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2023-05-18

Deposited version:
Accepted Version

Peer-review status of attached file:
Peer-reviewed

Citation for published item:
Morais, A., Oliveira, A. & Pinheiro, A. (2023). Look at me playing? – The eSports importance on consumers emotions. In Du, K.-L. (Ed.), 2022 Euro-Asia Conference on Frontiers of Computer Science and Information Technology (FCSIT). (pp. 246-250). Beijing, China: IEEE.

Further information on publisher's website:
10.1109/FCSIT57414.2022.00058

Publisher's copyright statement:
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Look at me Playing? – The eSports importance on consumers emotions

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***Abstract*— *The world of video games is not only gaining a growing number of fans but is also getting more and more attention from the media and social networks. The eSports are electronic sports known as competitive video gaming and have already a large following all over the world, over the past few years, being a phenomenon of audiences. Alongside this growth, scientific interest in studying this topic has also been growing, as shown by the significant number of scientific papers that have been published on this subject. The research about the effects that eSports have on its players has different perspectives, such as positive or negative impacts. Thus, supported by what has been studied and documented in previous studies – according to the available research papers (indexed in journals or international conferences) –, it is important to understand what the importance of the eSports for its players and spectators is. This study enhances what has already been investigated about this topic. Starting with our research question 'How do esports affect their consumers emotionally?', a systematic review was conducted to resume and analyze the impacts that competitive video gaming has emotionally on eSports' consumers. According to the defined inclusion criteria, 20 relevant published papers were selected through the electronic databases Google Scholar and Scopus, published between 2016 and 2022, and a deep analysis of the literature – a meta-analysis – was conducted. Iramuteq and MonkeyLearn software were used to determine and shape the main themes and concepts of emotional impacts, through textual analyses. This review draws insight into the effects that competitive video gaming has on the mental health of the players and suggests that future studies may focus on some interventions to deal with the negative impact that eSports has emotionally.*

Keywords*— *eSports, health, technologies, emotions, gaming

I. Introduction

Electronic Sports (eSports) have been experiencing a very strong growth in popularity and are among the fastest growing forms of digital entertainment, driven largely by technological developments, such as the increasing prevalence of online games [1]. With the increase of popularity, nowadays the audience of the main esports tournaments also exceeds that of traditional sporting events, as is the example of the 2017 esports League of Legends World Championship that received 60 million viewers, while the National Basketball Association (NBA) drew 20.4 million viewers [2].

The eSports are organized video game competitions, commonly referred as virtual sport and competitive gaming [3]. Generically, they refer to "an organized and competitive approach to playing computer games" [4].

Due to such growth, a few key disciplines have been increasingly directed their academic endeavors toward explicitly analyzing the unique characteristics of eSports [1] [5].

This study aims to analyze what has been studied regarding eSports and the eventual emotional effects on consumers, players and spectators.

A. Motivation for eSports consumption

The main question that has been analyzed is "What makes people to consume eSports"? In consequence, why are so many gamers and viewers following this practice?

In a study carried out by Pedro Santos [6], in 2020, it was determined that the main drive for playing is "competition" itself. Also, the study revealed that "pleasure" and "having fun" are, respectively, the 2nd and 3rd most important parts in motivating the participants, followed by friendships and social gathering [6].

B. Emotions in sports

Emotions are a thematic that is already very much analyzed on studies associated with sports. One of the focused dimensions has been the different emotional triggers.

For instance, Nicholls et al. [7] demonstrate that "receiving criticism from a coach or a parent", "watching an opponent perform", "being distracted by viewers" or "watching an opponent cheating are some of the most stressors faced by rugby players", highlighting that the social context continuously influences athlete's emotions.

C. Emotions in video gaming

Some studies found that emotional experience is an important reason for people playing games, demonstrating that even negative emotions could bring benefits for the players [8].

Also, as in sports, emotions can have an impact on how gamers play, in the decision-making or on how the gamer will enjoy the game.

Games research has also identified the social nature of emotions [9]. Lazzaro noted that a variety of emotions like competition, teamwork and socializing opportunities were enjoyed by players.

In 2021, a study regarding emotional learning in high school eSports [10] verified that the eSports "league" was self-management, on the one hand, and social-awareness and relationships skills, on the other.

Maciej, James and Lukasz analyzed the impact that emotions had when playing a video game [11]. They "found that both pleasant emotions (amusement and enthusiasm) resulted in increased approach tendencies during the gameplay, compared to the neutral condition".

They also concluded that “enthusiasm produced stronger performance-related approach tendencies than amusement” and this difference “in approach tendency between enthusiasm and amusement translated into stronger positive behavioral effects for enthusiasm compared to amusement”.

D. Tilt

Tilt is an originated term from pinball, where frustrated players would hit the machine; the pinball machine would flash “tilt” and the game would be over [12]. According to Minerva et al. [13], “tilt is an emotional reaction to in-game events that cause a deterioration in gameplay.”

Tilt is mainly associated with frustration and rage while playing and usually arises along with investigations of toxic or deviant behavior.

Similarly, in other sports it is frequently followed by repetitive plays that may lead to losing streaks negatively impacting player experience [14].

E. eSports spectatorship

In 2016, some literature revealed some interesting aspects regarding eSports online spectatorship. One of the examples is that, as opposed to traditional sports, where the primary attractions are matches, events and tournaments, eSports are, in addition, regularly Broadcast by individual streamers, gamers who broadcast videogames in a virtual, online way, who everyday play to viewers, besides of major events streams [15].

Christopher also identified [16] that, in Portugal, streaming has been growing and has been boosted by eSports organizations, as well as by the most charismatic and well-known players in the Portuguese community.

These streams create a bond between streamer and viewer, which will progressively increase viewers' motivation to watch the streams and "spend time" with the streamer.

Also, eSports spectating frequency is predicted by escapism, acquiring knowledge about the games being played, novelty of new players and teams, and athlete aggressiveness [1]

II. Methodology

To understand how eSports impact emotionally its consumers in the last 5 years, analyses will be carried out using text and data mining.

We used Iramuteq and MonkeyLearn to perform content and textual analysis of twenty emotion on eSports papers, obtained from Google Scholar website, to analyze and illustrate how authors conduct research on emotional impact by eSports and, especially, how key concepts are presented and discussed.

We focused our attention particularly in the Abstract and Conclusion, aiming to identify, analyze and map the main concepts in research centered in emotional impact by eSports, to answer our question: What guidelines for future research and applications can be deduced from the main concepts found in applications and scientific articles published on the role of eSports in (gamers and spectators) emotions?

Table 1. Data collection and papers characteristics

Year of publication	*N.*	*%*
2017	1	5%
2018	2	10%
2019	2	10%
2020	7	35%
2021	7	35%
2022	1	5%
Total	**20**	**100%**

III. Results

A. Abstracts data

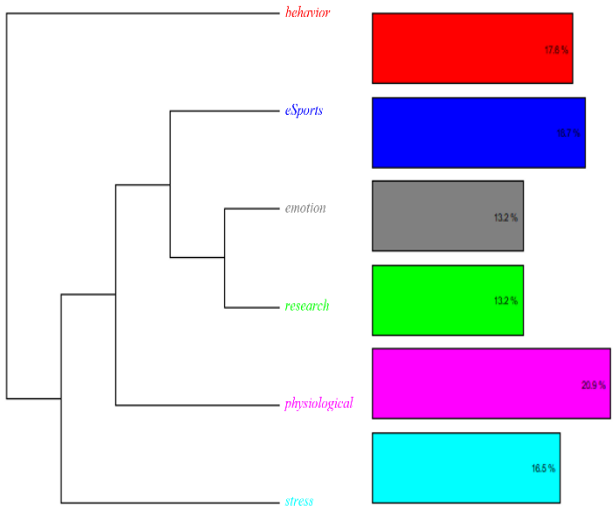

Figure 1. Abstracts - Iramuteq's Clusters

Through Iramuteq’s clusters (Figure 1) we can notice that the clusters are balanced between them.

The corpus was divided in two sub corpuses (1st division), separating cluster “behavior” from the rest. On a second moment, the larger sub corpus was divided, generating cluster “stress” (2nd division).

On a third moment, another division generated cluster “physiological” (3rd division) and, finally, on a fourth moment, cluster “eSports” was generated (4th division), leaving “emotion” and “research” clusters in the same sub corpuses.

The Descending Hierarchical Analysis (DHA) stopped here, due to the 6 clusters stability, as text segments units with similar vocabulary.

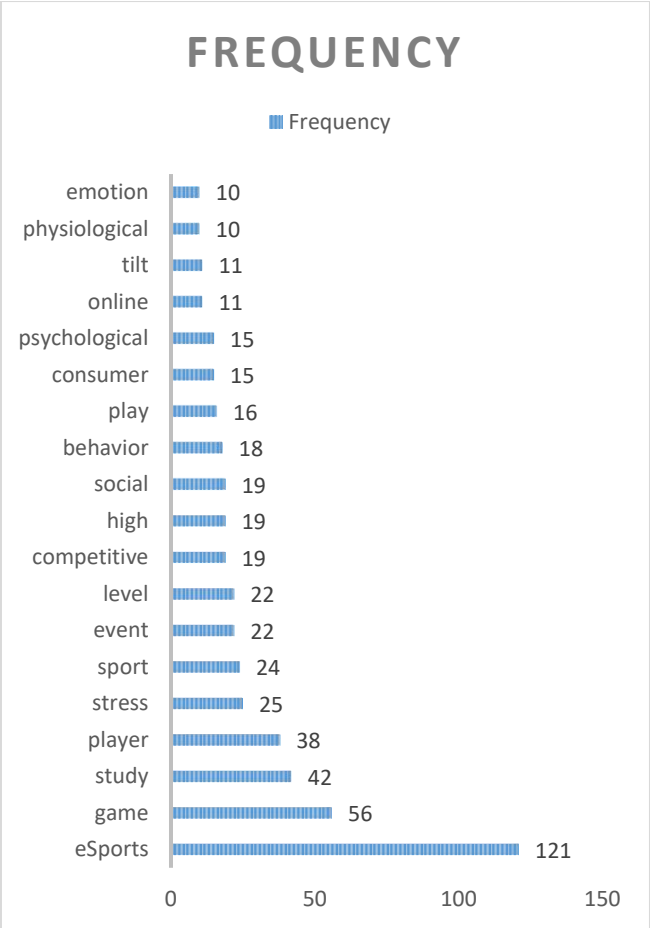

Figure 2. Abstracts - Iramuteq's Analyst Synopsis

Analyzing frequencies (Figure 2), the word that stands out is eSports, which makes sense once all papers are related to eSports research. We can also identify that "stress" is focused 25 times and words as "tilt" and "emotion" are referred at least 10 times each.

Figure 3. Abstracts - MonkeyLearn's word cloud

Adding the analysis of Monkey Learn's word cloud (Figure 3), the main word highlighted are "video game", "eSport" and "eSport player", followed by "stress" and "physiological state", which gives us an idea that these studies focus mainly on the stress as an impact of eSports consume.

We can also identify "competitive gaming", "negative ion environment" and "nervous system" which corroborates with the information extracted previously.

Crossing MonkeyLearn's and Iramuteq's information, we can conclude that physiological state, stress event and competitive play are some of the focus areas in the analyzed abstracts, when associated with videogames and eSports. There seems to be a great focus on the nervous system, associated with the stress caused by competition and what they can cause physiologically.

B. Conclusions data

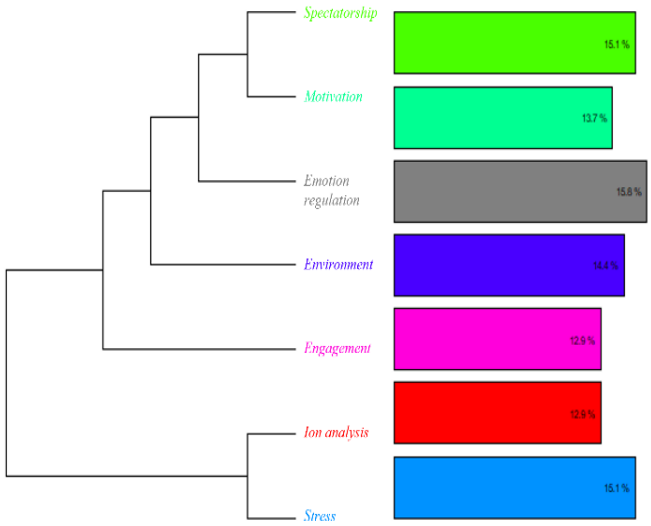

Figure 4. Conclusions - Iramuteq's Clusters

Analyzing Iramuteq's clusters (Figure 4) we can verify that the clusters are balanced as well. During Descending Hierarchical Analysis, the corpus was divided in two sub corpuses (1st division), separating 2 clusters, "Stress" and "Ion analysis" sub corpuses from the rest. On a second moment, the larger sub corpus was divided, generating cluster "engagement" (2nd division). On a third moment, another division generated cluster "environment" (3rd division) and finally, on a fourth moment, cluster "emotional regulation" was generated (4th division), leaving "motivation" and "spectatorship" clusters in the same sub corpuses.

Once again, the DHA stopped here, due to the 7 clusters stability, as text segments units with similar vocabulary.

Analyzing frequencies (Figure 5), the word that stands out is eSports, similarly to the abstracts analysis. We can also identify that "stress" is only focused 15 times in Conclusions, being more focused on abstracts. Also, "performance" was hit 34 times, being one of the main topics which tells us that performance is a really focused topic.

Additionally, there is some focus on environment, behavior and ion which gives a big highlight on the environment of the consumer.

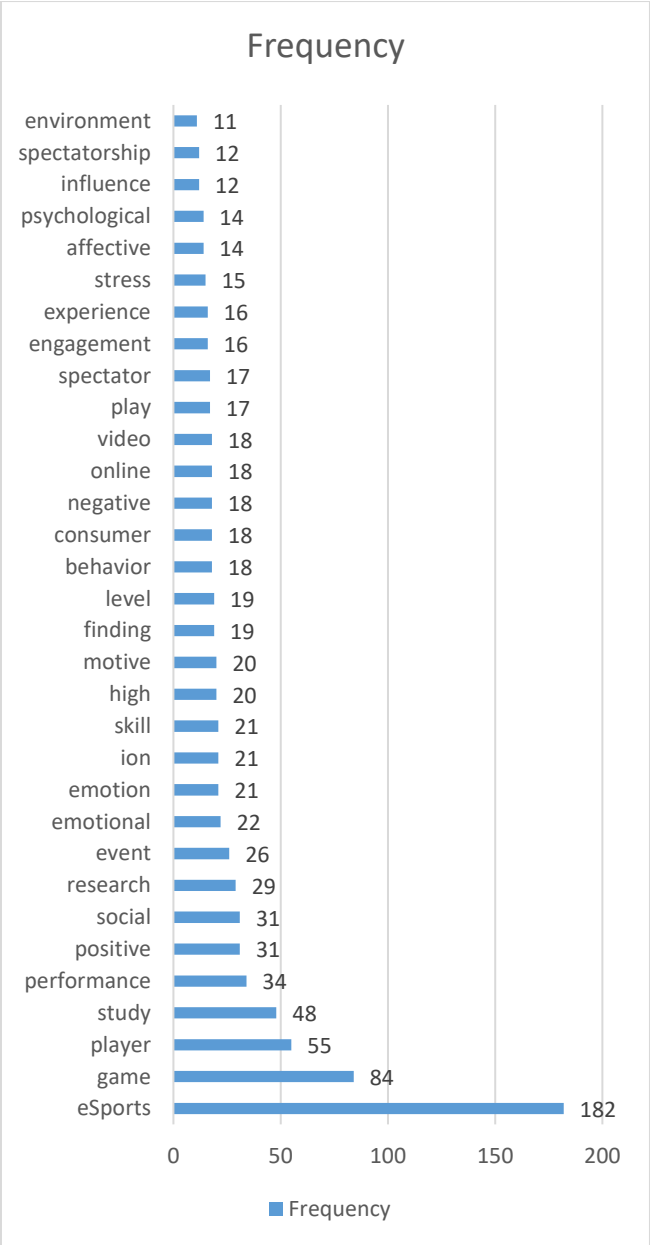

Figure 5. Conclusions - Iramuteq's Analyst Synopsis

Finally, there's more focus on "positive" than on "negative" word, so we can infer that the conclusions focus more on something positive - probably emotions once "emotion" and "emotional" are two big topics too.

Figure 6. Conclusions - MonkeyLearn's word cloud

Like Iramuteq's analysis (Figure 6), also Monkey Learn's word cloud focus on "eSports performance". Following there are "negative ion", "emotion", "emotional experience" and stress", which gives us the idea that the focus is emotions during eSports performance, having some "positive outcome", "positive health behavior" or even "better understanding".

With this idea, we can infer that through emotional experiences created by eSports consume, consumers can understand better their emotions and do some emotional regulation in time.

By crossing MonkeyLearn's and Iramuteq's information, we can conclude that the environment is something focused once that "ion" appears a lot, both on the negative side and on the positive side. Also, corroborating with Abstracts' analysis, a lot of attention is put on physiological stress, adding the psychological part too. Some expressions like "positive outcomes" can be associated with emotional regulation, where the players may regulate their emotions in a way that can extract good outcomes from it.

IV. Conclusions

With the results obtained it's becoming evident that people are starting to realize how to regulate their emotions and how eSports can affect consumers' emotions and stress.

From 2017 to 2022, there has been a growth on these studies, focusing on emotions, stress and emotion regulation. It's interesting to see that eSports practice not only can affect the consumers emotions but can also help them to know themselves better, and to be capable of regulate their emotions, not letting these emotions to affect their performance. This can be useful because this understanding may be applicable not only on eSports environment, but in any area of our life.

There's still a lot that can be investigated. It would be important to understand if emotion regulation has more effects on the specific type of game, or even if it depends on the personality of the consumers.

It would also be very interesting to analyze how emotions affect the game depending on the type of game - single or multiplayer.

Finally, it may also be interesting to analyze not only the effect of emotions on the way the game is played, but also the effect of the game on emotions and how it can snowball if there is no emotional regulation.

Acknowledgement

This work was carried out at ISTAR - Information Sciences and Technologies and Architecture Research Center of ISCTE - Instituto Universitário de Lisboa, Portugal, and was partially funded by the Foundation for Science and Technology (Project "FCT UIDB / 04466/2020").

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