

# Performance Enhancement & Health

## Perceptions of professional esports players on performance-enhancing substances

--Manuscript Draft--

<b>Manuscript Number:</b>	PEH-D-22-00020R2
<b>Article Type:</b>	Research Paper
<b>Keywords:</b>	FIFA; Virtual Bundesliga; Doping; Energy Drinks; Gaming Booster; ESL
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<b>Abstract:</b>	<p>Along with the rapid rise of esports across the globe, the esports industry is increasingly confronted with issues concerning governance, regulations and manipulations. Software-cheating, match-fixing as well as doping seem to be widespread phenomena within professional esports competitions. Addressing these issues is challenging due to complex and fragmented governance structures and the lack of any central steering authority. This study looks into doping and performance enhancement in particular. Based on semi-structured interviews with (n = 9) selected professional FIFA esports players, we explore their perceptions of the use of drugs and other (allegedly) performance-enhancing substances such as energy drinks and gaming boosters. The core findings that emerged out of the data are a high performance pressure related to FIFA competitions as perceived by players, an ambivalent perception towards the legitimacy of different forms of performance enhancement and a lack of anti-doping measures on the part of organisations involved. The study is among the first to explore the view of players as one of the key stakeholders in the esports ecosystem.</p>
<b>Opposed Reviewers:</b>	
<b>Response to Reviewers:</b>	

## Highlights

- Yearly title releases and constant updates of *FIFA* cause high performance pressure
- Perceived illegitimacy of prescribed drugs
- Widespread acceptance and legitimacy of energy drinks and the like
- Perceived lack of serious anti-doping efforts in *FIFA* esports context
- Need for more anti-doping educational work and further measures in *FIFA*

## Perceptions of professional esports players on performance-enhancing substances

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### Abstract

Along with the rapid rise of esports across the globe, the esports industry is increasingly confronted with issues concerning governance, regulations and manipulations. Software-cheating, match-fixing as well as doping seem to be widespread phenomena within professional esports competitions. Addressing these issues is challenging due to complex and fragmented governance structures and the lack of any central steering authority. This study looks into doping and performance enhancement in particular. Based on semi-structured interviews with (n = 9) selected professional FIFA esports players, we explore their perceptions of the use of drugs and other (allegedly) performance-enhancing substances such as energy drinks and gaming boosters. The core findings that emerged out of the data are a high performance pressure related to FIFA competitions as perceived by players, an ambivalent perception towards the legitimacy of different forms of performance enhancement and a lack of anti-doping measures on the part of organisations involved. The study is among the first to explore the view of players as one of the key stakeholders in the esports ecosystem.

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## Abstract

Along with the rapid rise of esports across the globe, the esports industry is increasingly confronted with issues concerning governance, regulations and integrity. Software-cheating, match-fixing as well as doping seem to be widespread phenomena within professional esports competitions. Addressing these issues is challenging due to complex and fragmented governance structures and the lack of any central steering authority. This study looks into doping and performance enhancement in particular. Based on semi-structured interviews with ( $n = 9$ ) selected professional *FIFA* esports players, we explore their perceptions of the use of drugs and other (allegedly) performance-enhancing substances such as energy drinks and gaming boosters. The core findings that emerged out of the data are a high performance pressure related to *FIFA* competitions as perceived by players, an ambivalent perception towards the legitimacy of different forms of performance enhancement and a lack of anti-doping measures on the part of organisations involved. The study is among the first to explore the view of players as one of the key stakeholders in the esports ecosystem.

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## 1 Introduction

The exponential growth and increasing commercialisation of esports worldwide have been well documented and reported in the literature (e.g. Holden, Kaburakis & Wall Tweedie, 2019). As outlined by different authors (e.g. Kelly, Derrington & Star, 2022; Peng et al., 2020), this rapid development gave rise to a number of regulatory and governance issues. According to the Esports Integrity Commission (ESIC), an organisation resulting from joint efforts of different stakeholders, software cheats and hacks, online attacks and doping are the most common means of cheating and hence threats to the integrity of the industry.<sup>1</sup>

Due to the cognitive requirements in conducting esports, the debate about performance-enhancement here largely revolves around cognition-enhancing drugs, and their use seems to be a widespread phenomenon not only in elite or professional competitions but also among amateur players (Holden, Kaburakis & Wall Tweedie, 2019). Gupta, Sharma & Gupta (2021) state that doping “is a fairly common practice that has traumatized the entire esports industry due to the lack of a formal governance system”. Indeed, commentators tend to agree that many of the current challenges faced within the esports ecosystem result from a lack of identifiable governance structures (Peng et al., 2020). Kelly, Derrington & Star (2022) establish that the “number of actors and complexity of interactions within the esports ecosystem bring a diversity of perspectives to policy making, which itself must respond to the tensions that arise because of competing, and often conflicting, stakeholder interests”. One example of such conflicting interests are the efforts of (national) esports associations trying to implement the pyramidal-hierarchical structures well-known from the “traditional” sport system also into esports (Heidenreich et al., 2022). Such an association-type approach, based on

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<sup>1</sup> This view is also shared by other commentators (e.g. Holden, Kaburakis & Wall Tweedie, 2019; Peng et al., 2020). It is important to distinguish the different forms of cheating. Software cheats and doping both manipulate the game outcome by increasing the chance of winning for a given player/team. In the former, this is tried by using software to, for example, enable one player to see through walls or to never have to reload a weapon (Kulkarni, 2016). In the latter (doping), players resort to performance-enhancing (mainly cognition-enhancing) substances to gain an advantage. Match-fixing, on the other hand, refers to dishonestly determining the outcome of a competition (or parts of it) before it takes place and is often related to gambling activities. Due to these distinctions, different approaches are needed to address the issues. What all these forms have in common, is that they may significantly damage the credibility of esports and thus put its opportunities and commercial revenues at risk.

1 democratic and participatory principles, is not necessarily in line with the interests of publishers as  
2 commercial enterprises.

3 Besides fragmented governance structures, Lopez Frias (2022a; 2022b) also identifies the  
4 commercial partnership between esports organisations and the energy-drink industry as another  
5 factor that seems to impede the implementation of a robust anti-doping regime.<sup>2</sup> Based on the  
6 observation that anti-doping policy in esports are largely based on health- and integrity-related  
7 arguments, the author argues that the uncritical approach of esports organisations towards the energy  
8 drink industry erodes the theoretical foundations and practical viability of esports anti-doping policy.

9 Doubtless there are some concerns from players and contributions regarding voices outside  
10 the esports competitive player scene. Gupta, Sharma & Gupta (2021) conducted interviews with  
11 professional esports players in India. Their work attempted to bring about a better understanding of  
12 the doping phenomena in the realm. Yet, in line with our look into the literature, these authors  
13 identified a paucity of research of the doping phenomena in esports, especially when it comes to player  
14 opinions on the matter. As such, our paper tries to shed further light on the perceptions of doping and  
15 performance-enhancing substances by also collecting and analysing data from professional esports  
16 players using semi-structured interviews. This is of great importance because players can be  
17 considered to be among the key stakeholders in the ecosystem (Peng et al., 2020).

18 The remainder of the article is structured as follows: we critically review relevant literature  
19 next, then we explain the theoretical underpinnings of our approach. We then lay out the methods  
20 used for data collection and analysis. Results and findings are presented and discussed next, followed  
21 by a short conclusion section that also contains some practical implications. An overview of limitations  
22 and scope for further research closes the article.

## 23 **2 Literature Review and Theoretical Underpinning**

24 The past decade has seen a drastic increase of scholarly contributions on esports-related topics.  
25 Esports raises academic interest in a variety of disciplines, such as sport management (e.g. Cunningham  
26 et al., 2018; Funk, Pizzo & Baker, 2018), sport physiology and medicine (e.g. Leis & Lautenbach, 2020;  
27 Sousa et al. 2020) or sport philosophy (e.g. Parry, 2018), to name a few. Still, as mentioned by Kim,  
28 Nauright & Suveatwatanakul (2020), research findings and literature are still in infant stage.

29 Among the first to address issues of integrity in esports in the scholarly debate were Holden,  
30 Rodenberg & Kaburakis (2017), who assess how many of the problems associated with “traditional”  
31 sport (e.g. doping, gambling-related match-fixing, non-gambling related corruption) also increasingly  
32 affect esports. Addressing these issues in a consistent way is even more challenging in esports due to  
33 the organisational clutter that exists both on national and international level. According to Peng et al.  
34 (2020), three organisations have a claim to being the international governing organisation for esports,  
35 yet none of these organisations seems to have acquired the legitimacy needed to govern esports  
36 globally. The authors argue that this lack of legitimacy largely results from the dependency on game  
37 publishers, who appear to have an “authoritative, perhaps monopolistic position” (ibid., p. 9). Further,  
38 it is also questionable whether such organisations could enjoy acceptance among players themselves.  
39 For example, Heidenreich et al. (2022) empirically investigated the attitudes towards two German-  
40 based esports associations (World ESports Association; WESA; eSport-Bund Deutschland e.V., ESBD)  
41 and assert that these organisations struggle for recognition and acceptance among players.

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<sup>2</sup> The consumption of energy drinks is a widespread phenomenon in the esports community. Energy-drink companies are significant commercial partners for esports in the field of advertising (at events and also online) as well as sponsoring (of teams and individual players). While further research is necessary, studies have shown that energy drinks may boost physical and cognitive performance, but at the same time also have several adverse health effects that may lead to cardiovascular disorders (Gutiérrez-Hellín & Varillas-Delgado, 2021; Alsunni, 2015).

1 Unclarity also exists when it comes to addressing integrity-related issues in esports. Peng et al.  
2 (2020, p. 11) argue that “the rising power of (emerging) stakeholders in the network seeking to address  
3 integrity issues has caused fragmentation of the esports governance framework”. There are a number  
4 of what the authors call “self-proclaimed industry guardian organisations”, such as the already  
5 mentioned ESIC. According to their website, ESIC collaborates with a variety of important private  
6 organisations (e.g. The Electronic Sports League, ESL, which is one of the largest esports event  
7 organisers in Europe) and also public bodies (e.g. United Kingdom Gambling Commission). Together  
8 with their members, ESIC has developed different codes that can all be obtained from their website,  
9 including an Anti-Corruption Code, an Anti-Doping Code as well as a list of prohibited substances (ESIC,  
10 n.d.). These codes, however, are far from being universally accepted, let alone binding in the esports  
11 ecosystem. Gupta, Sharma & Gupta (2021) argue that the inexistence of a central authority regulating  
12 and governing the competitive esports industry through proper rules and regulations in particular  
13 hamper the development of an efficient and effective anti-doping policy in esports. According to the  
14 authors, there are various leagues and tournament holding organisations that have put out their own  
15 independent anti-doping guidelines with various levels of implementation. The ESL, for example, has  
16 a partnership with the World-Anti Doping Agency (WADA) to establish anti-doping measures, such as  
17 the identification of forbidden drugs (Lopez Frias, 2022a). However, the anti-doping regime brought  
18 forward by the ESL is criticised for having severe deficiencies (cf. Stivers, 2017). Gupta, Sharma & Gupta  
19 (2021) explain, for example, that some of the drugs are selectively banned on competition days, while  
20 others are banned in general; further, the guidelines are limited only to the tournaments conducted  
21 by the ESL. Due to this lack of standardisation, the authors conclude that esports still appears to count  
22 on athletes to self-monitor themselves.

23 Given the nature of esports activities and the necessity for acute periods of high concentration,  
24 the consumption of cognitive stimulants contained in medication such as Ritalin or Adderall seems to  
25 pose the largest issue to be addressed by anti-doping policy. Lopez Frias (2021; 2022a) describes the  
26 open and widespread use of such substances in the esports community as well as cooperative  
27 measures taken by organisations in the wake of major doping scandals (e.g. the case of *CS:GO*  
28 professional player Kory “Semphis” Friesen in 2015, who admitted to taking Adderall during an ESL  
29 tournament; or the case of professional *Halo* player Tyler “Calm Mentality” Mozingo who reported on  
30 ESPN in 2016 about the widespread use of Adderall by players in tournaments, including himself).  
31 Lopez Frias states that esports organisations seem to ground their anti-doping policies mainly on two  
32 reasons: integrity and player safety. He also explains that the organisations seem to have different  
33 notions of integrity, while at the base of the integrity principle he sees the concern that a (perceived)  
34 widespread use of performance-enhancing substances among esports players negatively affects  
35 esports’ popularity and, hence, financial gain.

36 Gupta, Sharma & Gupta (2021) were the first to provide empirical insights and perceptions of  
37 esports players on doping in particular. One of the authors’ main conclusions is that “[w]ithout a  
38 central point unifying the industry to define where the line of ethics is situated, subjects such as doping  
39 fall into a grey area which is damaging to the stakeholders in general” (p. 15). Hence, the authors argue  
40 for a central authority setting a formal and ethical code of conduct that all the athletes are expected  
41 to uphold and adhere to. In our paper we add another empirical perspective by focusing on  
42 professional *FIFA* esports players from Germany. Specifically, we explore the perceptions of these  
43 contract-bound esports players towards doping and performance-enhancing substances. Our study is  
44 informed by a particular theoretic approach brought forward by Schubert & Könecke (2014). By looking  
45 into the legitimization and delegitimization of social norms related to doping, the authors drafted a  
46 model according to which different forms of performance-enhancing behaviour are categorized  
47 subject to the dimensions legality and legitimacy (Figure 1).<sup>3</sup> They conclude that the process of labelling  
48 a certain performance-enhancing behaviour as “doping” occurs subject to its legality and legitimacy. If

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<sup>3</sup> According to the authors, legality in this context denotes lawfulness according to the rules given in a particular context (here: sport), while legitimacy is given when a practice is considered sufficiently compatible with the discussed values elementary to sport.

1 both legitimacy and legality are not provided, the classification as “doping” seems to be justified (ibid.,  
2 p. 7). Importantly, the authors stress that the distinction between the resulting three categories is  
3 dynamic: this means that after an appropriate problematization all practices formerly deemed  
4 legitimate at a certain moment in time could be classified as illegitimate (if a critical mass regards it as  
5 a violation of the core values of a given system) and, once it is prohibited (possibly caused by a resulting  
6 pressure for action on the respective authorities), as illegal and hence, doping.<sup>4</sup>

7  
8 <<< Please insert Figure 1 about here >>>

### 9 **3 Methods**

#### 10 **3.1 Data Collection**

11 Data was collected through semi-structured interviews with  $n = 9$  selected professional esports players  
12 of clubs taking part in the “bevestor Virtual Bundesliga (VBL) Club Championship”. The VBL is overseen  
13 by the German Football League (DFL), which is the association responsible for professional league  
14 football in Germany. To date, the VBL is the only professional football league competition directly  
15 integrated into the *FIFA* video game title, which is by far the best-selling sports video game worldwide.  
16 The VBL was started in cooperation with *FIFA* publisher EA Sports in 2012 as the first esports  
17 competition ever launched by a professional football league (DFL, n.d.). In 2020, the DFL has signed a  
18 long-term strategic partnership with the ESL while the credit institution bevestor has secured the  
19 naming rights for the VBL. The VBL Club Championship, in which clubs from Bundesliga and Bundesliga  
20 2 vie to be the German club champion in eFootball, was launched in the 2018-19 season.

21 All interviewees are bound per contract to one of the member clubs of the VBL Club  
22 Championship. However, they also take part in other *FIFA* tournaments that are not overseen by the  
23 VBL. Respondents were all male and between 18 and 27 years old. The interviews were conducted and  
24 recorded between March 27 and April 29, 2021, via the videoconferencing platform Zoom, which is  
25 considered a viable tool for collecting qualitative data (Archibald et al., 2019). The interviews lasted  
26 around 30 minutes on average.

27 The interview manual was informed by earlier research and the scholarly debate on doping  
28 and performance-enhancement in esports (see ch. 2). Besides obtaining the demographic background  
29 of the respondents, the interviews were structured into the following four subject areas that each  
30 contained a set of different open-ended questions to reflect the exploratory nature of the research  
31 project: (1) Level of knowledge about esports in general; (2) Perceptions about esports and *FIFA* in  
32 particular; (3) Knowledge and experience about/with performance-enhancing practices (in *FIFA*); (4)  
33 Anti-doping efforts in the esports ecosystem. At the end of the interview, the respondents were given  
34 the opportunity to raise points themselves that were not previously covered.

#### 36 **3.2 Data Analysis**

37 Prior to the analysis, all interviews were transcribed with the help of MAXQDA 2020, which is a well-  
38 known software tool to analyse qualitative data. The interviews were anonymised and each  
39 respondent was assigned an ID (RID: 01-09). A thematic analysis as proposed by Braun and Clarke  
40 (2006) and Joffe (2012) was used to analyse and interpret the data. This procedure represents a more  
41 pragmatic tool for coding as compared to other qualitative methods such as grounded theory (Guest,  
42 MacQueen & Namey, 2012).

43 Given the limited theoretic and conceptual knowledge on the research subject and to allow  
44 openness towards novel phenomena, an inductive coding approach was chosen and themes arose  
45 from the data itself. Coding was done by the lead author and involved the steps of paraphrasing,  
46 generalizing, and reducing the data (Mayring, 2000). Once the whole text material was coded, the final  
47 themes were summarised in a thematic map (see Figure 2). To ensure intersubjective verifiability,

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<sup>4</sup> Schubert & Könecke’s (2014) approach builds on the assumption that the doping phenomenon is, in contrast to common opinion, more a sociological than a medical or legal topic (cf. also Bette & Schimank, 2006).

1 intermediate results of the coding procedure were frequently discussed among the research team in  
2 order to reach agreement on the interpretation of data (Guest, MacQueen & Namey, 2012).

#### 3 **4 Results and Discussion**

4 The final thematic map is depicted in Figure 2. It consists of three main themes that have emerged  
5 from the responses of the interviewees: (1) high performance pressure; (2) ambivalent perception of  
6 doping and performance enhancement; (3) lack of anti-doping measures. Each main theme is divided  
7 into two subthemes. The themes are discussed in turn in the subsequent chapters.

8

9

<<< Please insert Figure 2 about here >>>

10

#### 11 **4.1 High performance pressure**

12 There was consensus among our respondents that professional *FIFA* esports is characterised by what  
13 they described as high performance pressure on the players, what they frame as the worry to  
14 underperform and to not living up to their own expectations and/or the expectations of others in  
15 competitions. The competitions and different tournaments are perceived as a highly competitive  
16 environment. These are of course features not unique to this context but characteristic for high-  
17 performance sport and esports in general. Based on our data, there are two aspects unique to *FIFA*: a  
18 volatile playing field and rather low prize money in comparison to other esports competitions. Each  
19 year publisher EA Sports releases a new edition of *FIFA* and for the VBL competitions as well as in  
20 official tournaments always the latest title is used. Furthermore, during a season, the publisher  
21 releases several so-called title updates (patches) that may considerably change the competition  
22 conditions for players. There was consensus among the interviewees that this volatility before and  
23 during a season results in a series of problems for the players:

24 [...] this annual rhythm is an issue because the game comes out every year and you have to relearn  
25 it every year. That's compared to League of Legends, for example, which is always the same, where  
26 only nuances are changed in the patches. [...] you always have to relearn it and you're always  
27 expected to perform at your best, which is a sick mental strain because you're always under  
28 pressure to perform. (RID: 01)

29 Players are forced to constantly adapt to new circumstances and sometimes need to deliver top  
30 performances immediately. This is reflected in a psychological burden on the players. One interviewee  
31 even posits that the constant pressure to perform may increase the likelihood of using performance-  
32 enhancing substances:

33 Every year a new title comes out. One person likes the game more, the other likes it less. And when  
34 you realize that you're not successful and it's not like the year before, because you always have  
35 expectations of yourself, especially in the professional ranks. And if you go into a game thinking  
36 you're going to match last year's performance, and then maybe you're a new pro and you don't  
37 get into the game at all. I think that's when maybe some people are tempted. (RID: 05)

38 This volatile playing field seems to be a distinctive feature of *FIFA*, as compared to other titles. One  
39 interviewee (RID: 01) believes that something should be done about this, for example by reaching an  
40 agreement between the publisher and event organisers, that during a season no updates of the title  
41 occur and thus a stable competition environment is created. Yet the feasibility of this suggestion  
42 appears questionable, as it would most likely mean that one version of the title is exclusively created  
43 for professional competitions. Given the complex organisational structures described in section 2 of  
44 the paper, reaching a consensus for this approach seems rather unlikely at the time being.

45 Apart from this, interviewees considered the prize pool a cause for increased pressure. The  
46 majority of interviewees noted their displeasure with the current prize money in official *FIFA*  
47 tournaments. Indeed, compared to other esports titles like *Dota 2*, *CS:GO* or *Fortnite*, the prize pool  
48 for *FIFA* is extremely low and the title is not even ranked among the top ten in this regard (Statista,  
49 2022). Interviewees agree that the reward does not match the effort. One interviewee in particular  
50 criticises the organisation of qualification tournaments:



1           There are always these qualifiers for the EA tournaments. And until you really earn something for  
2           your effort, I think you have to be in the top eight or so out of more than 1000 players. And that's  
3           very unrealistic. You invest there. If you get knocked out just before the last round [...] You've  
4           played almost 10 hours, 20 hours in total, for nothing. [...] It's just completely ridiculous. (RID: 02)

5           This view is also shared by other respondents, while it is admitted that the prize pools have increased  
6           in the past years. Still, there is a feeling among our interviewees that the publisher makes high profits  
7           with the title and therefore should redistribute much more among the professional player scene. This  
8           finding is in line with Peng et al. (2020), who criticise the powerful position and dominance of  
9           publishers in the ecosystem. However, it should be pointed out that respondents do not simply  
10          demand more money, but also suggest changes to the processes and structures of qualification  
11          tournaments. The current conditions are considered unsatisfactory and frustrating and again, as  
12          pointed out by one respondent, result in a lot of pressure to perform.

13          Some interviewees express their concern against the background that the main target group  
14          of esports are children and adolescents who may have difficulties to cope with such pressure to  
15          perform:

16                 I have noticed it myself, the pressure on esports players is absolutely not to be underestimated [...]   
17                 This is perhaps no longer an issue for professionals who have been in the business for years, but  
18                 for the young professionals [...] it was like this for me at the beginning that I also put a lot of  
19                 pressure on myself and you don't really think about that. I think that's an important point, where I  
20                 find that there is little education available for the young professionals here. (RID: 05)

21          This high density in performance combined with the desire for success of junior esports players  
22          represents a likely motive for the interviewees to use means that increase personal performance:

23                 In particular because the pressure to perform is getting higher and higher. The competition is  
24                 getting bigger and bigger, especially in esports. The industry is growing all the time. More and more  
25                 people want to be esports players. Many teenagers nowadays already have a big dream. All of  
26                 them want to earn money with their hobby. They all want to get into esports, so to speak. And  
27                 that's why I can imagine that some of them resort to such means to increase their chances. (RID:  
28                 03)

29          Based on our data, esports organisations, at least those involved in *FIFA*, provide little education to  
30          young professionals on how to deal with the challenges of a highly competitive environment and  
31          performance pressure. This appears problematic in particular due to the young age of the players.<sup>5</sup>  
32          Educational measures in sport simulation games could, for example, be inspired from the approaches  
33          in "traditional" sport, where athletes are trained to develop (psychological) strategies to cope with  
34          performance pressure.

35

#### 36          **4.2    Ambivalent perception of doping and performance enhancement**

37          The perceptions of our respondents of both the prevalence and the permissibility of performance-  
38          enhancing substances are ambivalent. While our respondents clearly consider the use of prescribed  
39          drugs an illegitimate form of performance enhancement, the consumption of energy drinks, gaming  
40          boosters or tobacco is assessed as legitimate and commonly accepted. Interestingly, none of our  
41          interviewees has ever personally observed any clear abuse of what they perceived as doping in their  
42          *FIFA* esports careers to date. Hence, in our sample doping is not considered as a serious problem in  
43          the context of *FIFA*, even though it is admitted that there may be unreported cases in this respect.

44          Knowledge and experience with performance-enhancing substances in general seem to be  
45          limited among our respondents. There also seems to be less consensus about how or if at all  
46          performance in *FIFA* can be increased through the ingestion of substances. One approach to explain  
47          that brought forward by some interviewees is that the performance in *FIFA* as a football simulation

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<sup>5</sup> Based on Lopez Frias (2021), 21% of gamers in the U.S. and 29% of gamers in the UK are under the age of 18; in Europe, 76% of people aged 6–10, 84% of those aged 11–14, and 74% of those aged 15–24 play video games.

1 game is seen as a complex mix of cognitive and physical elements and due to that the effectiveness of  
2 performance-enhancing substances is contested.

3 A few respondents appear to have a more sophisticated knowledge and see potentially positive  
4 effects on the performance in drugs that enhance the ability to stay focused and vigilant:

5 Actually it brings more to stay calm [...] maybe Ritalin could make it better, because then you're  
6 more in the tunnel. But just not as, I've got to rip out a tree now, like with cocaine. (RID: 09)

7 [...] the motives are definitely higher concentration ability [...] that you probably get into such a  
8 tunnel, that you block out more things from the outside and that you probably have a higher  
9 perception ability, that you can perceive much more things at the same time, see much more  
10 situations at the same time now in relation to *FIFA* on the field, than what you would see now  
11 without performance enhancing substances. (RID: 04)

12 Interestingly, the understanding of doping for most respondents seems to be based on whether  
13 something is already officially banned or not, what is in line with our conceptual underpinning  
14 (Schubert & Könecke, 2014). One interviewee (RID: 01) states that a definition of doping in *FIFA* esports  
15 is difficult because it cannot be compared to the physical exertion in "traditional" football (soccer) or  
16 a marathon, for example. We found that interviewees had a differentiated view on the question which  
17 substances in *FIFA* esports are considered legitimate, illegitimate or even illegal:

18 When I think about doping in esports, I actually think about the fact that it's not even, I guess, used  
19 in esports. The only thing you could say would be if you used these gaming boosters. But the  
20 gaming boosters are not doping, they are legal. And when I think about doping in esports, I actually  
21 have the feeling that it's not used in the same way as it is in competitive football. (RID: 04)

22 It was frequently noted that stimulants containing caffeine, such as coffee, energy drinks or gaming  
23 boosters, are not regarded as doping. Gaming boosters in particular play an increasingly important role  
24 in that context. In Germany, they are currently registered as nutritional supplements and the  
25 ingredients are essentially caffeine and a number of vitamins and amino acids. Gaming boosters are  
26 sold in powder form and thus allow individual dosage by the consumer. Manufacturers claim that  
27 instead of a sugar-induced quick and short energy kick that is followed by an equally quick and intense  
28 energy low as in classic energy drinks, high-quality gaming boosters offer a gentler but longer-lasting  
29 energy boost. They are thus advertised as perfectly suitable for long and fatiguing game sessions.

30 something like a booster, "LevlUp" for example. There are many boosters, it's just one example,  
31 there's also "Emporgy" and all the influencers are already advertising for boosters. These boosters  
32 are known for the fact that they make you awake, because they contain a lot of caffeine, and that  
33 they increase your performance, so to speak, by promoting your concentration, because  
34 apparently there is something in these boosters that makes you concentrate harder. (RID: 08)

35 Coming back to Wall Tweedie's (2022) assessment regarding the relationship between energy drinks  
36 and the gaming industry, gaming boosters and the latter thus seem to form an even more "perfect  
37 match". In fact, they are heavily advertised by streamers and influencers on platforms such as YouTube  
38 and Twitch nowadays and appear to have strongly pushed back classic energy drinks in the esports  
39 player- and viewership. Gaming booster manufacturers such as *LevlUp* also sponsor larger esports  
40 events (e.g. the European TwitchCon convention in 2019). The declaration as nutritional supplement,  
41 however, gives reason for concern: National legislations such as, for example, in Germany prescribe a  
42 national legal limit of 320 milligrams of caffeine per litre applied to energy drinks (Bundesregierung,  
43 2016). The exact amount must be indicated on the packaging; drinks containing as little as 150  
44 milligrams of caffeine per litre must indicate that the product contains increased amounts of caffeine  
45 and is not recommended for children and pregnant or breastfeeding women (ibid.). This regulation  
46 does not affect nutritional supplements and hence such indications lack on gaming booster packaging.  
47 Furthermore, among our respondents there also appears to be uncertainty about the exact ingredients  
48 of gaming boosters:

1 It's just hard to say. In these boosters alone, these gaming boosters, you don't really know what's  
2 in them. That's why I can imagine that some people do something that might give them an unfair  
3 advantage. (RID: 01)

4 Besides energy drinks and gaming boosters, also the use of oral tobacco Snus seems widespread in  
5 *FIFA* esports and it is framed as having performance-enhancing effects:

6 I mean, I know many people who, I don't know if it's part of doping, but there is this snus. [...] They  
7 are these bags that you put under your lip and then you are somehow fitter or something, I don't  
8 know. A lot of people take it, which I would never have thought [...] Also in live streams and so on,  
9 I don't know how hard the stuff is, but it tends to be downplayed and then people always say: "Oh  
10 man! My concentration is slipping. Let's shoot some snus first". That's what people say. (RID: 02)

11 It is of course important to note in this context that energy drink (or tobacco) consumption should not  
12 be blanketly grouped with the abuse of prescription drugs like Adderall (Wall Tweedie, 2022). Caffeine  
13 has been removed from WADA's List of Prohibited Substances and Methods in 2004 and also nicotine  
14 is not listed here. Both substances, however, are included in WADA's monitoring program. As our data  
15 indicates, the use of energy drinks, gaming boosters and tobacco is widespread among professional  
16 *FIFA* players. Given the mentioned young age of players and viewers in esports, also unhealthy side  
17 effects resulting from an excessive ingestion of these substances need to be taken seriously. A critical  
18 discussion about energy drinks, gaming boosters and Snus should, thus, not just revolve around the  
19 aspect whether or not they have performance-enhancing effects. This is particularly important, given  
20 that one of the pillars of anti-doping policies in esports is to protect and promote health (Lopez Frias,  
21 2022a).

22 Put together, while acknowledging the widespread use of allegedly performance-enhancing  
23 substances such as energy drinks, gaming boosters or snus, our respondents commonly agreed on the  
24 view that at least *FIFA* esports does not have a problem with what they perceived as doping. The  
25 consumption of these substances while playing esports is neither considered illegitimate nor illegal. A  
26 simple explanation brought forward by one respondent (RID: 08) is that everybody is given the same  
27 opportunities as these products can be legally acquired on the internet. Accordingly, the use in esports  
28 is not considered unfair and, referring to our theoretical underpinning by Schubert & Könecke (2014),  
29 currently seen as legitimate enhancement.

30 In contrast, prescription drugs such as Ritalin or Adderall are commonly framed as doping  
31 agents by our respondents. This phenomenon is related to the criminal activity present in the  
32 circulation of prescription drugs for non-medical purposes. In the view of our interviewees, these  
33 substances are seen as a form of illegitimate enhancement that should also be declared illegal in  
34 esports contexts, as illustrated in the following quotations:

35 [...] if I had the power now, I don't think I would ban gaming boosters, energys and so on. But of  
36 course these things like Ritalin, for example, I would say harder things, should be banned. (RID: 04)

37 So there is no list of prohibited things. But it would actually be a good idea to introduce something  
38 like that. It counts for everything, but when I think of things like Ritalin or similar, for me these are  
39 substances that should actually be included in doping cases. (RID: 06)

40 In fact, the list of prohibited substances issued by ESIC contains dextroamphetamine (contained in e.g.  
41 Adderall) and methylphenidate (contained in e.g. Ritalin).

42

### 43 **4.3 Lack of anti-doping measures**

44 Our interviewees largely agreed that serious anti-doping efforts on the part of publishers or event  
45 organisers involved in *FIFA* are virtually non-existent. Neither are they aware of any educational  
46 programmes or activities led by the organisations involved, nor have they ever witnessed or heard  
47 about doping control tests in the context of *FIFA* events. It was only when explicitly asked that two  
48 respondents (RID: 02, RID: 05) recalled a webinar administered by the DFL at the beginning of the  
49 current season that primarily dealt with match-fixing in connection with sports betting, but also  
50 touched upon the topic of doping. The lack of knowledge in that field is astonishing, considering that

1 the ESL is a strategic partner of the VBL and itself has been cooperating with WADA for some years  
2 now to establish anti-doping measures and also the Federation Internationale de Football Association  
3 (FIFA) had introduced drug testing during the FIFA eWorld Cup in 2018 (Lopez Frias, 2022a).

4 As stated above, doping as understood by our respondents is currently not considered to be a  
5 serious problem in the context of *FIFA*. Hence, also the implementation of anti-doping regulations and  
6 measures is not deemed imperative by everybody:

7 I don't see it as necessary, but it could be done. As I said, I would have no problem with that if it  
8 were introduced. I don't think it would bother anyone, but I don't think it's necessary. (RID: 09)

9 However, this seems to be an isolated opinion among our respondents, as the majority would  
10 appreciate more efforts and see the need for prevention work in *FIFA* esports to increase awareness  
11 and raise sensitivity towards performance-enhancing substances among players. Most respondents  
12 agree that much more information should be provided by the organisations in charge:

13 The topic of education has simply been neglected far too much these days [...]. It's relatively easy  
14 nowadays. You sit someone down and then you also do it via a zoom meeting or something, that's  
15 actually no longer a problem nowadays online. And then every player is enlightened, everyone is  
16 warned. (RID: 07)

17 Along with the provision of information, our respondents would also see a lot of merit in the existence  
18 of a clear list of prohibited substances in *FIFA* competitions, following the example of WADA in  
19 “traditional” sport. However, the mere adaptation of the prohibited list from “traditional” sport is  
20 ruled out by our respondents. Such a list would have to be adapted to the specific requirements of  
21 esports. This finding is in line with Holden, Kaburakis & Wall Tweedie (2019) and Shinohara (2021),  
22 who hold that doping substances and methods in esports are different from those of “traditional”  
23 sport. Furthermore, the implementation of such a list should come along with a strict testing regime,  
24 as pointed out by one interviewee:

25 I think it would definitely make sense to introduce such a list. Of course, this only goes hand in  
26 hand with appropriate testing, because otherwise it's pointless to ban something like this if you  
27 can't control it. (RID: 03)

28 The lack of control and testing mechanisms in place was a theme that repeatedly occurred during our  
29 interviews. Strict testing followed by harsh penalties are considered inevitable and would also make  
30 education more effective:

31 I think it's a combination of both, because if someone really wants to do it, I don't think education  
32 will help. He will do his thing. That's why there need to be controls, simply to pull out these black  
33 sheep. And the penalties should not be kept too low, because you can see for yourself in the  
34 current situation, when the penalties are low, that people don't necessarily stick to them, that's  
35 just the way people are. And if you really have an example of someone who did that and then really  
36 got a punishment like that. That could definitely have a deterrent effect on people. (RID: 05)

37 The COVID-19 pandemic has also affected the practicability of doping controls: in pre-pandemic times,  
38 full online events were often used as qualification tournaments for major championships that would  
39 then take place face-to-face. However, due to the pandemic the number and importance of full online  
40 events have dramatically increased. This has, of course, consequences for anti-doping measures, as  
41 systematic drug testing in online competitions currently appear practically impossible. Also our  
42 respondents highlighted this challenge:

43 Currently everything takes place online, there are no offline events where any tests can be carried  
44 out. It's just very difficult to see whether this is being adhered to at all at the moment. This is due  
45 to the current situation, because everything takes place online. Theoretically, anyone can smoke  
46 anything at home without anyone noticing. (RID: 02)

47 Yes, it would be a good idea if there were also control measures. Of course, it's difficult to control  
48 online qualifying events with thousands of players all sitting at home, that's for sure. But if the

1 events take place offline and if they are played for the world championship or something similar,  
2 then something like that should be controlled. (RID: 06)

3 Finally, it is important to note that our interviewees saw the extent of the problem of doping  
4 and performance-enhancement differently from the necessity of further anti-doping measures. While  
5 to date the personal experience among our sample with what they perceive as doping is limited, many  
6 of them suspect a considerable number of unreported cases:

7 [...] But I suspect that there are significantly more than you think. But it is not always found.  
8 Because I also believe that many do it completely unknowingly. For example, they take something  
9 that is actually forbidden, even though they simply don't know it. (RID: 01)

10 So I think that there is definitely an underreporting. Of course, it's also due to the fact that we don't  
11 really have any testing procedures. That will certainly have to come in further steps. But I think  
12 that there is definitely a larger number of unreported cases [...]. In the long term, I think we could  
13 be on a dangerous path if we don't create new infrastructures and don't think about these issues.  
14 Then I think the number of unreported cases could grow and grow, because if there are no controls,  
15 there are no punishments, and if this is perceived as okay, then I think many people will continue  
16 to resort to such means because of the pressure to perform. (RID: 03)

17 The second part of the latter quote also illustrates the concern that the extent of the use of  
18 performance-enhancing substances may considerably increase if this topic continues to remain largely  
19 unaddressed.

20 Taken together, the majority of our respondents see a need for (1) the provision of more  
21 education and information, (2) the definition a clear list of prohibited substances and (3) the  
22 implementation of testing and sanctioning mechanism in *FIFA* esports. This finding is in line with earlier  
23 research and also organisations such as ESIC admit that education regarding drug use, and the  
24 implementation of drug testing is largely absent across esports (Holden, Kaburakis & Wall Tweedie,  
25 2019). As pointed out by Lopez Frias (2022a), achieving this would demand a single esports governing  
26 body that standardizes anti-doping criteria, testing practices, and sanctions to guarantee that all  
27 competitors are subject to the same anti-doping rules.

## 28 **5 Conclusions and Implications**

29 Our analysis has explored the perceptions on performance-enhancing substances related to esports  
30 competitions by one of the key stakeholders in the esports ecosystem: professional players. The  
31 qualitative approach in our study has provided insights into this group's perceived legitimacy and  
32 illegitimacy of different substances to enhance performance in the context of *FIFA* esports. We have  
33 thus contributed to shedding light into a topic that has only rather recently raised the interest in the  
34 respective academic communities, largely driven by cases of players using performance-enhancing  
35 substances in the esports industry, two examples of which were mentioned above.

36 The core findings that emerged out of the data are a high performance pressure in *FIFA* as  
37 perceived by players, an ambivalent perception of doping and performance enhancement and a lack  
38 of anti-doping measures on the part of organisations involved. The volatile playing field (due to yearly  
39 releases of the *FIFA* title as well as the constant updates during a season) together with low prize  
40 money fuel the pressure on the players and create a rat race-like scenario (Akerlof, 1976) that is well  
41 known in competitive sports. In the context of *FIFA* esports, this can result in "overinvestment" by the  
42 players, which can easily be at the expense of their health given that tournaments are oriented at long  
43 and fatiguing game sessions (Gupta, Sharma & Gupta, 2021). As our data indicates, these conditions,  
44 paired with complicated control opportunities and hence a large degree of intransparency (in  
45 particular in online events), may create incentives for *FIFA* players to resort to performance-enhancing  
46 substances. It therefore appears to be even more alarming that our respondents attest the respective  
47 organisations a blatant lack of serious anti-doping efforts in the sense of providing education and  
48 information about performance-enhancing substances. As our findings illustrate an uncertainty about  
49 the exact ingredients of gaming boosters as well as their potential performance-enhancing effects, a  
50 further discussion about gaming boosters in the context of esports may make sense, in particular due

1 to potential health issues involved as a consequence of overconsumption. Such a discussion would  
2 need to be informed by a serious reflection in what way the endorsement of such cognitive stimulants  
3 by stakeholders should be maintained in the future.

4 The use of other currently legal substances used in esports should also be addressed due to  
5 their overall detrimental health effects. An example is Snus. The substance was reported to be  
6 commonly used in *FIFA* by our interviewees, which they considered legitimate. Snus and other types  
7 of chewing tobacco have been very common in professional baseball in the USA. They were banned in  
8 some leagues and outlawed for all new players entering the Major Leagues in 2016. The major reason  
9 was the fact that these substances can cause different types of cancer, and not their allegedly  
10 performance-enhancing effects. Nowadays, many organisations in professional baseball openly  
11 oppose their use (Christie, 2019).

12 Our data make the case that at least the organisations overseeing the *FIFA* competitions in  
13 Germany (e.g. VBL, DFL, ESL) may need to provide a more systematic approach how to address the  
14 topic of performance-enhancing substances within their realm. Further, a (perceived) widespread use  
15 of illegitimate performance-enhancing substances may negatively impact the demand of fans or  
16 consumers as well as sponsors that do not want to be associated with such a field (Lopez Frias, 2022a).  
17 Consequently, assuming that as commercial enterprise the primary concern of publishers is to make  
18 profit (Funk, Pizzo & Baker, 2018), a credible fight against doping could eventually even be in the  
19 financial interest of *FIFA* publisher EA Sport.

## 20 **6 Limitations and suggestions for further research**

21 Like all studies that adopt such research designs, also our study has several limitations that lead to  
22 suggestions for future research. First and foremost, we only investigated a specific group among the  
23 esports industry: professional players of the title *FIFA* that are contract-bound to one of the clubs  
24 taking part in the “bevestor Virtual Bundesliga Club Championships” in Germany. Further, due to  
25 challenges in the recruitment of interviewees given the sensitivity of the research topic, our sample  
26 consists of nine respondents only. Both the small sample size as well as the restrictions to a particular  
27 geographic region and a particular esports title considerably limit the generalisability of the findings to  
28 the whole esports community. We therefore encourage scholars to adopt similar approaches and also  
29 quantitative research designs in other geographical contexts and, probably even more promising,  
30 other esports titles. Titles such as *League of Legends*, *Dota 2*, *CS:GO* or *Fortnite* enjoy a much higher  
31 player- and viewership worldwide and easily overshadow *FIFA* when it comes to the significance for  
32 the overall global esports industry. It would be interesting to investigate if there are varieties in the  
33 perceptions of doping and performance enhancement across the different esports titles. Given that  
34 *FIFA* is a sport simulation game and that esports competitions here are often administered by the  
35 respective governing bodies of “traditional” football (e.g. DFL, FIFA), this may easily reflect upon how  
36 performance enhancement is perceived and dealt with.

## 37 **References**

- 38 Akerlof, G. (1976). The Economics of Caste and of the Rat Race and Other Woeful Tales. *The Quarterly*  
39 *Journal of Economics*, 90(4), 599–617. <http://dx.doi.org/10.2307/1885324>
- 40 Alsunni, A.A. (2015). Energy Drink Consumption: Beneficial and Adverse Health Effects. *International*  
41 *Journal of Health Sciences*, 9, 468–474.
- 42 Archibald, M.M. et al. (2019). Using Zoom Videoconferencing for Qualitative Data Collection:  
43 Perceptions and Experiences of Researchers and Participants. *International Journal of*  
44 *Qualitative Methods*, 18, 1–8. DOI: 10.1177/1609406919874596
- 45 Bette, K.-H. & Schimank, U. (2006). *Die Dopingfalle: Soziologische Betrachtungen [The Doping Trap.*  
46 *Sociological Considerations]*. Bielefeld: Transcript Verlag.
- 47 Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in*  
48 *Psychology*, 3, 77–101. doi: 10.1191/1478088706qp063oa
- 49 Bundesregierung. (2016). *Koffein: Die Dosis macht's [Caffeine: The dose makes the difference]*.  
50 Retrieved from

1 <https://www.deepl.com/translator#de/en/Koffein%3A%20Die%20Dosis%20macht's>.  
2 Accessed February 17, 2022.

3 Christie, C. (2019). *Baseball and the Slow Death of Chewing Tobacco*. Retrieved from  
4 [https://twinsdaily.com/news-rumors/minnesota-twins/baseball-and-the-slow-death-of-](https://twinsdaily.com/news-rumors/minnesota-twins/baseball-and-the-slow-death-of-chewing-tobacco-r7934/)  
5 [chewing-tobacco-r7934/](https://twinsdaily.com/news-rumors/minnesota-twins/baseball-and-the-slow-death-of-chewing-tobacco-r7934/)

6 Cunningham, G.B., et al. (2018). eSport: construct specifications and implications for sport  
7 management. *Sport Management Review*, 21(1), 1–6.  
8 <https://doi.org/10.1016/j.smr.2017.11.002>

9 DFL. (n.d.). *Informationen zur Virtual Bundesliga [Information on the Virtual Bundesliga]*. Retrieved  
10 from <https://www.dfl.de/de/hintergrund/efootball/informationen-zur-virtual-bundesliga/>.  
11 Accessed February 17, 2022.

12 ESIC. (n.d.). *Our Codes*. Retrieved from <https://esic.gg/codes/>. Accessed February 24, 2022.

13 Funk, D.C., Pizzo, A.D., & Baker, B.J. (2018). Esport management: embracing esport education and  
14 research opportunities. *Sport Management Review*, 21(1), 7–13.  
15 <https://doi.org/10.1016/j.smr.2017.07.008>

16 Guest, G., MacQueen, K.M., & Namey, E.E. (2012). *Applied thematic analysis*. Los Angeles: SAGE.

17 Gupta, D., Sharma, H. & Gupta, M. (2021). Doping as a barrier in universal acceptance of esports.  
18 *International Journal of Sports Marketing and Sponsorship*, DOI: 10.1108/IJSMS-05-2021-0105

19 Gutiérrez-Hellín, J., & Varillas-Delgado, D. (2021). Energy Drinks and Sports Performance,  
20 Cardiovascular Risk, and Genetic Associations; Future Prospects. *Nutrients*, 13(3), 715.  
21 <https://doi.org/10.3390/nu13030715>

22 Heidenreich, H., Brandt, C., Dickson, G. & Kurscheidt, M. (2022). Esports Associations and the Pursuit  
23 of Legitimacy: Evidence From Germany. *Front. Sports Act. Living* 4:869151. doi:  
24 10.3389/fspor.2022.869151

25 Holden, J.T., Rodenberg, R.M. & Kaburakis, A. (2017). Esports corruption: gambling, doping, and global  
26 governance. *Maryland Journal of International Law*, 32(1), 236–273.

27 Holden, J.T., Kaburakis, A. & Wall Tweedie, J. (2019). Virtue (al) games—real drugs. *Sport, Ethics and*  
28 *Philosophy*, 13(1), 19–32. <https://doi.org/10.1080/17511321.2018.1459814>

29 Joffe, H. (2012). Thematic analysis. In D. Harper & A. R. Thompson (Eds.), *Qualitative research methods*  
30 *in mental health and psychotherapy. A guide for students and practitioners* (pp. 209–223).  
31 Chichester, England: Wiley-Blackwell.

32 Kelly, S.J., Derrington, S. & Star, S. (2022). Governance challenges in esports: a best practice  
33 framework for addressing integrity and wellbeing issues. *International Journal of Sport Policy*  
34 *and Politics*, 14(1), 151–168, DOI: 10.1080/19406940.2021.1976812

35 Kim, Y.H. Nauright, J. & Suveatwatanakul, C. (2020) The rise of E-Sports and potential for Post-COVID  
36 continued growth. *Sport in Society*, 23(11), 1861–1871, DOI: 10.1080/17430437.2020.1819695

37 Kulkarni, M. (2016). *The continued rise of eSport – Efforts to combat match fixing and improve integrity*.  
38 Retrieved from [https://www.lawinsport.com/topics/item/the-continued-rise-of-esport-](https://www.lawinsport.com/topics/item/the-continued-rise-of-esport-efforts-to-combat-match-fixing-and-improve-integrity?tmpl=component&print=1)  
39 [efforts-to-combat-match-fixing-and-improve-integrity?tmpl=component&print=1](https://www.lawinsport.com/topics/item/the-continued-rise-of-esport-efforts-to-combat-match-fixing-and-improve-integrity?tmpl=component&print=1)

40 Leis, O. & Lautenbach, F. (2020). Psychological and physiological stress in non-competitive and  
41 competitive esports settings: A systematic review. *Psychology of Sport and Exercise*, 51,  
42 101738. <https://doi.org/10.1016/j.psychsport.2020.101738>

43 Lopez Frias, F. J. (2020). “Fueling up” Gamers. The Ethics of Marketing Energy Drinks to  
44 Gamers. *Neuroethics*, 14(2), 239–249. doi.org/10.1007/s12152-020-09442-8

45 Lopez Frias, F. J. (2022a). The “big red bull” in the esports room: Anti-doping, esports, and energy  
46 drinks. *Performance Enhancement & Health*, 10(1), 100205.  
47 <https://doi.org/10.1016/j.peh.2021.100205>

48 Lopez Frias, F. J. (2022b). Esports anti-doping advocates and their strange bedfellow: A matter of  
49 integrity and sport ethics. *Performance Enhancement & Health*, 10(1), 100216.  
50 <https://doi.org/10.1016/j.peh.2021.100216>

51 Mayring, P. (2000). Qualitative Content Analysis. *Forum: Qualitative Social Research*, 1(2).

- 1 Parry, J. (2018). E-sports are Not Sports. *Sport, Ethics and Philosophy*, 13(1).  
2 <https://doi.org/10.1080/17511321.2018.1489419>
- 3 Peng, Q., Dickson, G., Scelles, N., Grix, J. & Brannagan, P.M. (2020). Esports governance: exploring  
4 stakeholder dynamics. *Sustainability*, 12(19), 8270. <https://doi.org/10.3390/su12198270>
- 5 Schubert, M. & Könecke, T. (2015). 'Classical' doping, financial doping and beyond: UEFA Financial Fair  
6 Play as a policy of anti-doping. *International Journal of Sport Policy and Politics*, 7(1), 63–86.  
7 <http://dx.doi.org/10.1080/19406940.2013.854824>
- 8 Shinohara, T. (2021). The Protection of Esports Players against the Use of Doping Substances and  
9 Methods under the European Convention on Human Rights: The Swiss Example. *International*  
10 *Journal of Esports*, 1(1).
- 11 Sousa, A. et al. (2020). Physiological and Cognitive Functions Following a Discrete Session of  
12 Competitive Esports Gaming. *Frontiers in Psychology*, 11.  
13 <https://doi.org/10.3389/fpsyg.2020.01030>
- 14 Statista. (2022). *Leading eSports games worldwide in 2021, by cumulative tournament prize pool*.  
15 Retrieved from [https://www.statista.com/statistics/501853/leading-esports-games-](https://www.statista.com/statistics/501853/leading-esports-games-worldwide-total-prize-pool/)  
16 [worldwide-total-prize-pool/](https://www.statista.com/statistics/501853/leading-esports-games-worldwide-total-prize-pool/). Accessed January 30, 2022.
- 17 Stivers, C. (2017). The First Competitive Video Gaming Anti-Doping Policy and Its Deficiencies Under  
18 European Union Law. *San Diego International Law Journal*, 18(2), 263–294.
- 19 Wall Tweedie, J. (2022). Esports: There is a “red bull” in the room but it's a jungle out there.  
20 *Performance Enhancement & Health*, 10(1), 100215.  
21 <https://doi.org/10.1016/j.peh.2021.100215>



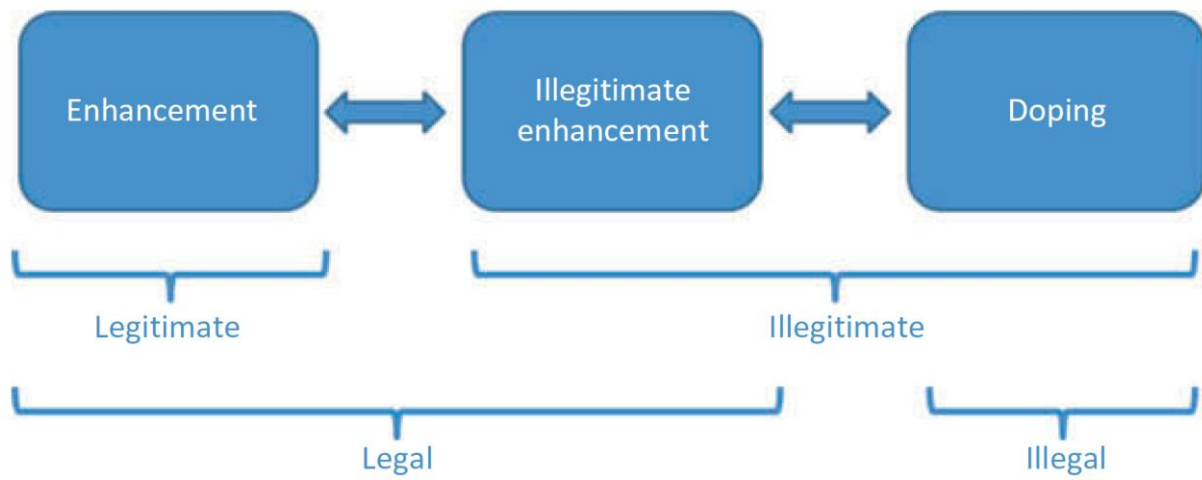


Figure 1: Classification of doping and enhancement in sport subject to legality and (perceived) legitimacy (Source: Schubert & Könecke 2014, p. 7)

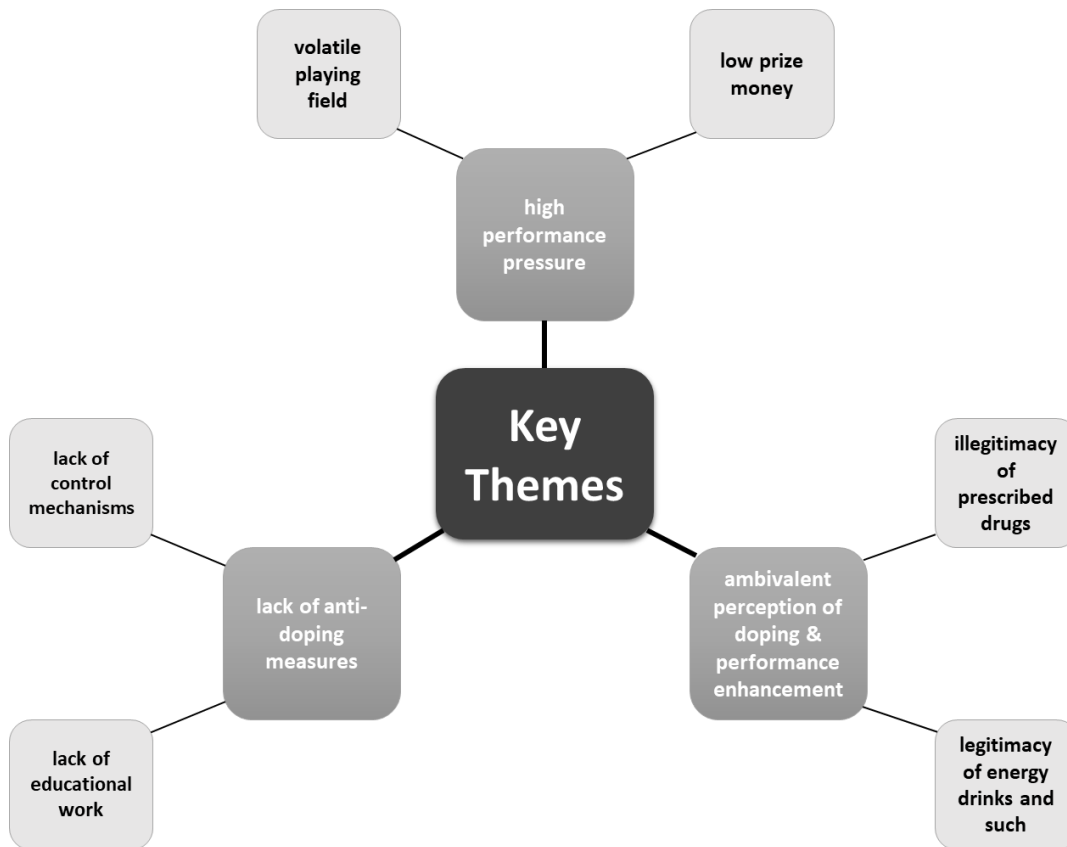


Figure 2: Final thematic map with all themes that emerged from the data

**Declaration of Competing Interest**

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.