communication of the esports organizations' webpages, actual technology (such as screens, keyboards and headsets) is present and emphasized in the visual material. Similarly, all weapon skins wielded in the in-game data were either masculine or gender-neutral in terms of colour and patterns with mainly technological and military influences. Thereby, players within this context are shaped by a visual norm of technology and identities are (co)constructed in relation to this norm. Accordingly, the norms shaping the esports scene in general do not only have an impact on the social sustainability of the scene (see e.g. N. Taylor, 2016; 20211; T.L. Taylor, 2009; Witkowski, 2018) but also on the esports aesthetic, and thereby, the visual agency of the players.

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# Examining the Cultures of Discipline in Overwatch and League of Legends Esports

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**Keywords:** Esports, discipline, qualitative research, players.

## Research Questions or Objectives

In our presentation, we examine the cultures of discipline in organised esports. By tracing the cases and practices of suspending, fining, and otherwise punishing the players (and in some cases other relevant personnel, such as coaches) in two esports, League of Legends (Riot Games 2009) and Overwatch (Blizzard Entertainment 2016) we analyze the ways players are controlled and disciplined. Through our analysis of these cases, we ask what roles suspending and fining practices play and what other functions than discipline and control they have.

## Theoretical Background and Literature Review

We situate our examination on a larger paradigm of esport's players working conditions and rights. Earlier research has demonstrated that esports players have at large limited legal and practical rights (Patel 2020). This is due to multiple factors, including the lack of players unions (Patel 2020) and the overall lack of governance in esports (Scholz 2019).

We chose League of Legends and Overwatch for our analysis as they are or have been among the most prominent and popular esports games. In addition, the game development companies, Riot Games and Blizzard Entertainment, also organise and oversee the professional competitive leagues of the games themselves. This gives the two companies immense power and abilities to control the competitive scene of their games and according to Tobias Scholz the two games are prime examples of the development company regulating the scene (Scholz, 2019, 55). In addition, the two companies were chosen as they also have some differences in their approach to esports. While in both cases the companies have chosen to try to franchise

the top competitive leagues of the games as a means of "control[ing] and steer[ing] the game and everything around the game the way they want it" (Scholz, 2019, 55), Riot Games's approach "could be seen as being quite balanced concerning regulation, while the Overwatch League (OWL) is overregulated" (Scholz, 2019, 55).

## Data and Method

To track down the different cases, we utilised multiple methods. With League of Legends, our data comes from the penalty databases and trackers (EMEA Penalty tracker; League of Legends Esports Global Suspension Database) updated by Riot Games and a fansite (https://lol.fandom.com) that keeps and collects up-to-date information on League of Legends esports including the various competitive rulings issued by Riot Games since 2012. Unfortunately, similar updated trackers and databases were not available with Overwatch League. Thus, to collect this dataset, we utilised extensively the subreddit r/competativeoverwatch where the fans have often gathered lists of fines and suspensions Overwatch League players and coaches have gotten. We used the search words "fine", "discipline", and "suspension" to find the relevant posts.

In addition, we utilise the available competition rules and other documents in our analysis of the cases. While Riot Games has published their competition rules for most (if not all) of the professional and semi-professional leagues online, Blizzard only provides the public with a summary of their rules for professional Overwatch play. However, in 2018 esports journalist Richard Lewis released the full rulebook of the time for Overwatch League and as this is the only complete set of rules available for us, we use that version in our analysis despite the likelihood that some rules have since changed.

For analysing the data, we used descriptive statistics, thematic analysis (Guest et al. 2012), content analysis (Hsieh & Shannon 2005), and close reading for the four cases we looked at more closely. These four cases (two from each esports) selected for closer analysis were chosen based on the resemblances between the cases of the different titles and the wide discussion they gave rise to in the fan communities. Whilst analyzing the data, we have remained sensitive to the cultural and geographical differences between the different titles and various regions they are played in.

## Findings

Based on our preliminary examination of the data, we argue that in both Overwatch and League of Legends esports fines and punishment practices function to display the production of the acceptable kinds of player subjectivity as well as to create a particular kind of image of esports as a whole. At the same time, our analysis highlights the lack of agency and right of players, a theme that has also been noted by earlier research (Patel 2020). In essence, the players have very limited agency in anything related to fines and suspensions: there is no (impartial) way of seeking corrections to the disciplinary actions. When examining the differences between the two esports, it becomes clear that the two companies had different approaches on punishment and fines: RIOT would use fines and suspensions more often and with more transparency, whilst Blizzard Entertainment appeared to use it mainly as a tool for creating certain image of its esports, rather than way of enforcing rules of play.

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# Mind the Gap: The Unsustainable Value Derived from Esports by Its Publishers

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**Keywords:** Esports governance, esports political economy, esports ecosystem, economic sustainability, co-creativity, affective economies, qualitative research.

The esports industry is made up of many different games produced by many different global publishers. A reputable 2021 industry report from Newzoo put the global esport industry's worth at £1.08 billion while other researchers have calculated the overall revenues associated with esports and their games at $24.9 billion (Ahn et al, 2020). The difference between these figures is that Newzoo's figure refers to esports specific revenues such as those tied to events, teams and sponsorships. Ahn et al's figure, by contrast, also includes the revenues of the esports games themselves where in-game cosmetic items are sold in vast quantities. The discrepancy between these figures highlights the ambiguous scope of what is encompassed by esports as the revenues associated with specific games are difficult to account for. Moreover, exactly how dependent the revenues of games are to their esports industries remains a highly under explored area (Jarrett, 2021).

In this paper, the discrepancies between these figures are taken as a starting point for critically considering the role that publishers have in monetising and governing esports. Although critiques of publisher power are nothing new to esports research, with scholars such as Karhulahti (2017) pointing out that publishers wield a problematic degree of 'executive control', this paper aims to highlight why a narrow definition of esports is economically unsustainable. To be more specific, a definition of esports that does not include the full revenue streams of publishers narrows the scope for understanding what types of value emanates from esports activities, both commercial and grassroots. This paper aims to open a conversation into the gaps that are currently missed by our commonplace definitions of esports to point towards new opportunities regarding job roles that may not be traditionally classed as esports roles, such as community managers or designers. Moreover though, the critique of this paper is political *and* economic. Critical perspectives focused on the political economy of games are

well established in game studies (Kerr, 2017; Giddings and Harvey, 2018), however the role that esports serves in these global networks of capital accumulation remains underexplored. A guiding motivation of this paper is to critically inform the extent of esports as a market and to view publisher revenue as a co-created commodity whose value could be shared in a more equitable way.

To accomplish these aims, this paper utilises the responses from an ongoing 2022 qualitative survey of players in-game spending practices. This survey is ethically approved and is concluding in September 2022. The participants for the survey were gathered online, primarily from English speaking sub-reddit spaces dedicated to games with large esports followings. The types of questions the survey includes surround players engagement with games and their esports, for example the amount of time a person spends watching or playing a game, as well as questions related to how a person socially views the game. The survey also asks participants about their spending habits in-game to determine if there is a relationship between how a person spends money in-game and engages with the game's esport. The aim that underpins this methodology is to describe the affective value esports holds for players spending money in-game and to provide data that can better inform our current gaps regarding exactly what the esports industry's value is.

By focusing on the spending practices of everyday players, this paper provides insights into a currently ambiguous site of value for the esports industry in the form of in-game microtransactions. These microtransactions could include any purchase in an online marketplace, for example a skin, a battlepass or a loot box. Crucially here, the aim is to establish what role a person's esports engagement serves in influencing these in-game purchases. For many games operating with microtransactions, esports may not be a significant part of a person's experience with that game. However, for games with a large esports following such as *League of Legends, Valorant* or *Counter-Strike: Global Offensive*, the role of esports in keeping players engaged and spending money is currently unclear. Through focusing on spending practices of everyday players, the role of esports is given scrutiny in the wider context of in-game monetisation.

In the field of games and wider digital media studies, this research follows a well-established line of inquiry surrounding the value of affective interactions and the increasing valorisation of previously unmonetised acts (Andrejevic, 2011; Hills, 2015; Woodcock and Johnson, 2019;

Zanescu et al, 2020; Brock, 2021). Watching or participating in an esport event is an activity that can be both exciting and enticing but focusing on the activity itself misses its wider role in affective models of monetisation. With these affective models of monetisation generating revenues in the tens of billions of dollars, it is essential to understand esports activities in the more global scope of publisher revenues to better inform stakeholders across the ecosystem.

Through highlighting players spending practices in games with large esports followings, this paper provides qualitative data important to framing the political economy of games, esports and their publishers. It is a further motivation of this research to inform critical understandings of the value games publishers derive from esports activities, in turn helping various stakeholders in the ecosystem grasp the full significance of their activities. If, for example, a grassroots tournament is held through the commitment, expertise and passion of those organising, playing and even watching it, critical analysis must take place regarding the value derived from publishers. This paper aims to open a conversation surrounding the co-created value of esports, and what steps need to be taken to create a more equitable and sustainable future for all stakeholders involved in the space.

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# The Road to A Common Legal Framework for the Esports Society through the Lens of International Law

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**Keywords:** Esports, international law, common legal framework, sovereignty, copyrights.

Esports ('electronic sports' or 'competitive video games') have become an attractive economic market for business enterprises (Newzoo 2022; Wilson 2022; Tristão 2022). Thanks to this development, the number of esports players, especially younger age, has dramatically increased and some esports players become professional esports players (Deloitte 2021a; Deloitte 2021b). These professional esports players now earn prize money at the esports competitions (Statista 2022), financial and material supports under players contracts and sponsorship contracts (Herpy 2022; Lavelle and Faint 2021; For contracts with minor esports players, see Brabners 2021), and live streaming earnings via Twitch and YouTube (Newzoo 2022; Jungar 2016).

In this situation, there is no unified institution for all esports stakeholders (*fragmentation of esports society*) because esports publishers possess their exclusive rights to use their video games for esports competitions under intellectual property law (i.e., copyrights law). Due to this situation, esports publishers have dominant power over the esports society. Based on this understanding, the purpose of this article is to consider how the esports society may create a common framework for the protection of common interests in the esports society. In doing so, this article will examine the following research questions: (1) How do states establish common framework for the international society irrespective of the state sovereignty? (2) How do esports publishers dominate the esports society under copyrights law?; and (3) How should the esports society establish an international discussion forum for setting up the common framework for all esports stakeholders with reference to the discussion of international law?

To examine these questions, this article will refer to the fundamental principle of international law, that is *state sovereignty*, that have been recognised as an exclusive right of independent states under international law (Gaeta et al. 2020). From my perspective, this concept seems to be similar with 'copyrights' of esports publishers in the esports society because, as have been

mentioned above, they have dominant power over the whole esports society. According to the copyrights law, it is difficult for the esports society to establish a common framework that may achieve the common goals among all esports stakeholders in the esports society. In this situation, it can be considered that the esports publishers in the esports society have a similar status as independent states in the international society. Therefore, the understanding of international law can give us an insight of how esports publishers should restrict their exclusive rights in order create a common framework for protecting common interests in the esports society.

In light of the foregoing, this article will be divided into the following sections: After this introduction, this article will skim through the concept of *state sovereignty* guaranteed by international law and identify how sovereign states establish a common framework to achieve common goals within the international society. Furthermore, it will explain dominant power of esports publishers over the esports society under copyrights law. Based on these understandings, this article will finally consider how the esports society can achieve this ultimate goal to establish an international esports institution which may provide a discussion forum for all stakeholders to form the common framework in esports society.

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# *"Boosters, please":* A Case Study of Gamblification in Magic: The Gathering Arena

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**Keywords:** Booster pack, loot box, seasonal pass, Magic the Gathering, gamblification.

The constant presence of contemporary digital technologies has been evident in many things, but also in the increasing number of hours spent per week playing digital games, especially among young people (Kan, 2021). As gaming has reached previously unseen popularities, many digital games have embraced design choices that incorporate elements from traditional gambling (Macey & Hamari, 2019). One common example of this convergence between gambling and digital gaming has been loot boxes; described often as randomized rewards that offer the player something in exchange for their time and/or money (Schwiddessen & Karius, 2018). According to a recent meta-analysis, excessive loot box consumption has been linked to mental health issues, such as problem gambling and problem video gaming (Spicer et al., 2022). Recently, there has been much discussion over whether specific loot boxes can be considered as gambling (Griffiths, 2018), leading some countries to propose regulations regarding specific types of loot boxes (Partis, 2022). This overall process of incorporating gambling references and elements into digital games, especially for monetization purposes, has been recognised as one aspect of the gamblification of digital games (Macey & Hamari, 2022).

Recently, there have been efforts to understand the gamblification process by analyzing game platform economies (Zanescu et al., 2021a), and how specific games have been gamblified (Zanescu et al., 2021b). However, more research is still needed on the effects of gamblification on specific games and platform economies. To address this research gap, this study presents the results of a case study of Magic Arena, a contemporary digital version of Magic: The Gathering (MTG). Magic Arena offers valuable lessons as an object of study, both due to its connection to the loot box-booster pack discussion, and the fact that MTG Arena can function as a bridge between the digital and the physical worlds, an aspect that many digital games today

lack. This bridge allows for interesting comparisons, as analysis of the design spaces and mechanics of a digitized environment will shed light on the processes of gamblification. Analysis of the game client also allows for an in-depth look into the sustainability of the game, both in respect to economic and social sustainability; notable issues exist when trying to legitimize a game arguably dependent on luck and "pay-to-play/win" as a serious esports title.

The Magic Arena client offers a wide variety of in-game events, some with an in-game gold entry fee, and some accessible via premium currency only. Due to the inherent randomness of both being a draw-based card game, and the land-mana system employed that requires a player to draw specific cards to essentially play the game, means that some games can be decided solely on who draws better. Keeping this in mind, the win rates required to break even in some of the events can be incredibly demanding. Naturally, as some of the more premium events, like the qualifier events for the *Magic Arena Championships* (Wizards of the Coast, 2022a) offer substantially high in-game currency rewards, there is a motivation to compete in these events for the in-game prizes. As the game client often offers these types of high-risk, high-reward type of events to players, and more casual events that require above 50% win-rates to break even, there is a potential argument to be made that playing some of these events is itself a form of gambling, akin to other skill-based gambling games, such as poker.

Through analysis of the game's *seasonal pass* (Wizards of the Coast, 2022b), some troubling design elements were noted. For a player to access the contents of the pass without paying for them, they would essentially need to continue playing the game multiple times a week to complete the quests to gain the XP points necessary for progress on the set mastery pass. The system is designed to gate daily progress by only allowing three daily quests at a time, and having progression locked behind completing these quests. By showcasing all of the achievable rewards, and locking most of the rewards behind a premium currency purchase, the pass encourages a sense of fear-of-missing-out (Przybylski et al., 2013) on the potential rewards. This effect is arguably exacerbated if the player unlocks the premium side of the pass by spending premium currency or real money, thus feeling an increased need to keep up with progression on the pass.

After comparing the attributes most often shared by loot boxes in different games, we argue that booster packs in Magic Arena are reminiscent of what are traditionally thought of as loot boxes. As they are, Magic Arena booster packs are essentially in-game, randomized rewards

that offer players something of value in exchange for their time or money. By looking at features given to loot boxes from both academia and national regulations, we noted that booster packs in Magic Arena do not really have any discernible qualities to them that would separate them from game items that have been previously grouped together with other loot boxes, such as the FIFA Ultimate Team booster packs (MacDonald, 2018).

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# Track: Health and Wellness in Gamers

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Research highlights a lack of knowledge on esports and health such as short- and long-term health issues related to playing esports (e.g., Yin et al., 2020). Existing research reports both positive (e.g., Rudolf et al., 2020; Trotter et al., 2020) and negative relationships between esports, health, and wellness (e.g., Kocadağ, 2020). Given the responsibility for wellbeing as well as the attainment and maintenance of health, gaining a better understanding of potential health risks and benefits is needed to fulfil this task and develop evidence-based guidelines and intervention strategies (e.g., Leis et al., 2021). Focusing on five research projects, this track therefore aims to provide insights into health and wellbeing in esports. First, Hansen and colleagues will present a cross-sectional comparison of musculoskeletal pain prevalence among esports and handball players. Second, McGee et al. report a scoping review on musculoskeletal injuries in video gaming. Third, Ho et al. highlight the role of physical therapy in esports as well as the need for best-practice guidelines. Fourth, Micallef and colleagues discuss the role streamers play in influencing the audience's food consumption behaviour. Finally, Birch et al. address the prevalence and relationships of mental ill health in professional esports players.

# Is Esports Dangerous? A Cross-Sectional Comparison of Musculoskeletal Pain Prevalence Among Young Esport Athletes and Handball Players

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Competitive gaming (esports) is becoming increasingly popular among both children, adolescence and young adults (Lindberg et al., 2020; Nagorsky & Wiemeyer, 2020). More attention is being directed towards the physical and mental health of young esports athletes. As such, there has been an increasing interest in the occurrence of musculoskeletal (MSK) pain and sports-limiting pain and burnout among esports athletes. In a previous study the authors found that 4 in every 10 athletes had MSK pain during the previous week. Of them, 6% had sports-limiting pain (Lindberg et al., 2020). Furthermore, the authors found an association between esports-related training volume and MSK pain as athletes with MSK pain had a significantly lower training volume (-5.6 hours/week) compared to athletes without MSK pain. This indicate that MSK pain may limit esports participation. Although prevalent, no previous study has investigated if MSK pain is more prevalent in esports compared to traditional sports such as handball, which is also popular in this age-group. Furthermore, it remains unknown if MSK pain limits sports participation within both esports and handball. Lastly, no previous study has assessed the occurrence of sports-limiting pain and burnout in young esports athletes and handball players.

The objectives were 1) to compare MSK pain prevalence among esports athletes and handball players and 2) to investigate if MSK pain impact training volume in the two groups and 3) to assess the occurrences of sports-limiting pain and burnout.

Eligible participants had to engage in either structured esports or handball and be 15-25 years-of-age. Esports athletes had to engage in esports primarily through a computer-based game. Demographic data, self-reported musculoskeletal pain prevalence, training volume, sleep patterns, physical activity level and sports limiting pain and burnout was obtained through online questionnaires. The primary outcome was any musculoskeletal pain during the previous week (yes/no).

Seventy-six esports athletes and 175 handball players were included. Forty-eight percent of esports athletes and 80% of handball players experienced MSK pain during the previous week. The likelihood of experiencing MSK pain was significantly lower in esport compared to handball (OR 0.24, 95%CI [0.13-0.43], Chi2 p-value > 0.001). No significant difference in training volume among participants with and without musculoskeletal pain was found within either group. Average total training volume in esports and handball was 22.9 and 8.9 hours/week, respectively. Sports-limiting pain was less common in esports (16%) compared to handball (30%). However, the occurrence of sports-limiting burnout was similar for esports (34%) and handball (37%). As such, MSK pain prevalence is lower in esports compared to handball however, training volume was higher in esports. This is important as esports-related training is sedentary compared to handball.

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# Musculoskeletal Injuries in Competitive and Non-Competitive Video Gaming: A Scoping Review

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The primary objective is to determine the prevalence of musculoskeletal injuries in competitive and non-competitive gaming populations. Secondary objectives include determining 1) which musculoskeletal conditions are most prevalent across game genres/titles, and 2) whether musculoskeletal injuries are more prevalent in competitive or non-competitive video gaming.

Competitive and non-competitive gaming industries have grown exponentially both in popularity and in financial remuneration in the past decade. Likewise, reports of physical health issues related to video gaming has also emerged. A 2020 scoping review found a possible association between increased video game playing time and deterioration in some physical health indicators. However, this review was not specific to musculoskeletal injuries, and no review on musculoskeletal injuries in either competitive or non-competitive video gaming currently exists. Additionally, new studies have been published in this area since 2020, which warrant an updated review. We suspect that few data exist on the prevalence of musculoskeletal injuries within the competitive gaming population, and marginally more within non-competitive gaming populations. Therefore, a scoping review is more appropriate to broadly encapsulate and synthesize the available data, with the option to perform meta-analyses if possible.

This review was prospectively registered on Open Science Framework Registries (https://osf.io/2qh58) MEDLINE, Embase, CINAHL, Scopus, SPORTSDiscus, PEDro, SciELO and Google Scholar were searched. Citation tracking has been performed for included studies and relevant reviews in the field. There are no language or geographic restrictions in the search strategy or meta-analysis. Reference lists of included studies and studies in relevant reviews have also been checked. We included musculoskeletal injuries or conditions occurring due to or during casual and/or competitive gaming activities. These include symptoms originating from injuries to or conditions of muscles, tendons, joints, ligaments and/or nerves; or decreased ability to perform physical functional activities required for gaming. Included studies must 1) report a case of an acute, sub-acute or chronic gaming-related injury OR include reported incidence or prevalence data, 2) report injuries that occurred during the intended use of gaming devices including computers, keyboard/mouse, console, console controller, mobile phone, and tablet 3) report signs and/or symptoms of injuries reported as a consequence of gaming, and 4) published in a peer-reviewed journal. We excluded injuries occurring during or as a consequence of improper use of gaming devices (e.g., falling while using a Wii controller), and injuries occurring during virtual reality gameplay, as with an Oculus or an HTC Vive.

The abstract and full text screening stages have been performed by two reviewers using Covidence software. Assessment of risk of bias and data extraction has also been performed by two reviewers. Any disagreements at each stage has been resolved through discussion with a third reviewer. Missing data has been requested from the authors as appropriate. A narrative synthesis of the findings from included studies has been completed, structured around population characteristic and injury type and frequency. If possible, we plan to perform a meta-analysis on each of the primary and secondary outcomes, for included studies which have reported incidence or prevalence data. We will conduct sensitivity analyses based on study type and quality. We will also assess evidence of publication bias. Subgroup analyses based on game title/genre, location of symptoms or involved/affected anatomical structures, and condition chronicity will also be conducted, if possible.

Results will be available by the conference date. 9,312 unique articles were obtained from the search strategy.

We hypothesize that musculoskeletal injuries are most prevalent in the upper limb than any other body area, and more prevalent in competitive than non-competitive gaming populations.

Results from this scoping review will guide the prevention and management of key musculoskeletal pains and injury. It will also highlight gaps in musculoskeletal injury research in video gaming and inform study designs for future research.

# More than a Game: Musculoskeletal Injuries and a Key Role for the Physical Therapist in Esports

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The esports industry is growing exponentially: more viewers, more support, more money, and more players. Esports competitors require high-level cognitive function and dexterity. There is an increasing demand for physical therapists to manage esports-related musculoskeletal injuries across all levels of play (amateur, semi-professional, professional). Clinicians have relied on general musculoskeletal principles and extrapolating research findings from other populations, including athletes, office workers, air traffic controllers, and musicians, to inform an evidence-based practice approach to assessing and managing injury in esports competitors. The physical demands of esports competitors are triple those of office workers, varying across esports games, platforms (computer, console, mobile), and levels of performance. We highlight the role of physical therapy in esports, the need for best-practice guidelines for musculoskeletal health care, the current research evidence, and the large research gaps in the field.

# ‘What Are You Eating?’ – Can Streamers Influence What Gamers Eat?

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Esports streamers, who include both content creators and professional esports players, attract a large audience of emerging adults, defined as adults aged 18 to 25 (Arnett, 2014). This age group is an important one from a dietary health perspective, as it is an critical period for setting lifelong health behaviours (Gropper et al., 2020; Larson et al., 2012). It is also a time when emerging adults exercise less, eat less fruit and vegetables and eat more energy-dense-nutrient-poor foods (EDNP), such as fast foods and snacks high in salt, sugar and fat (Li et al., 2016; Poobalan et al., 2014). Gaming has also been linked with poor dietary outcomes including increased snacking, meal skipping and a higher BMI (Chan et al., 2022). However, despite the popularity of online games and streaming, not a lot is known about the impact that esports streamers have on the food consumption behaviour of their audience, including emerging adults (Micallef et al., 2022).

This study seeks to address this gap by exploring the conversations that happen about food and drink by esports streamers during live streams and in their social media channels, and to gain insight into how these conversations may be used to engage emerging adult gamers in positive dietary behaviours. Fortnite was chosen as the focus of the study due to its popularity as a

professional esport and its large market share with emerging adults (Statistica, 2020). Fortnite is one of the leaders in esports in terms of revenue generated and the amount of winnings awarded to players through tournaments (Schöber & Stadtmann, 2020). The investigators employed a rapid netnography (Kozinets, 2010) approach to gain insight into the interaction between popular Fortnite streamers on Twitch and their audiences in regard to food and drink. Eleven streamers were identified including a mix of professional players and content creators, as well as varying sizes of followers on channels. Data were collected through the observations of streamer channels on Twitch, and their associated social media accounts over four months from November 2021 to February 2022. Investigators observed both live and recorded video streams, as well as chat conversations during the streams. In the second stage of observation, content on the streamers' social media channels was reviewed to identify content relevant to food and drink. Field notes were recorded during both stages of observation and entered into NVivo.

A thematic analysis of the observation data identified that discussions about food and drink were common throughout live streams and on social media channels. These discussions happened regardless of whether the streamer has a major food or drink sponsor. Organic discussions about food and drink during live streams were often generated by the streamer and originated from the streamer's own eating and drinking behaviours. The longer length of streams on Twitch was also observed to have an impact, as streams often crossed regular mealtimes. The discussion of food also extended to other social media channels, most predominantly on Twitter, where streamers often shared food that they were eating outside of their streams. The investigators did not observe major differences between professional players or content creators in the types or number of discussions about food or drink. Community members were also likely to initiate discussions about food, although this was more common in community-led forums such as Discord. Discussions included community members seeking advice and recommendations for food to eat; or sharing 'foodporn' pictures of food they had either created or purchased. Whilst there was a mix of food and drink options that can be considered healthy and unhealthy being shared or discussed, unhealthy food options often dominated discussions. Investigators also observed a potential relationship between the tone that streamers set around health and the food and drink options that are shared. In communities where a streamer placed an active focus on encouraging good health, the community were more likely to share or discuss healthier options. Food and drink sponsorships were also observed to have a role in stimulating discussions within channels, especially when sponsorship content

was being driven by the streamer. Investigators observed that food discussions on streamer channels tended to gravitate towards the discussion of EDNP foods, except in channels where the streamer placed an active focus on the discussion of positive health.

Results suggest that streamers play a role in influencing food and drink discussions within their channels either through their organic discussions during streams or their curated or sponsored content on social media channels. From a sustainable esports perspective this adds to the body of knowledge about the impacts that esports streamers have on their audience and the role that both esports content creators and professional players have as role models for good health. The study also highlights the opportunity for governments and public health agencies to engage with emerging adult gamers through streaming communities – a channel that is rarely utilised by public health (Lee et al., 2020). This also presents an opportunity for the esports industry to increase its potential for income streams through government public health and in the potential impact that that the sport can have on casual gamers and viewers. Further research is needed, however, to identify whether food and drink content being shared by streamers directly impacts the consumption behaviour of emerging adult gamers and in the testing of healthier interventions that will engage this community.

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# Mental Ill Health in Professional Esports Athletes: Prevalence and Relationships

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Few research studies have examined the predictors of mental ill health in esports. This study addresses the gap by investigating the prevalence and relationships of mental ill health in a professional first-person shooter sample. An online survey was disseminated to professional first-person shooter athletes ($n$ = 72). The survey included measures of stressors resulting from professionally competing in esports (competitive, organisational, personal), sleep quality, burnout, as well as outcome measures of mental ill health. We found that 60% of our sample had experienced symptoms of psychological distress (Distress Screener), 78.7% experienced psychological signs of anxiety or depression (GHQ-12), and 23.6% experienced moderately severe to severe symptoms of depression (PHQ-9), all in the previous four weeks. Correlation analyses examined these relationships. We found that competitive and personal stressors significantly and positively associated with the Distress Screener, and personal stressors significantly and positively associated with the PHQ-9. We also found burnout subscales of reduced sense of accomplishment and emotion and physical exhaustion and the sleep subscales of disturbance and daytime dysfunction significantly and positively associated to all outcome

measures of mental ill health. We hope our findings can inform the development of evidence-based interventions designed to target specific aspects of stress, sleep, and burnout to improve the mental health of those who compete professionally in esports.

# Track: Gender and Participation

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Although esports is rapidly growing as an industry, barriers to diversity and inclusion continue to threaten its long-term sustainability. Many of these barriers are related to gender. Due to longstanding stereotypes that mark gaming and esports as masculinized, women and gender minorities face several challenges when trying to enter into esports spaces. Not only do they experience targeted harassment at higher rates than male players (Ruvalcaba et al., 2018; AnyKey, 2016), but they also encounter more frequent challenges regarding their level of skill (Paul, 2018). Finally, women and gender minorities often find themselves marginalized to specific roles when playing esports titles, expected to serve as healers or support rather than being able to access the full range of gameplay options (Ruotsalainen & Friman, 2018; Austin, 2022).

The six papers presented within this research track address these issues, and suggest potential solutions, through several different lenses. First, Borkowski and colleagues present a survey-based study of women esports players in France, identifying several challenges they face when entering into and succeeding in esports spaces, such as later entry to competitive play. Next, Poeller and colleagues discuss perceptions of esports players' skill, competence, and personality based on voice and gender. They find significant gender-based differences in how men and women are perceived when playing games, highlighting the ongoing influence stereotypes about gaming have on real players. The third presentation, from Koskimaa and colleagues, continues to engage questions of audience and perception through a study in which the authors piloted a tool to analyze Twitch chat structure and dynamics. They also identify conversation patterns related to gender, nationality, and harassment which they discuss in the context of creating more inclusive chat practices in the future. Legierse then presents ethnographic research on the connections between games, masculinity, and sportification to address how gendered infrastructures are built at major gaming events, as well as how players navigate these. Relatedly, the fifth presentation comes from Sundberg and Fagerström, industry practitioners who work for the non-profit organization Female Legends, which works to increase women's and gender minorities' engagement in esports spaces. They present the

results of a Swedish study on barriers these individuals face to success in esports spaces, identifying key challenges such as high rates of harassment, microaggressions, and harsh judgments of women's skill. Finally, Ruotsalainen and colleagues present an initial field survey of women's and gender minorities' esports leagues and tournaments, assessing which options are available to players, how these leagues and tournaments present themselves, and if/how they provide safe spaces for marginalized players.

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# Esports for Everyone? The Case of Women's Players Esports Career in France

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With 9,4 million enthusiasts (spectators and/or competitors), esports in France is gaining more and more media attention. However, only 7 % of the 1,5 million esports amateur players are women (France Esports Barometer, 2021). If esports uses the codes and language of sports to create a legitimate competitive practice which provides positive values (e.g., humility, respect, persistence, etc.) (N. Taylor, 2009), it seems to be built as a predominantly male ecosystem, where the participation of women as competitive players is a minority (Carneiro & Besombes, 2019; Mejia & Le Savoy, 2018).

Multiple factors explaining the lower engagement of women in competitive gaming have already been highlighted in the literature. In this regard, T.L. Taylor (2012) identifies two dominant types of masculinities: the "athletic masculinity" and the "geek masculinity", both reproducing gender stereotypes and sexism. These factors are also apparent in the esports career of women. Their self-representation oscillates between two limits of gendered expectations: "male-centered", where they show some opposition to female stereotypes that can be found in video games and esports; and "female-centered", constrained by the "male dominant" framework of esports (Zolides, 2015). Female players who are "integrated" in this area then set up "compensatory signals" (conscious or unconscious) to assert their femininity in this male field.

This is reinforced by the presence of interactions and hostile speeches in online games. In this case, women are confronted with several forms of toxicity, including specific toxicity against women (Ericsson & Bergstrom, 2020). The consequences on individual career paths are multiple and to the disadvantage of women.

While the literature exploring and identifying the multiple factors explaining the low participation of female esports players is abundant (Rogstad, 2021), several grey areas remain unexplored. Firstly, few data are available concerning the conditions of access to video games, and especially for French esports players. Similarly, the North American context is studied from the perspective of a meritocratic system borrowed from traditional sports which erases gender inequalities in favor of an "equality of opportunity" in the performance (Taylor and Stout, 2020); but we don't know well the influence of the "toxic meritocracy" (Taylor and Stout, 2020) in the French context. Finally, little research has been conducted on the esports socialization of women players: how they socialize to esports, and what effects this socialization has on them and their careers. So, this work aims to (i) analyze the gender inequalities that can be built up throughout the career of an esports player, and (ii) to identify in part the more or less favorable conditions of women competitors.

In this context, an online survey has been distributed from February to July 2022 on social networks (Twitter, Facebook, Discord) among communities of French esports players (i.e., playing ranked games online and/or participating in esports tournaments). 351 responses (284 men, 58 women) have been collected. Survey themes were focused on their esports career: beginning of video game practice, discovery and beginning of esports practice, the current esports practice, and the experience of toxicity in online games/offline competitions. As we know that a large majority of competitive women players do not register for esports competitions, several obstacles to the development of an esports career have been more particularly investigated: players' perception of social acceptance of the video games and esports practices by their family, reasons for not registering to competitions, playing time and age on the entry in a leisure and amateur esports practice.

The data is still being processed but we can already identify that if boys and girls start playing video games nearly at the same ages (average of 7,3 years old for boys with a standard deviation of 3,08; average of 8,7 years old for girls with a standard deviation of 4,48), girls start their competitive practice later than boys (average of 12,38 years old for boys with a standard

deviation of 4,29; average of 15,46 years old for girls with a standard deviation of 6,24). However, women on average register for esports competitions at approximately the same ages (average of 20,8 years old with a standard deviation of 7,38) than men (average of 19,5 years old with a standard deviation of 5,03).

These initial results confirm that women are still a minority in the French esports ecosystem and reasons are multifactorial. They need to be detailed, especially regarding the meaning that the actors give to their actions and experiences in this field and this specific topic.

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# Women Who Win Are Annoying While Men Who Win Are Competent: Double Standards for Personality and Skill Judgments in Competitive Gaming

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**Keywords**: Sexism, esports, gaming, Tekken, social sustainability, diversity.

While competitive gaming and esports should be a hobby or profession open to anyone, researchers frequently report barriers to full participation by women gamers. In skill-dependent games, women are the target of stereotypes about them being less competitive or unskilled (Vella et al., 2020). Despite researchers showing that women acquire skills at the same rate as men (Ratan et al., 2015), can be just as competitive or even more so than men in other contexts, for example tennis (Houston et al., 1997), and that differences in skill levels can be explained by less experience with games or from not being encouraged to play when growing up (Jenson et al., 2007), negative stereotypes about women gamers persist.

In our study, 240 participants watched a video of a round of Tekken 6 (shinobier, 2010). The video featured combat between two animal characters (Panda vs. Kuma). The video was voiced by either a man or a woman as though they were playing (using the exact same words at the same time) and showed the player either winning or losing, resulting in four conditions in a between-subjects 2 (voice gender) by 2 (win or loss) design. Participants were first asked to rate the observed players on different dimensions and later asked what they thought of gender performance in games. Most participants believed that women perform worse in games than men; only 93 individuals said men and women perform equally well, while 134 thought men perform better and 13 indicated they did not know. Results did not differ significantly between participant gender, showing that many women have internalized such stereotypes.

We performed 3 MANCOVAs using the conditions (1: win/loss and 2: voice gender) as well as participant gender as independent variables, ratings of participants (i.e., 1: attitude (competitive, aggressive, calm), 2: personality: (friendly, likeable, annoying), and 3: skill (competent, experienced, confident) as dependent variables and Tekken experience as a covariate. Our participants judged the woman's voice differently from the man's voice, rating it as more aggressive, more competitive, and less calm, but also more confident. This might be because the woman is defying a stereotype by playing a competitive game. Furthermore, the feminine and masculine voice were rated differently depending on whether they won or lost the match. While the masculine voice was rated as equally calm in both conditions, the feminine voice was rated as less calm, more annoying, and less friendly than the masculine voice in the winning condition. At the same time the feminine voice was rated as equally competent and experienced in both conditions, while the masculine voice was rated as more competent and experienced when winning and less competent and experienced when losing. Participants who were men even rated the feminine voice as less experienced when winning the match as compared to losing.

Our results show that when men and women are judged based on the exact same footage and use the same words, intonation, and emphasis to describe their gameplay, the player's personalities are perceived differently. A woman who performs well faces harsher judgments and a higher barrier to convince others (especially men) of her expertise. Our results add to previous findings on sexist views in video games by showing that equal performance does not lead to equal outside perception. Not only might many women not believe that they would be able to perform well in competitive gaming, if they attempt to, their personality is likely to be judged and their talent less likely to be recognized and acknowledged.

These stereotypes may also negatively affect men through the expectation that men always perform well. However, our results show that men are more likely to be judged based on performance. Players might not recognize their own bias in perceiving others, thinking themselves to be objective (Siutila & Havaste, 2019). To fight persistent and harmful stereotypes that make the esports environment unwelcoming to women, we need to recognize flawed thinking patterns in ourselves, that both men and women (who judge other women equally harshly) are subject to. We need to acknowledge that women and men who game with an audience are treated differently (e.g. (Nakandala et al., 2017)) and that gender does not inherently make anyone unskilled at gaming. To make esports more inclusive to women, and

ensure the social sustainability of a diverse and inclusive competitive gaming scene, it is important to remove the stigma that paints video games as a masculine hobby, treat the women who dare to participate with equal respect, and protect them from persisting bias.

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# Understanding Twitch Esports Communities through Livestream Chat Analysis

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**Keywords**: Esports community, social sustainability, inclusion, Twitch, chat, Twitch audiences.

For the esports industry today, social sustainability has been identified as a primary challenge for the sustainability (cf. WCED 1987) of the whole industry (Nyström et al. 2022). Social and mental health, diversity, and inclusion have been identified as the most pressing issues in this area (Nyström et al. 2022.).

Audience engagement is central to the sustainability of any sport. Chat is one of the most distinctive forms of engaging audiences in esports livestreams, and it also gives viewers the possibility to participate in the livestream. Moreover, following the chat plays a significant role in experiencing esports online. The popular livestreaming platform Twitch provides multiple opportunities for audience engagement, all revolving around the chat feature. Therefore, chat plays an important role in the construction of inclusivity for audiences.

There is an existing and expanding body of research on the inclusivity of esports, though it has not always been framed in the context of sustainability (e.g., Hayday & Collison 2020; Ruvalbaca et al. 2018). These studies have also shown the existence of sexism (Nakandala et al. 2017) and racism (Gray 2016) in Twitch chat. However, the majority of the research has used fairly small amounts of data analysed with qualitative methods, with only few studies opening the way to using massive dataset and machine learning methods (e.g., Song, Park & Cha 2021; Loures et al. 2020). In order to form a comprehensive understanding of social

phenomena such as inclusion, a deeper knowledge based on large datasets of the structure of Twitch chat and its contents is needed. Who has a voice in Twitch chat?

To answer this research question, we executed a pilot study in connection to the CS:GO Majors played in May 2022. We chose this event because of the global popularity of the game and the esports surrounding it. Our aim is to analyse the chat structure and dynamics in the Majors but, furthermore, develop tools and methods of analysis to be used in other esports as well. Data in this pilot study consisted of the livestream video, and the chat data collected using the Twitch API. As the Majors were streamed on several channels, we collected chat data from three different channels: (1) PGL, the channel of the primary international livestream, (2) Pelaajat.com, a Finnish esports channel, and (3) YLE, the channel of the Finnish national public broadcasting company. Collecting data from three different channels enables us to make comparisons and perhaps detect phenomena independent of what is going on in the livestream of the game itself. Capturing the chats live provides significantly more metadata in comparison to collecting chats later, when the streams are published on the Twitch website as recordings. The live data collection also includes banned messages, which are not available later on.

We are interested in whether it is possible to discern specific viewer profiles based on viewers' use of the chat. Firstly, we analyse how the amount of chat content is divided among chat users. Additionally, Twitch chat participants have different roles based on their user account - the metadata reveals the roles of admin, moderator, and subscriber. In addition to this, user badges can reveal more detailed information. Comparison of these different types of users with the amount of content created reveals some of the basic dynamics of the chat. Secondly, we analyse the type of content created by users and aim to discern between repetitive (copy-pasta,

common phrases, emoji-only messages) and unique message content. This will reveal potential viewer profiles based on the types of chat participation that are typical for them. For identifying these types of content, we apply natural language processing methods using machine learning models. Twitch chat provides a unique challenge for these methods, as it often includes colloquial language with many specialised expressions specific to game cultures in general, a particular game, or the Twitch platform, or even a particular Twitch channel.

The tools created here will create opportunities for working with large amounts of data, such as making comparisons between different channels or doing longitudinal analysis of changes in chat structure and content. Furthermore, identifying structures and dynamics of Twitch chats

form a basis for further analysis of different communication styles, dynamic relationships between stream content and chat content, and human-in-the-loop analysis via visualisation and retrieval of notable streams, moments, and their similarities and relationships to known demographic and other covariates. On the basis of the chat dynamics modelling, we present initial analyses of how comments on nationality and gender are used in the chat as ways for discrimination and harassment. This is key to creating more inclusive chat practices and services.

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# Strategic Exclusion and the Future for Inclusivity in Esports

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**Keywords**: Gender, masculinity, diversity, inclusivity, exclusion.

Esports have a diversity problem. Most high-stakes competitive environments are occupied by men, and women struggle to break through. Based on a 9-week exploratory ethnographic fieldwork period at the League of Legends European Championships in Berlin, I argue that women are strategically excluded from competitive gaming spaces. This is supported by the presence of masculinities that are toxic and dominant, actively working to keep men in a position of power. Looking towards the future of esports, I argue that these strategic (De Certeau 1984) efforts need to be addressed in order to make inclusivity possible and to ensure the social sustainability of the space and recommend further research.

## Theoretical Background

Gaming is often regarded as an enjoyable and fun leisure activity, but this is not the case for everyone (Trammell 2020). Previous studies on gaming practices and cultures have highlighted the toxic, discriminatory and exclusionary practices that are present throughout a large range of online multiplayer games (Cote 2017, Cote 2020a, Cote 2020b, DeWinter & Kocurek 2017, Eklund 2011, Hussain et al. 2021, Kivijärvi & Katila 2021, Nakamura 2017, Paaßen et al. 2016, Ratan et al. 2015, Ruberg et al. 2019, Ruvalcaba, et al. 2018, Salter 2018, Schelfout et al. 2021, Taylor et al 2009, Taylor 2012, Tomkinson & Harper 2015, Tomlinson 2017, Young 2014). These games are often made for men, by men, which is reflected in the overall design and affordances that these games offer (Conway 2020, Gregory 2011, Monson 2012, Srinivasan 2012, Tompkins & Martins 2021). Although videogames carry an illusion of freedom from offline struggles, social conventions and hierarchies are observed to be reinforced and reproduced (Boellstorff 2008, Nardi 2010). In terms of gender, we see this reflected in a hierarchy that places men above women.

The dominant position of men in the space is by no means a result of natural order, but a continuous hegemonic project that aims to ensure this position for men (Connell 2016). The

critical participation of women in gaming spaces is met by defensive efforts including harassment, discrimination and exclusion aimed at silencing and discouraging women. The events of #Gamergate illustrate the extremity in which these defensive efforts can take place, but should not be seen as anomalies (Butt & Apperley 2018, Chess & Shaw 2015, Mortensen 2018, Salter & Blodgett 2012). Women are regarded as inferior users of technology compared to men and therefore inferior players in videogames (Sundén & Sveningsson 2011, Howard 2018, Jørgensen & Mortensen, Yodovich & Kim 2021). Their supposed effeminate casual way of playing is looked down upon by masculine hardcore gamers.

However, (professional) competitive gaming is a highly specific form of gaming that lends much of its organizational characteristics from traditional sports as a way of gaining mainstream legitimacy through sportification ( Besnier & Brownell 2019, Connell 2005, Emily 2013, Messner 1988, Messner 2007, Pargman & Svensson 2020, Steinkuehler 2020, Summerley 2020: 61, Taylor & Stout 2020). In doing this, esports have also adopted social structures and hierarchies from traditional sports that are often informed by hegemonic masculinity. I argue that the sportification project has led to the normalization and naturalization of the exclusion of women, giving leeway to arguments based on biological notions of difference.

*RQ: How is the gendered infrastructure at the LEC shaped and how is this infrastructure navigated by men, women and others?*

## Methods

The methods for this ethnographic research project consisted of a 9-week fieldwork period from January 13th, 2020 until March 13th, 2020, in which I conducted both participant observation and lengthy semi-structured interviews. Participant observation was carried out mainly but not exclusively during game weekends. 9 interviews were conducted with esports professionals (no players).

## Findings

At the LEC I have observed the presence of forms of masculinity that are toxic, dominant and include sexist attitudes towards women in the space. In multiple interviews participants recounted stories that hinted at the presence of a culture of silence in which sexual harassment

and sexist experiences are not to be talked about publicly. Additionally, so-called '(no-)girlfriend' policies that have existed at teams hint at a discourse that regards women as unwanted participants in the space because of expected heterosexual tensions. I have observed how a group of women navigated this field, actively bridging between the audience and 'backstage' by becoming esports professionals themselves and helping others bridge as well.

## Further Research

The main issue that remains for many of my participants was the absence of women from professional play. Some hold hopes for the success of women only competitions. Women only competitions are currently organized to provide women with opportunities so they can develop themselves and 'bridge the gap'. I argue that, while it is important to provide women with opportunities that they are currently lacking, we should be careful not to herald women-only competitions as the fix-all solution. Strategic efforts to exclude women from 'regular' esports spaces need to be addressed further. I propose an ethnographic study that focuses on participants of women only competitions and their efforts to break into 'regular' competitive infrastructures. This will allow for a better understanding of the potentials and limits that women-only competitions have and further highlight the experiences of women in competitive gaming spaces.

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# We Are Not Going Back to the Kitchen: Women and Nonbinary Participation in Esports

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**Keywords**: Esports, equality, feminism, gaming.

In theory, esports should be a space for inclusion as the skills required for gaming should not discriminate against people based on their gender, skin color, or age (Nyström et al., 2022). In reality however this is not the case and even in one of the world's most gender equal countries, Sweden, women and other minorities can feel excluded from this space. Female Legends is a non-profit organization working to promote women and non-binary people within esports and the wider gaming community. Our ultimate goal is for everyone to feel welcome, included, accepted and represented. We want to help players on all levels achieve their dreams in gaming. The organization was founded in 2016 in Sweden and has since amassed over 3000 members. Female Legends encourage esport as an activity for everyone to participate in, where everyone is treated fairly. Additionally, our members follow the Swedish Esport Code of Conduct (Sverok, 2022) developed by Sverok, one of Sweden's largest youth organizations and an umbrella organization for gaming clubs. The organization's main virtues are openness, participation and community spirit. The organization stands and fights for equality and inclusivity.

We also act as a community platform for girls and non-binary with over 3000 members engaging through Discord and Facebook across Sweden. Online we provide lectures, game nights, digital camps, and education focused coaching and leadership. Twice a year we conduct coaching in the esports titles, Overwatch and League of Legends. We gather a total of 100 people each semester and it provides a secure space for our members to train, learn and compete in these games, remaining one of the most appreciated things we do for the community. Offline, we engage with audiences at many events rooted in gaming and geek culture, including Nordsken, Birdie LAN, and DreamHack. Working with the event organizers, we host a secure

LAN lane at Dreamhack Summer and Winter for community members to engage with the event as part of Female Legends. We have also run many bootcamps, workshops, and events across the country to allow members to take their passion from the digital world and engage with each other in real life.

We have faced a lot of challenges along the way, particularly since many deny the fact that sexism in gaming is a real problem. Their arguments are that all people are welcomed and nothing needs to change because why "fix" something that isn't broken? This was the key driver for the project "Future of esports" where we interviewed 130 girls and non-binary people who had gaming as an interest, and reached 200 survey respondents of both girls and boys between the ages of 13-26. After analysis the results were published in the free online Swedish Language book "Gå tillbaka till köket - varför finns det inga tjejer i e-sport? (Go back to the kitchen - why are there no girls in esports?). The key findings include:

- Girls experience harassment at a higher rate than boys, though both genders are victims of this. The biggest difference is in what type of harassment they're subjected to. While boys are treated poorly due to bad calls or mistakes in-game, girls are subjected to sexual harrassment in the form of sexist remarks, slurs, and propositions for nude pictures or sexual favors.

- Not every match is toxic or sexist but the potential for experiencing it causes stress for girls who have to remain on high alert for potential occurrences in every game.

- Even in the absence of overt harassment this stress is amplified by microaggressions, gaslighting, and exotification.

- Girls are held to a higher standard in-game and mistakes are often met harshly which makes many girls feel as if they are representing not only themselves but their entire gender.

- Girls are more prone to adapt to their teammates, for example by choosing their character last to fill whatever role is left, often typecasted gendered roles such as support or healer.

- The bias against girls is also experienced through societal norms and gendered expectations. Girls are often not allowed to play as much as boys (30 minutes less per

day) or often find their wishes for gifts related to gaming disregarded (Female Legends, 2021).

As part of the challenge for a sustainable future in esports we are committed to making esports a welcoming space for all regardless of gender identity. We can now present supporting evidence of the problems that exist and the need for change in Sweden. The success of this project has inspired a future for a similar project on behalf of the LGBTQIA+ community.

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# Esports Leagues and Tournaments for Women and Gender Minorities

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**Keywords**: Esports, gender, diversity, inclusivity, qualitative research.

## Introduction and Research Questions or Objectives

In our presentation we will discuss our ongoing research concerning professional and semi-professional women's and gender minorities' esports leagues and tournaments. The aim of our research is to map out the current state of these leagues and tournaments in esports as well as to critically examine the way they both combat the gendered nature of esports as well as potentially partake in the production of its gendered nature. In the current esports culture, women and gender minority leagues function as highly needed spaces of safety for these players, creating possibilities to partake in esports for those who otherwise might not be able to do so. However, it is possible that they run the risk of simultaneously naturalizing the separation of leagues based on gender and further marginalizing these participants. We will situate our examination in the historical context of women and gender esports minority tournaments.

## Theoretical Background and Literature Review

This study builds upon existing research on gender in esports, gender in gaming, and gender in traditional sports. Earlier research has demonstrated that both game and esports cultures are dominated by toxic and harmful behaviors and practices, targeting women and minorities in particular (e.g. Cote, 2017; Darvin et al., 2021; Richard & Gray, 2018; Ruvalcaba et al., 2018.). Despite the fact that the challenges women and minorities face in esports are now well known and well documented, esports continues to be an endeavor dominated largely by White and

Asian men (e.g., Fletcher, 2020). The majority of professional esports players are men and other genders continue being severely underrepresented. One of the ways esports organizations and esport game developers have seeked to address this disparity is by establishing separate leagues and tournaments for women and gender minorities and creating structures supporting or encouraging organizing these leagues and tournaments (i.e. RIOT Games' VCT Game Changers, ESL's GGForAll). These leagues and tournaments and their impact are however severely under-researched at the moment.

## Method and Data

We are currently collecting research material on women's and gender minorities' esports leagues and tournaments, limiting our selection to material that is freely available online and is in English. In this presentation, we focus particularly on marketing material in order to analyze the way these leagues and tournaments are framed and portrayed by the organizers. In our analysis, we will focus on the way women's and gender minorities' esports leagues and tournaments are situated within the field of esports, the way they partake or resist the construction of esports' gendered nature, and how they function to provide safe spaces of play for women and gender minorities. To analyze the data, we will be utilizing reflexive thematic analysis: a qualitative analysis method in which the researcher actively and reflexively engages with the research material to identify the significant patterns of meaning within the material in relation to the research question (Braun & Clarke, 2021).

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# Track: Esports and Education

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The number of esports education programs continue to rise globally (Jenny et al., 2021; Jenny, Gawrysiak et al., 2021). Quality programs teach transferrable skills which are needed within the esports ecosystem and other job sectors (Scott et al., 2021). Esports can be used as a tool to motivate students and teach knowledge, skills, and competencies within a holistic learning experience. There are six papers presented within this "Esports and Education" track at the 2022 Esports Research Network Conference. First, Trotter and colleagues offer an examination of the impact of school esports program participation on student health and psychological development. Next, Becka and colleagues discuss how an esports training space may impact students, teachers, and graduates, as well as complement the higher education, at a public university in Argentina. In addition, Rusk and Ståhl provide an analysis of gaming inside and outside of school from the Finnish student player perspective. Fesharaki and colleagues then describe the development of a dual career higher education program being launched at Jönköping University in Sweden that aims to offer opportunities for student athletes in both esports and traditional sports. Moreover, King and Burton examine varying perspectives regarding mental health, burnout, and performance with a United States collegiate Overwatch esports team through single case design. Last, Gortari and colleagues research the motivations to enroll in high school esports programs in Norway while investigating gaming habits and potential mediators for motivations and risk factors.

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# Examining the Impact of School Esports Program Participation on Student Health and Psychological Development

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**Keywords**: Self-regulation, health, positive youth development.

## Introduction

Esports has become hugely popular with the number of players and spectators growing year on year (Newzoo, 2020). The esports industry has been valued at over 24 billion dollars (Ahn et al., 2020) and professional esports athletes (i.e., e-athletes) can earn as much or more than traditional athletes (Finance Monthly, 2018). The rapid growth in esports may primarily be due to the high levels of engagement of young people. A recent industry report showed that almost half of all esports fans are aged between 13 and 24 years (Nielsen, 2019). There has also been a 500% increase in the number of high school esports developmental and grassroots initiatives in the USA between 2018 and 2019 (Hennick, 2019). The increased popularity in esports has been accompanied by several concerns regarding sedentary behaviour, psychological development, and physical and psychological wellbeing (e.g., Shum et al., 2021). Despite the negative connotations associated with video gaming (Mihara & Higuchi, 2017) and esports (Shum et al., 2021), a review by Granic et al., (2014) suggested that playing video games was associated with cognitive, motivational, social, and health benefits. Similarly, it has been

theorised that pedagogical supervision in adolescent esports programs can assist in identifying potential signs of problematic gaming (Wimmer et al., 2021).

As esports programs are becoming increasingly common in school curriculum in the USA (Hennick, 2019), it is becoming increasingly important to know how these programs are influencing the children who participate in them. Currently, there is limited empirical evidence regarding the impact of adolescent participation in esports programs. However, research has suggested that esports programs have the potential to positively influence the development of communication, teamwork, and problem-solving skills (Rothwell & Shaffer, 2019), professional and academic skills, social and emotional learning (Reitman et al., 2020), social belonging and mental health (Tjønndal & Skauge, 2020). Despite this evidence, no study examining youth esports have used a longitudinal research design. As such, it is not possible to draw conclusions about the causal relationship participation that such a program may have on student development.

The current study was exploratory in nature and had the following two aims: 1) Explore differences between student e-athletes enrolled in a school based esports programme and an aged matched control group on self-regulation, growth mindset, positive youth development (PYD), physical activity (PA) behaviour, and self-perceived health, and 2) Explore the effect of the school esports programs on self-regulation, growth mindset, PYD, PA behavior, and self-perceived health.

## Method

A total of 188 students (male n = 120; female n = 68) originally participated (89 enrolled in an esports program in their school and 99 acted as aged-matched controls), with 58 participants (n = 19 esports group; n = 39 controls) completing both pre- and post-program information. At baseline, no significant differences were found between youth e-athletes and their age-matched controls.

## Results

The analysis for the observation period showed a significant interaction effect for the PYD confidence scale (Geldhof et al., 2014), with post-hoc comparisons showing a significant decrease in the control group from pre- to post-assessment whereas, the esports group remained

the same. Time main effects showed a decrease in the self-regulation motivation factor, PYD connection factor, and PA for all participants. Overall, this study showed that students enrolled in their respective school esports program did not differ from those who did not in self-regulation, growth mindset, PYD, perceived health and PA, and sport behaviour. It was likely that all participants showed a decrease in motivation, connection, and PA due to the COVID19 lockdown during the study period.

## Conclusion

This study is the first to investigate the longitudinal impact of student involvement in high school esports and showed that esports participation did not have a negative impact on any health or psychological factors.

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# Esport Project at Argentinian Public University

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**Keywords**: College Esports, Public University, Esports UNLP, Argentina

The eruption of the internet and its expansion in the digital society established a new paradigm in which information and communication technologies have become part of everyday life, integrating themselves into all areas of one's daily routine. One of the fastest growing sectors within digital industries is esports, which Carrillo (2020) identifies as a competitive practice of video games in a sports setting. It is a phenomenon involving video games with similar characteristics, whose roots are found in the sports spectacularization of video game events. Esports experienced a profound advance with the development of online multiplayer games and recently becoming a new industry (Anton, 2018).

Despite the media relevance achieved in recent years by competitive gaming, there is still a timid approach from the research field to the potential of these experiences. In a context of constant innovation and technological development, multiple new paths will enable collaborative actions in the orderly and sustainable development of the phenomenon over the next few years in multiple areas. The current research project seeks to explore the training capacity an electronic sports project can provide to university students.

Several authors have debated esports as a sport (Jonasson & Thiborg, 2010; Witkowski, 2012; Gawrysiak, 2016). In general terms, they all share the idea that esports have characteristics inherited from traditional sports and that they can be considered as a sports discipline beyond

the discussion about the physical effort that it entails. Traditional sport is considered part of human development. It allows the inclusion of people in society and is also an important part of physical and psychological well-being (McPherson et al., 1989). One of the scenarios where sport is developed is in the university ecosystem, where the participation of students in representative teams seek to act as a complementary activity to academic formation, generating a humanization of education while promoting physical and mental health (García, 1984).

Esports is appearing in many higher education institutions across the world, often in different ways and in different contexts (Scott et al., 2021). Traditionally, when college students wanted to play video games against other college students, they formed casual teams to compete against each other (Kow, Young, & Tekinbas, 2014). Today, opportunities to take a more serious orientation towards playing video games competitively happen in a more structured environment involving student clubs and scholarship-based esports programs (Kauweloa & Winter, 2019). With opportunities to fill a role on representative esports teams, the competitive college space has seen steady growth. In the United States alone, there are more than 2,000 higher education institutions that have competitive esports teams or recreational clubs (Hedlund, 2020).

In recent years, the Latin American region has grown in terms of organizations, competitions, fandom, and sponsorships (Becka et al., 2021). Argentina, in particular, is positioned as a pioneer country in terms of player generation at the regional level, although with little investment in infrastructure for the organization of tournaments (Becka, 2019). In Argentina, there are few experiences carried out by universities getting involved in electronic sports, and in most cases, it arises with an academic approach and not with the formation of sports teams.

Within the aforementioned context, this paper examines the case of "Esports UNLP", a project created as a community space for students, teachers, and graduates who practice electronic sports and are part of the University of La Plata (ULP, 2021). Specifically, the authors are interested in finding out how a training space for esports teams can contribute to complement the higher education of university students. Thus, this case is particularly interesting considering that ULP is a public university, where projects cannot be financed by sponsors, but with a pre-allocated budget. To fulfil the research objective, a narrative development of the stages of creation of this space will be made, interviewing in depth the different actors involved in this process, among which the university directors stand out; who will describe their interest

in promoting electronic sports within the framework of the university. Student volunteers who have been, or are still participating as players, or coaches of the different teams, will also be interviewed.

Finally, it is expected that this research will be of interest to those who seek to replicate the development of esports university teams, especially in the context of a limited budget, using the convening sportsmanship of esports, and the immeasurable value of the human resources that a national university can provide.

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# A Player Perspective on Competitive Gaming – State of the Art and Some Future Research Directions

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**Keywords:** Esports, player perspective, player research, in-game interaction.

## Literature Review and Theoretical Background

Games today make up a large part of children's and young people's lives. The Domestic Players Barometer (Kinnunen et al, 2020) shows that 78.7% of Finns play digital games, and the youngest participants are the group that plays the most. Both pedagogically and commercially developed games can offer the player the opportunity for learning and development (Barr, 2019). Competitive gaming presupposes, among other things, functioning cooperation and good communication skills (Rusk et al., 2020; 2021; Rusk & Ståhl, 2020). However, there is a need to better understand commercial games from a pedagogical perspective (Barr, 2019; Gee, 2007).

Digital games, which enable new arenas for learning and identity practice, have often been studied through a normative or predominantly technical interest (Bennerstedt, 2013). This tendency comes in part from the lack of analytical approaches to understanding the direct and synchronous digital interaction, not to mention the methods of collecting data (Ståhl, 2021). Therefore, such research cannot describe how children and young people, situationally, interact through digital games, both inside and outside school. There is a need for an empirical scientific basis describing how the interaction actually is done, instead of relying on self-reported results, questionnaires or data on the interaction a posteriori (Meredith & Potter, 2014; Rusk & Ståhl, 2020). Consequently, for video ethnographic research and research on digital social interaction, the next step is to embrace the potential of data collected from the participants' point of view at the very moment of the event.

## Objectives

The video game play data in this project comes from diverse multiplayer games from various offline and online spaces that are part of Finnish social and educational organizations, as well as players' own gaming outside the activities of said organizations. The data includes screen recordings and other ethnographic data of both more and less competitive gaming from a player perspective.

The focus of the research project, "EduGaming – playing together in- and outside of school," aims to understand gaming in- and outside of school from a player perspective. The aim of this presentation is twofold: a) to present previous research endeavors on competitive gaming and school from a player perspective, as well as, b) to discuss possible future directions for research on co-play in competitive gaming.

## Method

An applied form of conversation analysis, together with an ethnographic approach, is an optimal approach for collecting and analyzing data from a participant perspective. It includes techniques for documenting social actions and identifying what is characteristic of particular social activities and constructing a collection of situations for comparison between settings and over time (Schegloff, 2007). This approach provides analytical tools for treating different modalities as intertwined and constitutive of the actions performed by the participants. The analysis places social action, learning and identity construction in the temporality and sequentiality of the interaction, and recognizes that the organization of action can involve simultaneous and parallel flows of verbal, embodied, and digital (Goodwin, 2013).

The project responds to the need for new and innovative ways to collect data on digital games. This requires not only the development of existing methods, but also the construction of new tools and processes. Digital interaction requires methodologically creative and adaptable research, as well as continuous collaboration with the participants (Pink et al., 2016; Spilioti & Tagg, 2017). We treat this unpredictability as an opportunity for innovation in our design. Each participant has their own individual social practice in and through the games they play, so our data collection methods must be developed creatively and applied as the fieldwork develops.

Both video and screen recordings are ethically sensitive and therefore require special care and respect. However, based on our previous experience of researching a player perspective in-game, not all practical ethical questions are covered by existing ethical guidelines (Ståhl & Rusk, 2022) and there is a need for in-situ ethical decisions during ethnographic fieldwork (Russell & Barley, 2020). We thereby argue, echoing Pink (2013), in a research project like this, a case-based and process-focused ethical framework can be considered optimal. Thereby, with participants performing screen recordings, they gain more control over data collection (Murphy & Dingwall 2001).

## Findings

Based on the current academic discourse and previous empirical studies conducted within the project group, we see three themes that are particularly relevant to future player-centred research in a context of competitive gaming. The themes: a) learning, communication and collaboration, b) research ethics and methodology in player-centred research, and c) identity, community and diversity.

Gaming can be a gateway to developing technological competence, learning and a sense of belonging. The norms of technology being a masculine form of competence continue to shape the gaming community and will not only affect who has access to trajectories of technological expertise, but also their access to certain domains and careers. The norm of the ideal esports player (i.e., male, white, heterosexual, and competitive) does not reflect actual player demography. Therefore, it limits which players feel included in the gaming culture, whether this gaming is done in or outside of educational contexts and settings. Thus, employing games in an educational context is challenging, since many values, that are the norm in gaming culture, are in stark contrast to educational values such as democracy and inclusion. However, excluding commercial games from an educational setting is to refrain from improving skills such as communication and collaboration in a social learning platform that students find authentic and motivating. One could also see the problem through the following lens: what would be a better place to address issues with in-game culture than in educational safe spaces?

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# Sustainable Integration of Esports and Educational Programs

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While sport has become an integral part of everyday life in modern society, the emergence of esports has challenged what we consider traditional sport and to a certain extent has initiated a change of paradigm in sports (Riatti & Thiel, 2021). The question of whether to classify esports as a sport remains an ongoing debate that varies by country and region. Often the lack of physical activity can be seen as an argument against officially classifying esports as a sport despite parallels to existing sports such as darts (Hallmann & Giel, 2018). Engagement in esports is motivated similarly to traditional sports but has unique digital aspects that differentiate it (Riatti & Thiel, 2021). Esports represent a dynamic context, blending entertainment and culture with the structures and events found in traditional sports (Pizzo et al., 2022). It utilizes the same terminology as sports such as tournaments and athletes and is increasingly relevant within sports management as traditional sports organizations seek to leverage innovation and attract younger digital audiences through incorporating esports (Pizzo et al., 2021). Esports scholarship continues to draw parallels with sports in terms of management, marketing, performance, and players as athletes (Pizzo et al., 2022).

While playing esports can facilitate developing communicative, cognitive, and fine motor skills (Riatti & Thiel, 2021), it can also provide social benefits through acting as a platform for a more integrated digital society (Pizzo et al., 2022). In higher education, there is a diverse and increasing number of esports-specific programs globally, and while the majority of these programs focus on aspects of esports business, optimally more programs will develop to leverage the context's cross-transferable skills (Jenny et al., 2021). Esports represents new possibilities for a range of stakeholders from traditional sport to educational institutions (Riatti & Thiel, 2021) with today's digital culture, practices, and pervasiveness of esports being increasingly relevant in the modern digital society (Pizzo et al., 2022).

What we present here is the development of a dual career program being launched at Jönköping University in Sweden that seeks to provide opportunities for young athletes in both sports and esports. Jönköping represents a region with a unique background in esports through bi-annually hosting the DreamHack festival resulting in a legacy of esports and active esports actors (McCauley et al., 2020). In 2018, NYSA (National Youth Sports Association) Sweden was founded to enhance and create opportunities for young people by inspiring, empowering, and holistically supporting young athletes to develop their potential and careers. Through collaboration with Jönköping University, we are offering Sweden's first International Student Athlete Program in order to ensure that aspiring professional athletes can develop themselves beyond just their athletic careers. It represents a dual career platform offering advancement in both sports and education through our international learning center. The launch of the program will include opportunities for players engaged in traditional sports such as football, rowing, cycling, or martial arts but also aspiring esports athletes such as those who play CS:GO, Valorant, Rocket League, and a variety of individual esport titles.

The program will enable potential domestic and international degree-seeking students to prepare for a following first or second-cycle university program while continuing to develop their careers and achievements in sports. Students will be provided with opportunities to develop practical knowledge, skills, and competencies connected to their career in (e)sports, in terms of leadership, organizational perspectives, and individual development. The courses include theoretical perspectives on sustainable long-term leadership, sustainable leadership in organizations, associations, and sports clubs, prevention of stress-related problems, recovery promotion, vitality, and well-being. This is paired with aspects of sustainable leadership in practice, to develop good conditions for creating a healthy leadership philosophy where the

focus is on the athlete's development and well-being. The program will collaborate with traditional professional sports clubs such as football or hockey, but also with esports stakeholders such as the IFOEC (International Federation of Esports Coaches), the Esports Research Network, and Swedish esports organizations and teams. Student-athletes in esports will be provided with theoretical and practical exposure within the sports and esports sectors to develop their knowledge and skills associated to continue with their education and sport together. Within the program, student-athletes will be required to have a vocational placement that supports them in being able to bring the theory into practice to check, challenge and confirm their learning within the sector of their choice. This approach to teaching, learning, and assessment offers the best opportunities for their holistic development, whilst gaining vital industry-specific experience to support employability and transferable skills for their future career post-education. The program represents an opportunity to highlight the value of esports beyond playing and as such represents an important part of legitimizing the role of esports in society as a sustainable industry.

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# Overwatch or Overlooked? Collegiate Esport Player Perspectives on Themes of Social Sustainability

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**Keywords**: Burnout, collegiate esports, Overwatch, social support, social sustainability, wellness.

## Objective

This case study examines multiple player perspectives within a collegiate Overwatch esports team established in 2020, regarding mental health as it relates to burnout and the support systems necessary to foster a socially sustainable environment. The authors discuss how these perspectives should guide the foundation of wellness to enhance academic success and facilitate flourishing as a student gamer.

## Literature Review

According to Nyström et al. (2022), social sustainability is "the physical well-being and basic needs of individuals, quality of life, and equity" (p. 3). Within these themes, the authors explore the threat to collegiate esports players' mental health which impacts their quality of life. Since these players face tremendous threats to their social and mental health due to rigorous academic expectations and grueling esports practice schedules, this may manifest as burnout – classified as an emotional, social, and physical withdrawal from a formerly enjoyable activity, such as competing in esports (Gould & Whitley, 2009). Esports careers are often short (Lajka, 2018), with young players being at risk of burnout and mental strain (Hong, 2022) signaling managers, coaches, and staff to assess necessary measures to provide wellness resources. Social support, defined as "the provision of assistance or comfort to others, typically to help them cope with biological, psychological, and social stressors" (*APA Dictionary of Psychology*, n.d.), is shown to influence outcomes of burnout in college students (Ye et al., 2021) and collegiate athletes

(DeFreese & Smith, 2013). It may be expected then, that esports players may benefit from social support in the prevention or treatment of burnout. In the collegiate esports network, players may benefit from receiving social support from family, friends, teammates, coaches, administrators, and sports psychologists with many professional esports players having previously identified these support networks as beneficial to themselves (Hong, 2022).

## Methods

Participants surveyed in this study were all starting players on the collegiate William & Mary Esports Overwatch team. The anonymous survey collected demographic information and questions regarding playtime and schoolwork habits. The survey also included questions adapted from the Athlete Burnout Questionnaire (ABQ) by Raedeke and Smith (2001) used to assess burnout symptoms, and questions from the Social Support Questionnaire – Short Form (SSRQ6) by Sarason et al. (1987), to measure the availability and satisfaction of social support. Information about the player's future plans in esports through open-ended questions was also collected. Data collection is currently ongoing. Responses will be quantified using descriptive statistics and analyzed to identify any correlations between burnout and social support.

## Discussion and Potential Implications

"Esports are video games but not all video games are esports." This statement supports the Ahn, Collins, and Jenny article assessing a more accurate sizing of the revenue of the $25B esports industry (2020). Within this burgeoning enterprise, collegiate esports players are pioneering ways to demonstrate their presence at the university level. Collegiate esports has many similarities to traditional sports such as rigorous practice schedules, scrimmages, and tournaments. Furthermore, esports players encounter analogous health risks such as musculoskeletal or ocular injuries, sleep deprivation, nutritional deficits, and mental health burdens (Schary et al., 2022). Many university administrators may struggle to find the best practices to cultivate, support, and sustain a collegiate esports program in the developing esports landscape. In this digitized culture, an opportunity exists to develop and educate administrators about the barriers encountered and the elements essential to sustain a grassroots community of collegiate competitive gamers. The results may provide institutions of higher education a scaffold to extrapolate the socially sustainable themes necessary for collegiate esports teams, a model to create socially sustainable esports ecosystems, and a platform to initiate a dialogue of the variables to consider when onboarding an esports program.

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# Motivations to Enroll in High School Esports Programs: Gaming Habits and Risk Factors

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**Keywords**: Esports education, esports career planning, motivations, problematic playing, game transfer phenomena, high schools.

## Literature Review and Theoretical Background

The participation in high school esports education has been associated with a positive impact on development (e.g., caring and confidence) (Trotter, et al., 2021). High school esports education has emerged as a stepping-stone in the professionalization of gaming with the potential to provide the first guidelines for a healthy and sustainable esports career. However, research has shown that players intending to become professionals exhibit more symptoms of gaming disorder than players without that goal (Maldonado-Murciano, et al., 2022). Therefore, it is important to identify gaming habits and maladaptive cognitions that can pose risks early in an esports career. Playing for competition, skill development, and social motivations are predictors of esports career planning (Bányai, et al., 2020). Protective factors in practicing esports include awareness of health to maintain performance (Monteiro, et al., 2022).

## Research Questions and Objectives

The research questions guiding this study included: 1) Do students with different motivations to enroll in esports education show distinct gaming patterns and consequences of playing? 2) What factors can explain associations between gaming risks and motivations for joining esports programs?

The objectives of this study were to: 1) to examine the relationship between motivations to enroll and (i) gaming habits (time playing, game-related activities [competitions, gambling] and frequent habits while playing (high volume, junk food, energy drinks), (ii) cognitions on gaming (beliefs, expectations, and responses to game rewards), (iii) consequences of gaming (problematic gaming and integration of game content/experiences in everyday life, i.e., Game Transfer Phenomena, [GTP] manifesting as thoughts, sensory perceptions, and behaviors derived from the game after playing) and (iv) parental role; and 2) to examine mediators for motivations and risk factors.

## Methodology

A total of 244 students enrolled in esports programs at Swedish high schools answered a survey Most were male (mean age = 16.72 years, *SD* = 0.841). Scales used: The problematic online gaming questionnaire (Pápay et al., 2013), the Internet gaming cognition scale (King & Delfabbro, 2014) (i.e., gaming perfectionism [GPerf]: e.g., not satisfied until having done everything in the game; gaming emotion regulation [GEmot]: counting on videogames to feel better), and the GTP scale (Ortiz de Gortari, et al., 2015).

Three distinct motivation factors (to enroll in esports education) were identified via exploratory factor analysis: career motivated (CM; i.e., want to play professionally, including becoming rich and famous by playing); study motivated (SM; i.e., motivated to attend school and study); and motivated because friends joined, or for fun (FM). Spearman's correlation and chi-square test were used to examine associations between these motivations and the variables investigated. Mediation analyses were conducted via PROCESS macro in SPSS.

## Results

The students trained an average of 27.92 hours weekly on their main esports game, with average sessions of 3.37 hours. Most were training on League of Legends (42%), Hearthstone (32%), or Counter-Strike (14%). The most common motivation for joining the program was FM, followed by EC and SM. One in four (27%) had bet on esports, while 14% had gambled in another way. At least 50% played in darkness and with high volume; 20% consumed energy drinks; and 13% ate junk food while playing, either often or always. Most (87%) had experienced GTP. 13.4% met the cut-off point for problematic gaming.

Both the CM and SM motivations were correlated with (a) hours playing esports weekly and session length; (b) involvement in gambling; and (c) cognitions on gaming (GPerf and GEmot). However, only CM was correlated with (a) involvement in competitions; (b) problematic playing in the dimensions of preoccupation, immersion, interpersonal conflicts, and withdrawal; and (c) experiencing GTP. FM was negatively correlated with (a) competitions, (b) hours playing esports weekly. Only significant differences were found in the attitudes of parents of those with CM. They were more likely to think enrolling in esports education was a good idea. GPerf and GEmot fully mediated the relationship between CM and problematic gaming, while GTP partially mediated it.

## Conclusion

The findings highlight the importance of considering the motivations for pursuing an esports education, as students exhibit different gaming patterns. Those with CM faced some conflicts due to gaming, but their parents appear to have a positive attitude toward esports. Certain cognitive schemas and beliefs on gaming, while perhaps part of achieving esports expertise (e.g., "When I make mistakes or fail in a game, I must retry until I succeed"), can lead to dysfunctional gaming. Understanding the behavioral patterns, motivations, and cognitive factors that underlie esports practice can be useful for developing esports education that provides psychological and emotional support and prevents problematic playing.

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# Track: Research Development 2

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Players lie at the heart of the esports ecosystem (Scholz, 2020). As such, it is perhaps unsurprising that there is increasing research interest in how players train and improve performance (Abbott et al., 2022). To date, a number of relevant psychological (Poulus et al., 2022), physical (Toth et al., 2020) and social (Swettenham & Whitehead, 2022) factors have been identified, and accounts from applied practice recognise the need for a holistic view of esports performance (Pedraza-Ramirez, 2019). This track seeks to continue in this vein and share insights from a variety of studies on health and performance in esports. Phillips and Andre will start by considering the various methods available to monitor the physical health and performance of esport athletes. Logan et al. will then present findings from their study on injuries, injury management and experiences of physical therapy in professional esport athletes. Szabella will then discuss the results of a study on physical activity and mental fatigue and set the scene for a PhD research programme in this area. Shifting focus, Vanloo will share questionnaire results from a sample of esports coaches and highlight considerations for educational curricula. Nelson et al. will conclude the session by outlining the methodology for their study into the relationship between glucose level and cognitive performance.

# Monitoring Esport Athletes

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***Background:*** The recent rise in popularity of esports has led to an increase interest in research yet there is still quite a gap in the literature especially regarding monitoring and optimizing performance of these athletes. While sleep and performance limited research with esport athletes, based on previous research in other areas this potentially would have negative effects relating to reaction time and trouble concentrating especially during a weekend long tournament. Current monitoring of esport athletes is minimal but growing in popularity and college and professional opportunities are being establish. Esport athletes play anywhere from 5.5 to upward of 10 hours a day. With an extensive amount of time sitting and playing in a similar position it may not seem exhaustive physically overuse injuries commonly reported amongst these players similar to those of traditional sports. Monitoring devices in traditional sports is common among colligate and professional athletes to maximize performance and reduce risk of overtraining and injuries.

***Purpose:*** This leads to the purpose of this symposium of potential monitoring strategies these athletes for maximizing performance and minimize overuse injuries that could lead to time away from training or competing. Monitoring esport athletes can be challenging to minimize interference with playing as it requires quick and fine motor control movements.

***Methods of monitoring:*** Current common practices to monitoring esport athletes and performance are heart rate monitors and wearable devices to measure physiological responses. Research examining the esport athletes in training and competition show an elevated heart rates when playing with mean heart rate being greater in competition than training (Rudolph et al., 2016). Approximately 40% of esport athletes report not participating in exercise or do not meet recommendation which could be a factor in comfort and control during competitions

(DiFrancisco-Donoghue et al., 2019; Martin-Niedecken & Schättin, 2020). Another paper examined physiological differences between winning and losing teams and found teams with a higher mean heart rate were more successful . With this being known would increasing heart rate via exercise be adequate preparing esport athletes for competition level heart rates that can reach upward of 180 beats per minute during tournament play (Andre et al., 2020; Koshy et al., 2020). If heart rate patterns are known, then athletes could be trained to mimic increases they may endure during a game. In addition to heart rate monitoring, HrV can be examined to demonstrate potential stress response. Andre et al., (2020) saw R-R intervals and high frequency were significant difference following a competition compared to the pre-values. Another tracking device related to performance is eye tracking. Eye tracking can provide value feedback and learned patterns and strategies of success(Hüttermann et al., 2018; The Use of Eye Tracking in the Training of ESports Athletes, n.d.). It also can aid in distinguish the difference between amateur and expert gaze, eye patterns and movements. In conjunctions with the eye tracker, keyboard and mouse data can be recorded and utilized examining usage and duration. It can also help identify at which point during an athletes gaming session do they tend to have decrease performance. This knowledge could allow for acute intervention like stretching, light exercise, hydration, or implementation of long-term benefits like strength training to strengthen certain problematic or weak areas (DiFrancisco-Donoghue et al., 2019; Martin-Niedecken & Schättin, 2020). A commonly overlooked monitoring of these athletes would be sleep. Especially since they experience a lot of exposure to LED lights that can affect their circadian rhythm and sleep quality. Sleep and quality of sleep is important for cognition and performance.

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# Experiences of Professional Esports Athletes in Healthcare and Physical Therapy for Injury Management

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***Objectives and Research Question:*** PTs are in a prime position to act as primary providers for hand, wrist and back pain while providing appropriate education on ergonomics, flexibility and strengthening exercises for esports athletes. Gaining an understanding of their experiences will guide research in developing specific clinical practice guidelines for physical therapy (PT). Further, by gaining further insight in their personal experiences, strategic education can be provided to physical therapists and other healthcare providers. The purpose of this research was to gain insight into injury, injury management, and professional esports athlete's experiences with healthcare and PT.

***Theoretical Background and Literature Review:*** Despite the surging popularity of esports, there is limited research on injuries and management of the injuries in esports athletes(Huard Pelletier et al., 2020; McGee et al., 2021). Moreover, little is known about the experiences of professional esports athletes have in healthcare or injury management(DiFrancisco-Donoghue et al., 2019). A recent survey of esports athletes indicated that back and neck pain were the second highest complaint of pain, followed by the hand and wrist. Yet, only 2% of this population seeks medical attention(DiFrancisco-Donoghue et al., 2019). Furthermore, this study did not include professional esports athletes which has yet to be explored.

Clinical practice guidelines suggest an integrated health model for esports athletes which includes PT. However, to fill the large gaps in evidence based literature there have been calls

for more research (McGee et al., 2021). For example, in a scoping review by Huard Pelletier(2020), only three studies have investigated musculoskeletal pain in those that participate in esports. No studies have investigated the experiences of professional esports athletes in healthcare and PT which may be a reason why a small percentage of these athletes seek medical attention.

***Methodology and Data Collection:*** After Institutional Review Board (IRB) approval, data was collected for this descriptive study using an anonymous, self-reported questionnaire posted on social media. The survey was developed from a previous outpatient satisfaction survey developed by the Ontario Hospital Association (OHA)(2014). The OHA develops validated and robust surveys led by a review committee. The survey includes demographic data as well as self-reported experiences with PT. A total of 16 of 49 respondents completed the survey after meeting the inclusion and exclusion criteria.

***Main Results and Findings:*** The average age was 23.43 + 3.4 years and a total of 14 males and 2 females completed the questionnaire. A total of 60% reported not receiving a referral for PT for pain or injury, but if referred, 78% reported they would attend. When attending PT, 79% reported confidence in their clinician. Highest regions of pain or injury reported were head/neck, wrist/hands and mid/back (47%). Low back was reported 39% of the time, while shoulders, elbows and hips/upper legs were reported lowest at 8%. Interventions they received included stretching (77%), strengthening (54%), education on posture (39%), and modification of activity level/rest (31%). Use of rest, ice, heat and bracing/splinting were reported 8% of the time. Interestingly, no meditation/relaxation or breathing exercises were provided despite 73% of athletes reporting stress. Rich quotes from the questionnaire emphasized the importance of PT in their overall performance and recovery from injury. For example, “It’s been really beneficial for me so far in terms of strengthening my wrists to play for longer periods of without feeling anything” and “It is underrated in esports, and young players don’t understand the strain they’re putting on their bodies.” Athletes supported PT as a staple in esports stating, “I think this should be a staple for any professional esports player, it should be mandatory for the longevity and sustainability of the players.” Interestingly, a PT specialization in esports was recommended by one player.

***Discussion and Practical Implications:*** Overall, professional esports athletes reported the importance of PT in recovery from musculoskeletal injury and pain. Athletes reported positive

experiences with PT. However, professional esports athletes may have more access to care and resources including PT. Future research should include collegiate and casual esports athletes which may provide a better representation of the esports population.

PT plays a vital role in the professional esports. The initial results of this study can guide research in developing specific clinical practice guidelines for PT and esports. Current PT practice for this population relies on evidence-based literature from other populations, however the physical demands of esports athletes can be significantly higher. Further education and awareness for PTs, specifically for management of esports musculoskeletal injuries and pain, will better assist in understanding the needs of these athletes and the role of PT.

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# The Theory of the Healthy Esports Player Based on Numbers

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**Keywords**: Health, esports, sustainability.

The goal of this study was to create and check the idea and the possibility of the „healthy esport" approach. The base study is the starting line of a wider PhD research aiming to prove objectively, that professional players could gain advantage in game if they also add physical training to their preparations.

This research was based on a 2 months period of a professional Hungarian esport player nicknamed „Rico". The idea was to watch the objective numbers of the performance the choosen game gives for the first month (this time it was Rainbow 6: Siege). After that, introduce 3 main parts of the healthy lifestyle to the players way of life which was not part of it before, healthy diet, regular physical exercises and a good sleep schedule (8 hours every day, same wake up and sleep time every day) and check the same numbers again. There was also a subjective part, a questionnaire with the aim to determin the point of mental fatigue for the individual himself (Szabella, 2022).

The results were visible on the generated numbers (K/D Ratio and Win Percentage), both got better after adding the healthy part to the lifestyle of the player (Szabella, 2022).

There are too many variables in this scenario for a wider audience to test on, so the main goal of the upcoming PhD research will be the physical training part of this pilot study. We will try to determine objectively with a wearable device (EEG or HRV monitors) (Trejo et al; Sharma & Bundele, 2015) what is the actual mental fatigue point of the player and if we can manipulate it with different kinds of physical activity.

Two types of researches will be conducted one for a short term - inbetween gaming session – for a wider audience to determine if we can help recover mentally with exercises and if yes what is the best training intensity to do so. The second one will be a long term project, for three months to try to make it a habit (Phillippa, 2010) and to see if the first appearance of this pre

determined “mental fatigue point” can be pushed for a later point in time with regular physical exercises, hence the question: “Can physically fit esport players take more pressure in game?”.

If the PhD study gets a positive result as well as the pilot study did, we can actually prepare a physical excercise plan, so they can play longer on the highest level, can have a better feeling of well-being overall, countering the negative effects of sedentary lifestyle (Jung et al, 2020; Jian-Guo et al, 2017; Chen et al 2009, Allison et al 2020).

The healthy esport players can also have longer carreers, can have a better overall appearance which helps to make a better impression (Lorenzo et al, 2010) and at last but not least can achieve better results on the most important tournaments, adding value for the teams employing them, and making the social part of esports a bit more sustainable

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# Understanding Esports Coaching Experiences: An Evaluation of Educational Activities Associated with High Performance Coaches and Their Development

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**Keywords**: Development, sustainability, progression.

Esports is progressing rapidly towards a comparable level of educational development, as its traditional sporting counterparts (Jenny et al., 2021). With an increased, need and desire to provide optimal training and development for coaches being a key focus within the sector and a key developing focus point for curricula development. Performance coaching is a fundamental tool to support and facilitate growth and sustainable development for players into professional routes of competitions and support the ever-expanded semi-professional and professional level of play for many esports titles. However, having well developed coaches allows them to provide additional skill development to better support their athletes throughout their careers. Currently the vast majority of coaches training is impacted by their experiences as a professional player and isn't directly backed up by additional sources, educational qualifications or training planning for the activity being conducted (Taylor, 2012). Considering, in light of the growing demand for education around esports it is likely we will see a further focused on performance-based education in relation to the sustainability and development of high performance esports coaches. This was highlighted in the investigation and analysis of global higher education esports academic programming and curricula by (Jenny et al., 2021). Jenny et al highlighted that coaching was one of the key strands which was identified for academic delivery within esports curriculum although the study failed to cover how it would best utilised as it was more of a development overview.

The current progress paper although ongoing will be taking impression from the work conducted within the areas of performance and coaching with work being referenced in the early stages of development of academia of sport and acting performance (Bloom, 1985; Côté, 1999; Ericsson, Krampe, & Tesch-Römer, 1993; Helsen, Starkes, & Hodges, 1998). Although the paper uses these sources it is clear that the process conducted within relation to traditional

sports, has some clear overlaps with esports and raises similar issues within the sustainability and development of coaches and the training which needs to be conducted for player development.

By bearing this in mind the paper aims to address a code of practise though which educational institutes can develop curriculum, which would meet the needs of coaches within esports through the current development process of professionalisation.

The initial hypotheses conducted by the researcher expects to highlight similar results to findings from research around the early stages of sports coaching development which initially in its self was based of examinations conducted on player development. One of these early investigations (Côté, 1999) developed a model which established three stages of transitional development although this model was originally based on findings on elite athletes, before being applied to coaches in a similar vain as it was when looking at development of athletes as they aim to reach an elite level by progressing through a three stage development of participation these stages being (Sampling, specializing and the investment of years). When Côté expanded his findings into traditional sports coaching, he highlighted seven outcomes not all are transferable to esports but have provided some outline for the questionnaire being sent out to participants (Salmela et al., 1994).

Sample selection Participants will be included based on their respondents to the questionnaire and will only be considered if they have coached to tier 2 level of play. For the purpose of this study the researcher has defined this by basing it on the level of players which the coach has been involved with. Which in this case has been within the top five percent of the active player base of the game Classification: Restricted they represent when they were under coaching contract (Schinke et al., 1995). Coaches will also need to have completed at least 6 months of coaching at this level to be considered for participation. The researcher has provided the opportunity for participants to self-nominate instead of reaching out to individuals directly with the researcher choosing to allow for others to nominate piers to take part, allowing for the researcher to not directly impact the selection process to their best overall ability.

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# Investigating the Impact of Glucose Levels and a Brief Exercise Bout on Esports Performance and Fatigue

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***Literature Review:*** Following 2.5 hours of continuous esports play, there are seen to be decreased executive functions, including accuracy which could result in decreased esports performance (Sousa et al., 2020). In order to reset executive functioning during prolonged gaming, prior research has investigated the impact of a 6-minute walk or a 6-minute rest in the middle of 2 hours of gaming compared to continuous play (Difrancisco-Donoghue et al., 2021). The findings of this study suggested that the active break improved executive function more than the passive break, but that the performance was greatest in the continuous play condition. However, this study included the break after only 1 hour and the continuous session was only 2 hours, despite the research indicating executive function typically decreases after at least 2 hours. Additionally, the active break consisted of 6-minutes of brisk walking and prior research has shown an improvement in cognitive functioning following high-intensity exercise (Bahdur et al., 2019). In order to ensure the practicality and usefulness of including an exercise active break during continuous esports sessions, long-duration bouts or exercise using equipment would not be advantageous. Research has been done investigating the use of very short, but

high-intensity bouts of exercise and has seen similar adaptations as longer duration, moderate-intensity exercise (Mcrae et al., 2012). This low-volume, high-intensity exercise is considered whole-body aerobic exercise using only body weight, but working large muscle groups. This suggests that this type of exercise may be useful in breaking up continuous gaming sessions in order to reset cognitive functioning, reduce fatigue, and increase esports performance. However, a lack of research currently exists investigating the impact of a short active break using high-intensity exercise during continuous gaming. Additionally, previous research suggested that when compared to a fasting state, gaming while in a postprandial state did not seem to improve performance (Rhoden et al., 2021). This finding is in opposition to research that has indicated an increase in cognitive functioning with the consumption of foods containing glucose (Donohoe & Benton, 1999). However, the research investigating glucose in esports looked at only 1 hour of gaming which may not be long enough to induce fatigue in esports athletes.

***Research question:*** Therefore, the relationship between glucose level and cognitive performance during long-duration continuous play with and without an active exercise break should also be investigated.

***Methods:*** To evaluate these potential relationships, twenty male and female subjects, ages 18 to 35, are being recruited to participate in a counter-balanced cross-sectional study in which all participants will complete both an exercise and non-exercise control trial. Participants complete the familiarization visit consisting of signing the informed consent, medical history, height, weight, body composition, heart rate, and blood pressure. The participants are then familiarized with the aim training platform (Aim Lab, State Space Labs, Inc., New York, New York), the gaming platform, and the exercise that will be done. During the two trials, participants come to the lab having fasted for 3 hours. A measure of blood glucose is taken and pre-measurements are taken on the aim training platform. Following this, the participants are given a standardized nutrition bar to consume (Gatorade Recover Protein Bar; 350 calories, 13g fat, 41g carbohydrates, 20g protein). Throughout the entirety of the 5-hour session, heart rate is recorded. Tobii eye tracking (Tobii, Stockholm, Sweden) is used to examine pupil size and fixation to monitor objective visual fatigue and Neurosity Crown EEG device (Neurosity, Brooklyn, New York) is used to examine brain waves (Alpha, Beta, and Gamma) to determine cognitive load and fatigue during each aim training session. The participants play Call of Duty for 2.5 hours before having glucose measured, using the aim trainer, and then completing either

4 minutes of exercise followed by 5 minutes of rest and a measure of exertion, or a 9- minute break if they are completing the control condition. The exercise bout includes 8 rounds of 20 seconds of exercise bursts of burpees with 10 seconds of recovery between bouts (Mcrae et al., 2012). Burpees are being used because they require no exercise equipment and target several large muscle groups. After another 2.5 hours of gaming, the participants complete the post-tests including a glucose measurement, aim training, level of fatigue, and enjoyment. Participants return for the second trial after 24 hours but within 1 week.

***Findings:*** This study is ongoing and the findings will be available for presentation.

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# Symposium: *Handbook of Esports* Book Project

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Past esports books focus on specific areas of esports (e.g., esports medicine, esports business/management, esports history, collegiate esports, etc.). A reference source is lacking in the literature that provides a broad overview of esports. The editors on this panel propose to address this gap with the creation of a wide-reaching, interdisciplinary *Handbook of Esports*, intended for publication with a well-established global publisher. The purpose of this interactive panel discussion is for the editors of the proposed *Handbook of Esports* to receive feedback on this project's content outline, to discuss the expectations for chapter structure and style, and to solicit interest from the Esports Research Network (ERN) membership and conference attendees who would like to be considered for writing, co-writing, or peer reviewing chapters.

Planned as an overall reference text, the objectives of the *Handbook of Esports* are for readers to be able to: 1) Describe a global overview of esports, 2) Utilize the handbook as an all-encompassing esports reference tool, 3) Understand the interdisciplinary nature of esports, 4) Evaluate the current issues surrounding the esports ecosystem, and 5) Immediately implement

practical evidence-based strategies and recommendations regarding a plethora of areas relating to esports.