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EXAMINATION OF DIFFERENCES IN PRE-COMPETITION ANXIETY AND BIG FIVE PERSONALITY TRAITS IN ESPORT PLAYERS AND ATHLETES

The primary aim of the paper is to conduct research on the personality traits and pre-competition anxiety of Esports and sports players, in addition to confirming differences in personality and pre-competition anxiety between the two examined groups. The research has been conducted on 67 (N=67) subjects, 30 of whom are semi-professional or professional gamers who participate in state-level and regional-level competitions. The remaining 37 subjects are the highest-ranked athletes in Bosnia and Herzegovina. The t-test, a type of inferential statistic, has been used to determine statistical differences in disposition between the arithmetic means of the two groups, using BFI-44 (α=0.78) and CSAI-2 (α=0.60) measuring instruments. It has been anticipated that the Esports players are ranked lower at Extraversion (E) and Agreeableness (A) levels, while their Neuroticism (N) level is higher compared to the results of the athletes. The research indicates that all of the three hypotheses regarding the Big Five Model have been confirmed – on the scale of Extraversion (E) with significance levels of $p=0.000$ ($p<0.0001$); on the scale of Agreeableness (A) with significance levels of $p=0.002$ ($p<0.01$); on the scale of Neuroticism (N) with significance levels of $p=0.042$ ($p<0.05$). Furthermore, the fourth and fifth research hypotheses, proposing there is a statistically significant difference in cognitive and somatic anxiety (CSAI-2) in Esports players and athletes, were not confirmed. The sixth research hypothesis was confirmed, showing that there is a statistically significant difference between Esports players and athletes on the self-confidence dimension (CSAI-2) with $p=0.030$ ($p<0.05$). Results gathered on this sample could serve as an important part of understanding the differences between Esports players and athletes.

Key words: big five model; Esport; sports; competition anxiety

1. INTRODUCTION

The availability and increased use of the Internet, the development and availability of technology, and primarily computers and computer equipment needed to play video games have enabled Esports to become a global sensation. The Esports market is an economically promising market and investors from all over the world are trying to direct part of their investments into the ever-growing trend of playing video games.

This industry is predicted to reach a value of 3.82 billion US dollars by 2027 (Marketwatch 2023). To put the viewership and popularity of Esports into perspective, we will just mention that the *League of Legends World Championship* 2019 finals attracted over 100 million viewers, while the LIII *American Super Bowl* finals attracted 100.7 million viewers (Roundhill Investments 2020). Although Esports is not systematically promoted through education in Bosnia and Herzegovina, in the USA there are competitions at every level of education, including elementary and high school levels, as well as at the college level.

In Bosnia and Herzegovina, there is a large number of young people who spend their free time playing video games, and a certain percentage of those who do it at a high level, enter the domain of Esports.

Esport is an electronic sport. This electronic sport is played mainly through computers, consoles, or even mobile devices, where players compete, individually or in teams of usually 2-10 people, with opponents sitting on the other side of the virtual world where everything takes place. The video games most associated with Esports are League of Legends, Dota 2, Overwatch, CS:GO, Paladins, Smite, Fortnite, PUBG, and Call of Duty (Esport Source 2021). Esports video games generally have a set of specific rules and require the development of muscle memory for many of the maneuvers to be performed within the game, all of which require years of hard training/play (Himmelstein et al. 2017). It is generally considered that the biggest difference between Esports and sports is physical activity. One of the arguments of the Esports industry is that if chess and poker can be classified as sports, then Esports might as well be (Esports mention 2019). Esports players also experience high pressure, players are expected to have flawless and impeccable fine motor skills, emotional stability, high vigilance, but also tenacity of attention, as well as a developed ability to quickly communicate and exchange information (Witkowski 2012).

In the world today, there is an initiative to give Esport the title of sports in the traditional sense of this term, and countries such as the USA, Finland, Germany, South

Korea, China, South Africa, Russia, Iceland, Denmark, and Ukraine have already recognized Esport as a sport. Esports has had a special category in the Asian Olympic Games for a few years, and will also be included in the upcoming Asian Games in 2022, with medals awarded in 8 video games, the Olympic Committee of Asia confirmed (Olympics 2021). Also, the League of Legends World Championship in 2022 set a new record in gaming, where at one point, at its peak, it gathered 5.1 million concurrent viewers (Dual Shockers 2022). All of this shows us that this is the right moment to study the differences between Esports/gamers and athletes, to have as much information as possible, and get to know the details related to the economically strong and upcoming industry.

1.1. Connecting psychology with sports and Esports

In terms of linking psychology to sports and Esports, participation and achievement in traditional sports correlate positively with extraversion. One study showed that only Conscientiousness can be a valid predictor of success in traditional sports (Mirzaei et al. 2020), while the other two studies showed that high levels of Conscientiousness and low levels of Neuroticism serve as predictors of sports achievement and participation in national or international competitions. The fact that Emotional stability is generally beneficial and necessary for player performance in sports as well as in non-sport activities such as poker can be exploited in the context of video games. Video game genres within Esports are also competitive, fast-paced, and intense -Emotional stability can therefore be crucial for reaching an optimal level of performance.

In a study by Matuzevsky et al. (2020), the relationship between (sports) performance in Esports and personality characteristics was examined. The focus of this study is on the highly popular Esports video game League of Legends. It was found that there is a relationship between personality characteristics according to the Big Five model (Extraversion, Agreeableness, Openness) and success or achievement in League of Legends. In traditional sports, Extraversion (Eagleton et al. 2007) and Agreeableness (Nia & Besharat 2010) positively correlate with top performance, so a similar outcome was expected in the domain of Esports. However, this was not the case, and it shows the difference between traditional sports and Esports. Namely, players who ranked lower had significantly higher levels of Extraversion and Agreeableness, and lower levels of Openness. The lower levels of Agreeableness and Extraversion associated with superior performance may be the result of success being

measured by individual performance. High-ranked players need to spend more time playing individually to improve their ranking.

Also, since this is a video game, the more time a person spends practicing their abilities and improving their rank, the less time they spend interacting with other people, especially in the physical world. Esports players experience negative consequences such as lack of sleep as well as less time for social activities, with many of them reporting less than 4 hours of sleep per day (Kocadag 2021).

Openness also differs between successful and highly ranked players and those who are not so successful (Matuszewski et al. 2020). The reason may be because League of Legends since it has over 140 champions (fictional characters) to choose from, requires flexibility and training more of those champions and adapting to the opponent as well as new game trends that change on a monthly basis.

No significant difference was found for Neuroticism and Conscientiousness, although a significant difference would probably have been found there too if the respondents were amateurs on the one hand, and professional players on the other (Matuszewski et al. 2020). Although psychology as such is applicable to every individual, we see that some models of ideal personality characteristics differ from traditional sports to Esports.

According to the genetic, or gravitation hypothesis, individuals who are basically extraverted and emotionally stable are inclined to sporting experiences. Only those who possess the highest level of extraversion and emotional stability remain at the top level, thus defeating all competition that is not fundamentally extraverted or emotionally stable (Cox 2005). In comparison, we could say that individuals also have predispositions for Esports, i.e. there is a hypothesis of gravitation toward Esports. This hypothesis would differ only on the Extraversion-Introversion dimension. Individuals who are fundamentally more introverted might be inclined towards video games and Esports experiences.

We could say that they do not essentially gravitate towards sports, but with the advent of information technologies, which as a means allow the individual to choose or limit the number of stimulations, enable the individual to participate in virtual competitions that today are slowly conquering the market and gaining the title of electronic sports. Also, just as those who do not possess the optimal level of emotional stability and extraversion fall out at the top level of sports, in the same way in Esports, at the top or professional level, individuals with the optimal level of emotional stability and introversion have a bigger chance of succeeding.

In order to put the aforementioned studies on Esports players and their relationship to athletes and video games into perspective, we will turn to athletes and mention the basic findings of the already numerous studies on the subject. Bajraktarević (2008: 12) concluded:

> "There are several attempts to make the similarities and differences in the personality structure of top athletes and non-athletes clear and precise. In addition to a large number of extreme views, the most acceptable ones are that playing sports is a specific activity that requires the expression of certain personality characteristics, which is why someone chooses sports in the first place or is chosen based on selection rules".

According to many studies, athletes who participate in team and individual sports are more independent, objective and less anxious than non-athletes, and are often more intelligent than average (Cox 2005). It is important to mention that this comparison was made in relation to non-athletes, and in this research, the comparison is made with Esports players.

Also, athletes are more confident, capable, and social than non-athletes and are basically extraverted and experience less anxiety, and therefore possess a higher level of emotional stability. Individuals who have a stable, extraverted personalities are inclined to sporting experiences. As the competition process unfolds, all but the most passionate competitors, those possessing the highest levels of extraversion and stability, fall away – the so-called sports Darwinism (Cox 2005). On the basis of personality, we cannot conclude which athlete is more inclined to a certain sport, but differences in the personalities of athletes of different sports categories can be observed – for example individual versus team sports.

According to some findings, athletes who play team sports are more extroverted and experience less anxiety, which may be related to the need and desire to cooperate and be surrounded by people, as well as to the fact that in team sports there is a diffusion of responsibility (Raharjo et al. 2018). Sports psychology literature often mentions factors of sports success, which can be highlighted in four periods:

The first period in which the most talented individuals win

The second period in which, in addition to talent, physical preparation also plays a crucial role

The third period in which, in addition to talent and physical preparation, good technical and tactical preparation is added

The fourth period in which, in addition to everything mentioned, psychological preparation prevails, crucial for achieving high results (Cox 2005).

Since sport is much more complex than Esports, we should emphasize that in Esports some of these factors do not play such a significant role, primarily physical and tactical preparation. Also, Esports sets a significantly lower threshold for success, where the amount of time an individual spends on the computer playing video games is crucial. In sports, in addition to talent, physical preparation must be present, due to the very nature of the sport, and often this physical preparation is a decisive factor. Any talent and technical/tactical or psychological preparation cannot help if the athlete does not have the physical predisposition to play sports at a high level.

1.2. Pre-competition anxiety in sports

Weinberg and Gould (1996; according to Radonjić 2016) define anxiety as a negative emotional state characterized by discomfort, nervousness, and worry, which is associated with general psychophysiological activation of the organism. This represents a state of the body ready to escape. Anxiety in the context of sports competitions is called competitive anxiety. When talking about anxiety, we should first make a distinction between trait anxiety and state anxiety. The trait of anxiety can be described as a predisposition, that is, a tendency to perceive certain stimuli from the environment as threatening, and by reacting to these stimuli in such a way that a person experiences a more intense state of anxiety, while a state of anxiety is a current emotional state characterized by fear, tension, increased excitement and concerns about the outcomes of the activity (Cox 2005). It is certain that the trait of anxiety is a hindering factor for athletes in general, and that the existence of this predisposition prevents athletes from achieving top results. Also, in individuals with a predisposition to anxiety, competitive activities can serve as a factor that induces significant stress. (Tanguy et al. 2018)

Anxiety has that irrational element of feeling threatened that lies in the individual, is oriented towards the future, and constantly occupies the mind as long as the stimulus for anxiety exists, and a person's subjective perception says that it is threatening to his personality and that it cannot be rejected so easily. It is mostly unconscious and promotes feelings of helplessness or maladjustment. (Bajraktarević 2008)

It is known that emotional stability and extraversion are the main characteristics of successful athletes when we talk about personality traits. A lack of emotional stability indicates that the individual experiences more anxiety and negative emotional states, which are disruptive factors for the athlete's performance. An individual who does not possess optimal levels of emotional stability is more likely, in addition to

experiencing more anxiety, to have a more negative self-image, among other things, lower levels of self-confidence (Velikić et al. 2014). In terms of traits, successful athletes show low levels of anxiety and neuroticism, and high levels of extraversion.

When we talk about states, they show lower levels of anxiety, depression, anger, fatigue, confusion, and high levels of determination (Cox 2005). The theory of attention control (Eysenck et al. 2007) says that the impact of anxiety on performance is manifested so that the athlete focuses his attention on less important information, and that he misses important, relevant information related to the task, thus putting himself in a position of poor performance. Focusing attention on internal or external distracting factors, while missing those essential for the performance of tasks, is one of the consequences of increased anxiety.

Connecting anxiety with the successful profile of an athlete tells us a lot about the undesirability of this trait, but also of the condition, which must be present in a certain dose, with which a successful athlete copes more easily than an average athlete or an average person. Anxiety has been confirmed in many studies as a disruptive factor in sports performance (Woodman & Hardy 2003). Psychological readiness represents the top of a pyramid as a factor that separates top athletes from those who are not. Although talent, physical preparation, and technical and tactical preparation play an important role, psychological preparation is a key factor (Pajević 2003).

Pre-competitive anxiety in research is most often operationalized through cognitive and somatic components. The cognitive state of anxiety is a mental component, and it includes experiences such as fear of negative social evaluation, fear of failure, and loss of self-esteem. The somatic state of anxiety is a physical component, and it combines the perception of a large number of physiological reactions of the body such as rapid heart rate and rapid breathing, nausea, wet palms, stomach upset or indigestion, or muscle tension (Cox 2005). The intensity of these stimuli depends on the time distance from the competition, where the reactions are more intense the more immediate the competition.

One of the most famous instruments for measuring pre-competition anxiety, which was used in this research, is Competitive State Anxiety Inventory-2 (CSAI-2) or State Anxiety Questionnaire during the competition (Martens et al. 1990). In addition to the mentioned dimensions of cognitive and somatic anxiety, the athlete's self-confidence is also measured, which is defined as an assessment of one's own abilities related to success in performing various tasks.

Some research shows a positive association between somatic and cognitive anxiety and their negative association with self-confidence (Škulić 2018). Athletes who felt

more cognitive and somatic anxiety were also less self-confident. Also, Esports players who actively compete, experience more cognitive anxiety than Esports players who do not participate in major competitions (Mendoza et al. 2021).

Research comparing individual and collective sports do not show unequivocal results. In his research on 39 team and 30 individual athletes between the ages of 18 and 23, Zeng (2003) obtained results that indicate higher levels of anxiety and lower levels of self-confidence in athletes who play collective, team sports. The research conducted by Mladenović (2019) showed that individual athletes (elite shooters) experienced higher levels of cognitive anxiety compared to handball players. Also, individual athletes showed higher levels of anxiety and depression compared to athletes participating in team sports (Pluhar et al. 2019). Another study confirms that individual athletes experience higher levels of cognitive and somatic anxiety compared to team sports athletes (Sultani et al. 2016).

On the other hand, Esports experience less anxiety as their self-efficacy is higher (Wang et al. 2022). Some studies that compared esports players and athletes on measures of anxiety, stress, and depression did not find a statistically significant difference (Singh et al. 2022), nor did they find a connection between Esports and anxiety, while they obtained results indicating that playing Esports reduces subjective psychological well-being of participants (Arya et al. 2022). It is often mentioned that playing video games is harmful and that spending too much time on the computer has negative physical and psychological consequences. Palanichamy et al. (2020) have confirmed that long-term Esports leads to physical consequences such as eye damage in terms of blurred vision, increased dioptry and eye fatigue, lower back pain, headache, hand and joint pain, and bad posture. Among the psychological consequences, the most significant are increased levels of anxiety, depression, apathy, tendency to be uncooperative, sleep disturbance, aggressive behavior, distress in social life, and emotional difficulties.

Bearing in mind the many findings of various research, we considered it justified and necessary to examine the ways in which esports players and athletes experience anxiety, primarily in competitive activities.

2. METHOD

The research is empirical, quantitative type, in which the method of surveying Esports players and athletes who are actively involved in sports, at the highest level in Bosnia and Herzegovina, was used. Basic statistics, the T-test, were used to examine

differences in personality, through which statistical significance was tested between two arithmetic means.

2.1. Sample

The sample of this research is represented by respondents collected in different ways, through the organization "Tiltproof.gg", the Esports Association of Bosnia and Herzegovina, and through contact with the Futsal Club "Mostar SG Staklorad", RK Vogošća, OKK Sloboda and FK Velež. 67 respondents were collected, of which 30 are those categorized as Esports players, who compete semi-professionally or professionally at the state or regional level, (N=30), and 37 athletes who play football, basketball and handball at the highest level in Bosnia and Herzegovina (N=37). The average age of the respondents is 23 years and 4 months, and the age ranges from 17 years to 36 years. When we look at the athletes age parameters, we can point out M=25.90 (SD=5.32), with the minimum age being 17 and maximum 36. Esports players' age parameters are M=20.53 (SD=3.20), with the minimum age being 17 and maximum 26.

Data for athletes was collected in October 2021, during an active season, in between competitive matches (BH Futsal League – Futsal Club „Mostar SG Staklorad“, BH Premier League – RK Vogošća, BH Division I – OKK Sloboda, and BH Premier League – FK Velež). On the other hand, data for Esports players was collected in May 2021, during the A1 Adria League Season 7 (CS:GO and League of Legends) and Esport Adria Championship Season 5 (CS:GO) competitions, randomly in the pool of Esports players.

2.2. Measuring instruments

The measuring instruments that were used for the purpose of the research, in order to collect the appropriate data for analysis were the following:

Questionnaire for collecting data on sociodemographic characteristics, which was constructed for the purposes of this research, and which contains questions about characteristics such as gender, age, the country in which they live, with whom they live, place of residence, number of household members, level of monthly income in the family, per family member, the respondent's level of education as well as the education level of their parents, whether are currently playing sports, which sport is it, the time they have been actively playing sports, how long they have been competing, whether they have achieved any notable results (entity, national, regional,

international), whether they play League of Legends, how long they have been playing League of Legends, what is their average rank in the past year, and how much they earned from playing. The same questions were asked, but only in place of "League of Legends" is another game, namely "CS: GO". In the end, they were asked which they consider their primary game, since many of them play both, and it is important to separate professional from recreational gaming.

Big Five personality inventory – The BFI personality inventory is an instrument that enables the (self) assessment of five basic personality dimensions: Extraversion (E), Agreeableness (A), Conscientiousness (C), Neuroticism (N), and Openness (O). The inventory contains 44 items obtained by factor analysis on a large number of respondents. The particles within the BFI are conceived in the form of short sentences based on the already mentioned, prototypic markers of the Big Five, presented by John (1990). Evaluation is done on a Likert-type scale, i.e. from 1 to 5, and each of the selected values expresses the degree of agreement or disagreement with a certain statement, ranging from "completely disagree" (1) to "completely agree" (5), in such a way that the respondent writes/circles the degree of agreement with that statement (Larsen & Buss 2008). The measured reliability was α=0.78.

Competitive State Anxiety Inventory-2 (CSAI-2) – developed by Martens et al. (1990) consists of 27 items that assess the intensity of cognitive anxiety, somatic anxiety, and self-confidence in sports. The CSAI-2 is a 27-question questionnaire that measures the level of competitive anxiety through three measuring subscales: the cognitive anxiety scale, the somatic anxiety scale, and the self-confidence scale. The CSAI-2 is scored separately for each of the three subscales, ranging from 9 to 36. A higher score means higher cognitive and somatic anxiety, as well as a higher level of self-confidence. For scoring, one of the 4 offered answers was used: (1) not at all, (2) sometimes, (3) moderately, (4) very much. The cognitive anxiety scale was given based on the answers to questions: 1, 4, 7, 10, 13, 16, 19, 22, and 25, and the somatic anxiety scale was scored on the answers to questions: 2, 5, 8, 11, 14, 17, 20, 23 and 26. The scoring was reversed for question number 14. The answers to the other questions were used to score the self-confidence scale. Alpha Chronbach coefficient was measured at α=0.60

2.3. Research method

The following methods were used in this research:

Statistical method was used to collect, select and determine statistical data, classification, and data processing and analysis with tabular presentation of the same.

The method of analysis was used, which represents the process of scientific research and explanation of reality by breaking down complex thought creations (concepts, judgments and conclusions) into their simpler constituent parts and elements, and studying each part (and element) by itself and in relation to other parts, i.e. the whole.

Survey research method was also used through the Google Forms online survey platform. It represents an empirical, non-experimental method that is used to examine different forms of thinking and behavior in accordance with research needs (Čolakhodžić 2021).

The research is of a quantitative type, and appropriate statistical procedures, such as T-test analysis, were used.

3. RESEARCH OBJECTIVES

The goals of this work were (1) to gain insight into the personality characteristics of Esports players and athletes and (2) to determine differences in the dimensions of Extraversion (E), Neuroticism (N), and Agreeableness (A) between Esports players and athletes, and to determine differences in pre-competition anxiety between Esports and athletes.

4. RESEARCH PROBLEMS

To examine the personality characteristics of Esports players and athletes and to determine the differences on the Extraversion-Introversion (E-I) dimension.

According to the examined personality characteristics, investigate whether athletes and Esports players differ on the dimension of Neuroticism (N).

To determine whether athletes differ from Esports on the dimension of Agreeableness (A).

To examine whether Esports players and athletes differ in their experience of Cognitive anxiety.

To examine whether Esports players and athletes differ in their experience of Somatic anxiety.

To examine whether Esports players and athletes differ in Self-confidence.

5. RESEARCH HYPOTHESES

H1. We assume that Esports players are, on average, lower on the scale of Extraversion (E), compared to athletes.

H2. Due to the very nature of computers and the impact of information technology on mental health and stability, we assume that athletes are lower on the Neuroticism (N) scale than Esports.

H3. Previously mentioned studies by other authors showed a lower-than-average level of Agreeableness (A) among Esports players/gamers, and therefore we make the assumption that athletes are higher on the Agreeableness (A) scale than Esports players.

H4. Considering the lack of literature in the field of Esports and pre-competition anxiety, and bearing in mind the assumptions and findings about the personality characteristics of Esports players and athletes, it is assumed that Esports players achieve higher results on the cognitive anxiety measure.

H5. In accordance with the above, it is assumed that Esport players achieve higher results on the measure of somatic anxiety.

H6. Having some insight into the differences in personality characteristics between Esports players and athletes, and the implications of those results in the domain of self-confidence, it is assumed that athletes show higher levels of self-confidence compared to Esports players.

6. RESULTS

The obtained result in analyzing the first hypothesis shows that the difference is statistically significant ($t(65)=4.09$, $p<.0001$) and that the first hypothesis is confirmed (Table 1). According to the results, athletes and Esports differ significantly on the dimension of Extraversion (E), which was also confirmed in one research (Behnke et al. 2023). The assumption at the core of this hypothesis was that Esports players are more introverted and are inclined towards gaming and Esports, i.e. that athletes are on average more extraverted, and that people who are more extroverted are inclined towards certain sports.

Table 1. Differences in Extraversion (E) between Esports players and athletes.

	Group	N	M		t	df	Sig. (2-tailed)
Extraversion total score.	Athlete	40	28.40	Equal variances asummed	4.091	65	.000
	Esport player	27	23.85	Equal variances not assumed	4.033	53.16	.000

After processing the data, it was shown that in the second hypothesis, athletes were on average lower on the Neuroticism scale (N) than the Esports players, and this difference is also statistically significant ($t(65)=-2.07$, $p<.05$) (Table 2). Therefore, the second hypothesis was also confirmed – in this sample, athletes show lower levels of Neuroticism (N) than Esports players.

Table 2. Differences in Neuroticism (N) between Esports players and athletes.

	Group	N	M		t	df	Sig. (2-tailed)
Neuroticism total score.	Athlete	40	18.75	Equal variances assumed	-2.074	65	.042
	Esport player	27	21.11	Equal variances not assumed	-2.118	59.81	.038

Data analysis revealed that the difference in the third hypothesis is statistically significant ($t(65)=3.30$, $p<.01$), which confirms the third hypothesis (Table 3). Athletes score higher on the Agreeableness (A) dimension, which may not mean that Esports athletes in this sample had a lower than average level of cooperation, but that compared to athletes, they have a significantly lower level. Palanichamy et al. (2020) recorded similar results.

Table 3. Differences in Agreeableness (A) between Esports players and athletes.

	Group	N	M		t	df	Sig. (2-tailed)
Agreeableness total score.	Athlete	40	33.40	Equal variances assumed	3.301	65	.002
	Esport player	27	29.59	Equal variances not assumed	3.187	49.04	.002

The obtained data does not confirm the fourth hypothesis, and therefore we reject it. There is no statistically significant difference in the measure of cognitive anxiety between Esports and athletes ($t(65)=-1.23$, $p>.05$) (Table 4).

Table 4. Differences in Cognitive Anxiety between Esports players and athletes.

	Group	N	M		t	df	Sig. (2-tailed)
CSAI-2 Cognitive anxiety	Athlete	40	18.77	Equal variances assumed	-1.233	65	.222
	Esport player	27	20.51	Equal variances not assumed	-1.231	55.60	.223

Analyzing the fifth hypothesis, data analysis revealed no statistically significant difference between Esports and athletes in terms of somatic anxiety ($t(65)=-1.37$, $p>.05$) (Table 5).

Table 5. Differences in Somatic Anxiety between Esports players and athletes.

	Group	N	M		t	df	Sig. (2-tailed)
CSAI-2 Somatic anxiety	Athlete	40	19.42	Equal variances assumed	-1.379	65	.173
	Esport player	27	20.92	Equal variances not assumed	-1.436	62.74	.156

The data we obtained by analyzing the measure of self-confidence in pre-competition anxiety, confirm the sixth hypothesis (Table 6), i.e. show that there is a statistically significant difference between Esports players and athletes in terms of self-confidence ($t(65)=2.22$, $p<.05$).

Table 6. Differences in Self-confidence between Esports players and athletes.

	Group	N	M		t	df	Sig. (2-tailed)
CSAI-2 Somatic anxiety	Athlete	40	19.42	Equal variances assumed	-1.379	65	.173
	Esport player	27	20.92	Equal variances not assumed	-1.436	62.74	.156

7. DISCUSSION

The main goal of the research was to investigate the differences in pre-competition anxiety and personality characteristics in Esports players and athletes, in order to gain insight into today's rarely researched topic, and for the purpose of better knowing the population of Esports players, since there is already a large number of research carried out on athletes. Results presented in this research cannot be backed by numerous other research because the research field itself is not exercised enough, at this point. What we can say is that in this research, and another one (Behnke et al. 2023) athletes have shown a higher level of Extraversion, which was expected considering the fact that athletes are in general showing higher levels of Extraversion than average people, and that gamers are showing higher levels of Introversion than average people (Cox 2005; Landers and Lounsbury 2006; Müller et al. 2014; Beate et al. 2016; Carlisle et al. 2019). Above-average use of the internet was associated with higher levels of Neuroticism (Amichai-Hamburger et al. 2004; Mehroof & Griffiths 2010) which was then tested in this sample comparing athletes and Esports players. We could see that athletes in this sample show lower levels of Neuroticism. It was already mentioned that Esport players show lower levels of Agreeableness (Matuzevsky et al. 2020), which was also tested in this sample, where athletes showed statistically significant higher levels of Agreeableness, thus confirming those findings on this specific sample as well. Esports is slowly taking over the market and becoming a dominant trend in the world, and one of the goals was also to start and contribute to scientific knowledge and perhaps indicate the necessity of researching this trend, especially in our area.

Since Esports slowly attains the title of sports, it is very possible that in the next few years, we will reach a point where the theoretical assumptions in the field of sports psychology will have to be adapted and modified in such a way that either the existing knowledge related to sports is renamed to knowledge related to traditional sports, or that these findings are modified in order to include in their theoretical assumptions the personality profiles of Esport players, who would then also be athletes.

With this research, we have confirmed the assumptions from which we started, namely that athletes show statistically significantly higher levels of Extraversion (E) and Agreeableness (A), and significantly lower levels of Neuroticism (N). Behnke et al. (2023) have also confirmed higher levels of Extraversion in athletes compared to Esports players. Just as there is a hypothesis of gravitating toward sports, so in recent times there is a gravitation of young people towards Esports, where the main

difference is on the Extraversion-Introversion dimension, and research has shown that Esports players are truly more introverted.

Also, athletes usually show lower levels of Neuroticism (N) than the average man in accordance with theoretical findings from various research in the field of sports psychology (Cox 2005), while Esports players show higher levels of Neuroticism (N) than the average population (Landers and Lounsbury 2006, Müller et al. 2014, Beate et al. 2016; Carlisle et al. 2019).

Earlier research did not make a comparison between Esports players and athletes, but individual research shows that Esports players are generally lower on the dimensions of Extraversion (E) and Agreeableness (A), but also lower than average on the dimension of Neuroticism (N), but since in this the research compared with athletes, it was to be expected that athletes show higher levels of emotional stability, as well as significantly higher levels of Extraversion (E) and Agreeableness (A), established according to the already numerous literature and research in the field of sports psychology, which is also confirmed in this research.

According to Arnold et al. (2017), athletes experience different stressors, some of which are competitive (related to performance and competition in general), personal (stressors from everyday life), and organizational (related to the organization in which they act as athletes, the culture of the organization and the team aspect). Pre-competition anxiety has been frequently researched and the aforementioned characteristics such as positive reactions to stressors, as well as a lack of negative reactions to them, usually improve the performance of athletes (Fletcher & Sarkar 2012). Mendoza et al. (2021) showed that top esports athletes experience more cognitive anxiety, as a result of the perception of the high importance of the upcoming competition. CS:GO players require more developed perceptual-motor abilities, while League of Legends players require a better knowledge of the video game, from the finer details and characteristics of the characters they use in-game, to perceptual-motor abilities that are not at the level of CS:GO players, but are essential for their performance (Bonny et al., 2016). Their stressors are similar, but due to the different demands of video games, they can vary. A bad start in CS:GO can be overcome by psychological preparation since esports players can overcome a crisis and disadvantage during a match at any time with extraordinary abilities, while League of Legends players can be greatly limited in terms of the outcome of the match by a bad start.

In this sample, we saw that there is no statistically significant difference in terms of somatic and cognitive anxiety between Esports players and athletes since each of

them views the upcoming competition as important from their own point of view. A statistically significant difference in self-confidence may be related to some other variables. In general, athletes have a more positive physical, emotional, and social self (Ivanišević & Šunje 2022), which may be related to higher self-confidence.

It is important to adapt and apply everything that can be applied in the field of psychology to Esports as well. Thus, in this paper, we analyzed the differences in pre-competition anxiety and personality characteristics in athletes and Esports players, since today we have, on the one hand, sports as we have always known them, and on the other hand, electronic sports, which are slowly gaining the title of sports as well. In recent literature, sport is now called traditional sport to make a distinction between sport and electronic sport (Funk et al. 2018; Pizzo et al. 2018; Schmidt & Shreffler 2015; Lee & Schoenstedt 2011). How justified it is to call sports traditional sports can be debated.

However, psychology must follow contemporary trends and study them closely from the psychological aspect, taking into account the sociological aspects of them, in order to be able to collect information, analyze it and then predict further development, or its psychological consequences. Results presented in this research show that athletes show higher levels of Extraversion (E) and Agreeableness (A), while showing lower levels of Neuroticism (N). For now, it is difficult to decide on a specific position on this issue, but what can be done is to carry out as much research as possible on this topic, as Esports are slowly taking over the market, and seducing children and young people from an early age to engage in Esports rather than in sports. That trend will only progress, taking into account the development of the IT industry and the general technologization of all aspects of human life.

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ISTRAŽIVANJE PREDTAKMIČARSKE ANKSIOZNOSTI I RAZLIKA U PET TEMELJNIH DIMENZIJA LIČNOSTI IZMEĐU ESPORTAŠA/GAMERA I SPORTAŠA

Sažetak:

Cilj istraživanja je ispitivanje osobina ličnosti i predtakmičarska anksioznosti Esportaša i sportaša, kao i utvrđivanje razlika u ličnosti i predtakmičarskoj anksioznosti između dvije ispitivane grupe. Istraživanje je provedeno na 67 (N=67) ispitanika od kojih su 30 poluprofesionalni ili profesionalni Esportaši koji učestvuju u takmičenjima na državnom i regionalnom nivou. Preostalih 37 ispitanika su najviše rangirani sportisti u Bosni i Hercegovini. Za ispitivanje razlika korištena je osnovna statistika, T-test, putem kojeg se testirala statistička značajnost između dvije aritmetičke sredine, na BFI-44 (α=0.78) i CSAI-2 (α=0.60) mjernim instrumentima. Očekivalo se da su Esportaši niže rangirani na dimenzijama Ekstraverzije (E) i Ugodnosti (A), a viši na dimenziji Neuroticizma (N) u odnosu na rezultate sportaša. Istraživanje pokazuje da su sve tri hipoteze u vezi sa Big Five modelom potvrđene – na dimenziji Ekstraverzije (E) sa nivoima značajnosti p=0.000 (p<0.0001); na dimenziji Ugodnosti (A) sa nivoima značajnosti p=0.002 (p<0.01); na dimenziji Neuroticizma (N) sa nivoima značajnosti p=0.042 (p<0.05). Nadalje, četvrta i peta hipoteza istraživanja, koje sugerišu da postoji statistički značajna razlika u kognitivnoj i somatskoj anksioznosti (CSAI-2) između Esportaša i sportaša, nisu potvrđene. Potvrđena je šesta hipoteza istraživanja koja pokazuje da postoji statistički značajna razlika između Esportaša i sportaša na dimenziji samopouzdanja (CSAI-2) sa p=0.030 (p<0.05). Rezultati postignuti na ovom uzorku mogli bi poslužiti kao važan dio razumijevanja razlika između Esportaša i sportaša.

Ključne riječi: big five model; Esport; sport; predtakmičarska anskioznost

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