



Supporting player wellbeing and building sustainable career pathways in esports

Hee Jung Hong^{*}, Guy Wilkinson

Faculty of Health Sciences and Sport, University of Stirling, Stirling, Scotland, UK

ARTICLE INFO

Keywords:

Esports industry
Esports players' holistic wellbeing
Duty of care in esports
Support systems

ABSTRACT

This exploratory study seeks to identify challenges, barriers, and holistic wellbeing needs of esports players during and after their careers, based on the human wellbeing framework, which includes physical, psychological, cultural, social, economic, and governance domains. By providing empirical evidence on critical areas, the study encourages the esports industry and its stakeholders to prioritise players' wellbeing, thereby building sustainable career pathways in esports. By employing an exploratory sequential mixed methods design, the study was conducted in three phases: (a) qualitative data collection and analysis through two focus groups ($n = 5$ and $n = 3$, respectively) and one semi-structured interview; (b) development of a new questionnaire based on the findings from Phase 1 and grounded in the chosen theoretical framework; and (c) administration of the developed questionnaire, which gathered quantitative data from 393 esports players across all competitive levels ($n = 393$). The findings highlight specific challenges, barriers, and needs related to the six domains of human wellbeing, offering significant insights from esports players on holistic wellbeing for esports players. Importantly, the findings revealed significant differences in participants' experiences of esports based on gender and career level. As a result, this study contributes to both theory and practice by deepening our knowledge and understanding of esports players' holistic wellbeing needs, which in turn supports the sustainability of esports careers. The implications can shape the path for sustainable growth within the industry by focusing on the wellbeing of esports players, providing practical guidance for industry and stakeholder decision making.

Esports is shifting from its recreational roots to a structured, professionalised field with a growing population of highly competitive players (Seo, 2016; Taylor, 2012; Williams et al., 2025). Esports also represents a novel sociocultural development resulting from the intersection of gaming communities, media infrastructures, traditional sport-based structures, economic investment, and regulatory bodies (Jin, 2010; Scholz, 2020). Thus, esports players are expected to demonstrate proficiency in gameplay alongside interpersonal, branding, and business skills (Johnson & Woodcock, 2021). In particular, a strong drive for skill development is a defining feature of professional esports players (Seo, 2016; Taylor, 2012), which plays a central role in how they construct and maintain their identity as professional players (Seo, 2016). However, this is not limited only to professional esports players alone but also extends to individuals at other levels and to those in roles beyond playing within the industry. Accordingly, Seo and Jung (2016) describe esports as a socially embedded activity, where consumption occurs through the participation of different individuals who assume roles such as players, viewers, and coordinators within the sports ecosystem.

Given the focus of this study, wellbeing, Hong (2023) examines the responsibilities and contributions of esports stakeholders in promoting the health and wellbeing of esports players at all levels. They highlight the need for a holistic development module for esports players, which emphasises player, centred support and collective stakeholder engagement. The same author further investigates insights from key stakeholders in the esports industry regarding the wellbeing and career pathways of esports players (Hong, 2025). Their findings demonstrate that physical and psychological readiness, communication, financial skills, and career planning are critical to esports players' wellbeing and long-term career prospects. The focus of their studies on key stakeholders in the esports industry is particularly valuable, given that the substantial growth of esports has redefined professional practices, introduced new participation pathways, and created opportunities for diverse stakeholders to benefit from evolving economic structures and emerging roles (Johnson & Woodcock, 2021). However, while their studies acknowledge the significance of supporting esports players' wellbeing and identifying needs, the findings are based on the

^{*} Corresponding author at: Faculty of Health Sciences and Sport, University of Stirling, Stirling, Scotland, FK9 4LA, UK.
E-mail address: heejung.hong@stir.ac.uk (H.J. Hong).

perspectives of key stakeholders rather than the esports players themselves.

The significance of wellbeing has been widely recognised not only within academic research but also across a range of professional fields. However, within the emerging field of esports, studies with a specific focus on wellbeing remains limited, although interest in this area is gradually increasing. This may be due to the relatively limited number of academics specialising in esports, and the scholarly understanding of such emerging topics in esports remains at an early stage. In particular, there is a lack of research that adopts a multidimensional approach to understanding the wellbeing of esports players. Given that sustained wellbeing is considered critical for their long-term performance and career development (Hong, 2023; Hong, 2025), this represents both a timely and necessary area for further investigation. This study therefore aims to explore the challenges esports players in maintaining their wellbeing, and to identify their specific support needs within this context. Accordingly, the research questions to guide the direction of the study are as follows: (a) what specific challenges barriers do esports players experience across multiple dimensions?; (b) what are the specific needs of esports players in addressing these challenges and barriers?; and (c) what implications do these findings have for the esports industry in developing strategies to support esports players' holistic wellbeing?

In the following sections, starting with the background and context of the study, this paper not only explores the concept of wellbeing within the context of esports but also examines it more broadly to highlight the significance of the research topic and address a gap in the existing literature. A theoretical framework is introduced within the literature review to demonstrate how the study is grounded conceptually. The paper then outlines the methodological approach, which employs an exploratory sequential mixed-methods design, and provides details on the procedures used throughout the research process. The results are subsequently presented, followed by a discussion that considers the implications and limitations of the study, and provides directions for future research.

1. Literature review

1.1. Background and context

Young players, particularly those striving for a professional path, may struggle with challenges that influence both their career development and holistic wellbeing (Hong, 2025). As many esports players are in adolescence or early adulthood, they are likely to be in a critical period of development both physically and mentally. During this period, mental health challenges such as poor wellbeing may have a direct impact on their physical health (Hoyt et al., 2012). Thus, wellbeing has become an increasingly important area of study across disciplines, highlighting its significance in society. In this context, physical and mental health are recognised key components of human wellbeing. Physical health is defined as “a dynamic state, the process of preserving and developing its biological, physiological and mental functions, optimal work capacity and social activity with the maximum life expectancy” (Koipysheva et al., 2018, p. 603). Mental health is defined as “a state of mental wellbeing that enables people to cope with the stresses of life, realize their abilities, learn well and work well, and contribute to their community. It is an integral component of health and wellbeing that underpins our individual and collective abilities to make decisions, build relationships and shape the world we live in” (World Health Organization, 2025, para 1). Based on these definitions, this study adopts the terms physical and mental wellbeing instead of health. By highlighting the crucial role of wellbeing in contributing to a fulfilling life, encourage social engagement, enhance productivity, and ensure long-term growth.

Engaging in esports comes with a range of benefits and opportunities, particularly in the development of life skills including communication

skills, teamwork dynamics, digital competence, analytical insight, and structured decision-making (Gee, 2008; Hsu & Wang, 2010; Tang, 2018; Zimmerman, 2008). In particular, during their competitive careers, professional esports players develop a range of advanced skills and personal attributes, which include a high level of technical proficiency, a commitment to ongoing self-development, a strong sense of responsibility, and the discipline required to sustain long-term engagement with their profession (Seo, 2016). In addition, their ability to complete at the highest level enables them to pursue esports as a recognised career pathway (Huston et al., 2022).

While a significant portion of esports research has largely concentrated on the experiences of professional players, research have also shown interest in esports participants at other levels, including casual and recreational players. Reflecting this understanding, Huston et al. (2022) conducted interviews with 17 individuals who, while not competing at the professional level, actively participated in esports in order to examine the pathways through which they engage with the esports. They found that esports participants and audiences engage in multiple ways, including skill development, immersion in competitive narratives, and social or entertainment-driven interaction. Findings from such study that examines how a diverse range of individuals, not limited to professional players, engage with esports may offer valuable insights for other research. For instance, this includes investigation into the motivation underpinning sustained participation and the potential contributions of esports involvement to overall wellbeing.

1.2. Wellbeing

Wellbeing is regarded as subjective because individuals are expected to assess, in broad terms, the extent to which they feel a sense of wellness. Subjective wellbeing is often described as “experience[ing] a high level of positive affect, a low level of negative affect, and a high degree of satisfaction with one's life” (Deci & Ryan, 2008, p.1). It has been widely used as a parallel term for *happiness*, leading to the notion that enhancing wellbeing is closely associated with contributing to a greater sense of happiness (Deci & Ryan, 2008). According to Deci and Ryan, ever since Kahneman (1999) published *wellbeing: The Foundation of Hedonic Psychology*, subjective wellbeing has been linked to the hedonic perspective on wellbeing. In this context, the concept of wellbeing has traditionally been understood through two contrasting perspectives: the hedonic perspective, which emphasises seeking pleasure and avoiding discomfort, and the eudaimonic perspective, which centres on leading a meaningful life and achieving self-fulfilment (Ryan & Deci, 2001). The hedonic perspective, which centres on identifying what makes life good by focusing on specific goals, contrasts with the eudaimonic perspective, which highlights both the content of one's life and the pathways to a meaningful existence (Ryan et al., 2008).

The hedonic perspective conceptualises wellbeing as the dominance of positive emotional states over negative ones, which positions happiness as a function of affective balance (Kahneman, 1999). Thus, the hedonic view centres on wellbeing as the presence of presence of positive emotions and the elimination of negative experiences. Such perspective has been applied to the esports context, where researchers have examined sport players' hedonic motivation (Ryan et al., 2008). For instance, Jo and Shin (2024) examined viewer behaviour related to esports spectating and found that hedonic motivation has a significant association with individuals' attitudes towards esports and their engagement with esports within the metaverse. Drawing from Aristotle's philosophical principles, the eudaimonic approach focuses on leading a meaningful life and achieving one's potential, conceptualising wellbeing based on the degree to which an individual function optimally (Ryan & Deci, 2001; Ryan & Huta, 2009). Ryan and Deci (2001) conceptualised eudaimonic wellbeing in association with Self-Determination Theory, a psychological framework that focuses on human motivation and personality dynamics. In this respect, Ryan et al. (2008) characterised eudaimonia as a way of living well, defined by key

attributes such as striving for intrinsic goals, acting with autonomy, practising mindfulness, and fulfilling basic psychological needs, including autonomy, competence, and relatedness. As such, for individuals to achieve optimal wellbeing, they need to meet the basic psychological needs of autonomy (the experience of self-direction and choice), competence (the feeling of effectiveness and mastery), and relatedness (the sense of meaningful social connection; Kouali et al., 2020). In this respect, the present study applies the concept of eudaimonic wellbeing as it clearly highlights the significance of esports players developing career and life skills through esports while fulfilling psychological needs, thereby promoting holistic wellbeing and encouraging sustainable career pathways.

1.3. Wellbeing in esports

With the continuous expansion of esports research, there has been a growing body of studies dedicated to investigating players' physical and mental wellbeing (Birch et al., 2024; Hong, 2023, 2025; Leis et al., 2024; Monteiro Pereira et al., 2022; Monteiro Pereira et al., 2023). The demands of intensive training and competitions in esports have been linked to heightened stress, mental health challenges, and impaired decision-making, emphasising the urgent need for stronger social and emotional support mechanisms within the esports sector (DiFrancisco-Donoghue et al., 2019; Wattanapisit et al., 2020). In their examination of the prevalence of mental ill health and mental wellbeing of professional esports players, Birch et al. (2024) also highlighted that more emphasis should be placed on screening and providing targeted interventions by both performance and clinical practitioners to promote mental wellbeing within the esports context.

Williams et al. (2025) examine the sociocultural challenges to expertise development in esports and propose a model with four interconnected dimension including cultural norms, social relationships, psychological factors, and resources access that capture the key challenges esports players face. Their findings indicate that the challenges and barriers experienced by esports players have experienced are multidimensional. Likewise, in Zhao and Zhu's (2021) study, they found that the Chinese public tends to see esports as unstable and lacking legitimacy with esports players' mental psychological shifts are closely tied to cultural norms, state influence, and economic pressures. In their scoping review on esports players' health and wellbeing, Monteiro Pereira et al. (2022) highlighted key research areas including lifestyle, sleep patterns and quality, engagement in physical activity, psychological distress, and mental health challenges. For instance, sleep and mood disturbances can impose significant challenges for esports players, potentially leading to performance declines and increasing the risk of mental health issues (Eickhoff et al., 2015; Palanichamy et al., 2020; Smith et al., 2022).

Palanichamy et al. (2020) conducted a systematic review, in which they highlighted three primary health-related concerns in esports: physical health risks, psychological distress, and addiction. Their findings suggested that prolonged exposure to esports' competitive environment can lead to significant physical health programmes such as headaches, eyestrain, and back pain, in addition to psychological issues including anxiety, depressions, and sleep disorder. Monteiro Pereira et al. (2023) reported that all participants, who are esports players, in their study acknowledged a significant connection between esports and physical health concerns, largely due to factors such as gaming environments, suboptimal facilities, and extended periods of sitting. Their study, therefore, advocated for ergonomic improvements, particularly the implementation of specialised chairs and monitors, to safeguard players against posture and vision issues. In this context, when examining the physical health of esports players, injuries represent a crucial consideration. In esports, such injuries are predominantly classified as overuse injuries, resulting from repetitive movements rather than sudden traumatic event (DiFrancisco-Donoghue et al., 2019). As such, the risk of these injuries can be minimised through targeted exercises, ergonomic improvement, correct posture maintenance, and well-

regulated workload distribution, including structured practice, competitions, rest, and recovery periods (McGee et al., 2024). Physical health issues including injuries, are strongly linked to prolonged seated training sessions and insufficient physical activity, raising concerns about the overall wellbeing of esports players.

Mental wellbeing is inherently affected by physical health, and the relationship between them is interdependent. Pereira et al. (2021) highlighted key concerns among esports players, such as anxiety, depression, unhealthy dietary patterns, and sleep disruptions. They pointed out the importance of resolving these concerns, as players' ability to manage mental health issues significantly shapes their day-to-day experiences. Esports players also continually experience pressure from both internal and external factors. In this respect, sources of stress may include teammates with limited emotional maturity, coaches who emphasise gameplay at the expense of soft skills due to insufficient raining, and the impact of social media attention, whether positive or negative (Leis et al., 2024). Furthermore, the intensity and duration of training and practice play a crucial role in mental wellbeing. For instance, Korean professional esports players trained for longer hours daily compared to their U.S. and Australian counterparts, leading to considerably higher rates of depression, primarily due to inadequate sleep quality (Lee et al., 2021). The potential threats to mental wellbeing in esports emphasise the importance of implementing evidence-based approaches, making it imperative for esports organisations and key industry stakeholders to ensure the mental health and long-term wellbeing of their personnel (Kegelaers et al., 2024).

Despite the critical need to focus on both physical and mental wellbeing, researchers have raised concerns over the insufficient wellbeing support in esports teams, stressing the significance of providing players with sustained access to professionals and experts to help players in the prevention, recognition, and management of their health conditions and wellbeing (Hong, 2023; Monteiro Pereira et al., 2023). In their study examining key stakeholders' perspectives on the wellbeing and career prospects of esports players, Hong (2025) identified physical health, psychological resilience, communication ability, financial competence, and career planning as key factors affecting players' wellbeing and future career paths, both while actively competing and after retiring from esports. By highlighting industry leaders' perspectives on players' wellbeing, they suggested that further research should take a more holistic approach to understanding players' own experiences. While some studies have explored esports players' perspectives on physical and mental wellbeing (e.g., Hong, 2023; Monteiro Pereira et al., 2023; Pereira et al., 2021), a comprehensive investigation into esports players' perspectives across different levels and genres regarding aspects of wellbeing beyond physical and mental dimensions remains significantly limited.

1.4. Human wellbeing framework

Even with the rising academic focus on esports and esports players' wellbeing, the field continues to lack a structured framework for understanding esports players' holistic wellbeing and its associated research areas (Cranmer et al., 2021). To address this gap, this study adopts the human wellbeing framework proposed by Biedenweg et al. (2016), which was developed through an extensive review of existing literature. Human wellbeing, as argued by social sciences researchers, is influenced by multiple dimensions of life, such as economic stability, meaningful social connections, mental and physical health, healthy work environments, and a secure environment (Diener et al., 2009; Rath & Harter, 2010). Structured around six key areas, the human wellbeing framework (Biedenweg et al., 2016) includes physical (i.e., human health and measurable physiological wellbeing), psychological (i.e., emotional, spiritual, and cognitive wellbeing), cultural (i.e., shared beliefs, values, and traditions passed across generations), social (i.e., social capital, and community cohesion), economic (i.e., financial stability, income distribution, and access to meaningful employment), and

governance (i.e., power structures, decision-making processes, and perceptions of empowerment) wellbeing. While the framework was employed by Biedenweg et al. (2016) in a marine environment context, – its conceptual foundation draws from well-established models in the social sciences and public health (Hagerty et al., 2001; Summers et al., 2012), which makes it highly adaptable across domains. Its emphasis on the interconnectedness of physical, psychological, cultural, social, economic, and governance factors is consistent with the complexities of players' wellbeing in esports, an environment in which performance, identity, and community are closely interwoven. Thus, the framework is considered suitable and relevant for examining holistic wellbeing in the esports context.

As key stakeholders in the esports ecosystem (Hong, 2023; Scholz, 2020), players' wellbeing is crucial to the industry's sustainability. To better understand their needs and the support they require, the present study applies Biedenweg et al.'s (2016) human wellbeing framework to develop and administrate a comprehensive questionnaire focusing on the esports context. Thus, the study aims to identify esports players' perceived challenges, barriers and specific needs across each wellbeing domain, which can contribute to promote their holistic wellbeing and support the development of sustainable career pathways in esports.

2. Methods

2.1. Study design

The present study employed an exploratory sequential mixed methods design (Creswell & Creswell, 2017), consisting of three phases. In this design, researchers initiate the process with qualitative exploration, which informs the basis for developing a specific component such as a survey instrument, experimental procedure, or set of variables. This component is then evaluated in a subsequent quantitative phase. This approach involves data collection at two stages to achieve research aims: the initial phase, where qualitative data is collected, and the final phase where the developed quantitative component is administered (Creswell & Creswell, 2017). The study was, thus, conducted in three phases: (a) qualitative data collection and analysis involved two focus groups comprising five and three participants, respectively, along with one semi-structured interviews, (b) questionnaire development drew on the findings from the first phase and was grounded in the chosen theoretical framework, and (c) administration of the developed questionnaire, which collected quantitative data from 393 esports players across all levels.

2.2. Phase 1: Qualitative data collection and analysis

The initial draft of the broad context questionnaire was designed applying findings from the previous study (Hong, 2023) and the human wellbeing framework proposed by Biedenweg et al. (2016) in order to support Phase 1 by providing participants with an overview of what is considered in each domain. In Phase 1, a group of experts in the relevant fields engaged in a broad discussion of their insights and experiences, considering the relevance of each domain to the esports context. Based on their review of the initial draft questionnaire prior to their focus groups/interviews, they then provided feedback to refine and finalise the items across all six domains.

2.2.1. Participants

Following the institutional ethical approval, nine participants were recruited for Phase 1 by applying purposive sampling (Etikan et al., 2016). These participants include academic staff members with expertise in sport finance and governance, sociology of sport, and health psychology respectively ($n = 3$), practitioners related to esports and career assistance programmes for high-performance athletes respectively ($n = 2$), professional esports players ($n = 2$), and semi-professional esports players ($n = 2$). Two of the academic staff members have strong

backgrounds in qualitative research, while the third specialises in quantitative methods. Collectively, their expertise covers all dimensions of the human wellbeing framework, which provides valuable insight and a strong basis for developing a new questionnaire. Both practitioners are from a major sport governing body that incorporates esports within its programmes and initiatives. Their dual expertise in traditional sport and esports provides important applied insight into developing a new scale. The perspectives of both professional and semi-professional esports players provided in-depth insight into the six domains of player wellbeing, which supported the development of a more contextually appropriate and population-specific questionnaire. Three participants were female, and the rest were male. Their nationalities include American ($n = 1$), Argentinian ($n = 1$), British ($n = 3$), Egyptian ($n = 1$), South Korean ($n = 1$), and Swiss ($n = 2$).

2.2.2. Procedure

To gain the participants' in-depth insight into the topic and the initial draft of the questionnaire, two focus groups and one semi-structured interview were conducted. Initially, only focus groups were planned. However, as one professional player was unavailable for a focus group, and they were interviewed instead. Three academic staff members and two practitioners participated in the first focus group ($n = 5$), while one professional and two semi-professional players participated in the second focus group ($n = 3$). An interview guide was developed based on insights from a literature review (e.g., Hong, 2023; Scholz, 2020; Smith et al., 2019) and the framework of human wellbeing (Biedenweg et al., 2016). The interview guide includes: (a) background and role (e.g., could you please introduce yourself and explain your role/position?); (b) review of the developed questionnaire (e.g., could you please share your thoughts on each area of the questionnaire and possibly make any suggestions?); (c) barriers and challenges esports players may face (e.g., what barriers and challenges do you think esports players may face, which should be highlighted and addressed?); (d) esports players' needs (e.g., could you please share your thoughts on esports players' needs in each area, which need to be highlighted?); and (e) required support (e.g., what type of support will be helpful to meet their needs?).

The participants were asked to suggest items for each domain and provide feedback on any concerns related to relevance, language, and context. All participants provided written consent before taking part in the study. Both focus groups and the semi-structured interview were conducted via video calls as participants and authors based in different countries. The first focus group lasted 94 min, the second 102 min, and the interview 106 min. All qualitative data were transcribed verbatim for data analysis.

2.2.3. Data analysis

Deductive content analysis was applied to analyse the qualitative data. The analysis began by using the human wellbeing framework (Biedenweg et al., 2016) as a categorisation matrix. The qualitative data were then coded according to this framework (i.e., categories; Elo & Kyngäs, 2008) to refine and finalise all items across the six domains, incorporating insights and feedback from the group (Kyngäs & Vanhannen, 1999). Subsequently, the data were reviewed for content and coded in compliance with the identified categories, which correspond to the six domains in this study (Polit & Beck, 2012). To ensure trustworthiness, triangulation through multiple analysts was applied. Three qualitative researchers, including the lead author, independently analysed the same qualitative data set before comparing their findings (Patton, 1999).

2.3. Phase 2: Development of a questionnaire

According to the procedure of an exploratory sequential mixed methods design (Creswell & Creswell, 2017), The findings from Phase 1 were used to refine and finalise all items in the questionnaire, with minor revisions made throughout the results. The final version of the questionnaire was thoroughly reviewed by a quantitative researcher

with extensive experience in psychometric development and validation, including a strong track record of peer-reviewed publications in this area. Following their review and in-depth discussion with the researcher team, no further modifications were considered necessary, as the items had already been subjected to a rigorous development process in the earlier phase.

2.4. Phase 3: Administration of the developed questionnaire

A quantitative cross-sectional approach was used for this study. The online questionnaire developed in Phase 1 was administered to esports players ($n = 393$) across different levels (professional, semi-professional, and amateur) and countries who were recruited through the authors' esports industry network. While self-identification was allowed as a reasonable proxy, we adopted Hong's (2023) definition of the terms to classify esports players. Within this classification, professional players are defined as full-time, competing at the highest level with professional team. Semi-professional players complete at an advanced level, often balancing their involvement with part-time work, and frequently transition to professional ranks. Amateur players, on the other hand, are dedicated gamers who compete in structured sports environment such as teams, clans, guilds, or clubs. However, based on the game they play, amateur players may compete in high-profile international tournaments (Hong & Wünsch, 2024). In this respect, Hong (2023) suggested that these classifications may be shaped by players' self-perception of their performance and motivation, which is why we allowed participants to self-identify, building on the discussions and definitions established during Phase 1.

2.4.1. Participants

When identifying effective channels and key contacts through the authors' network to reach out the target population, they were informed about the purpose of the study and inclusion criteria. Eligible participants were required to be sports players at any level and at least 18 years old or if under 18, have parental/guardian consent to complete the questionnaire. Out of the 410 respondents, 393 provided sufficient data, resulting in a 96% completion rate. Table 1 presents the participant characteristics. Most participants were amateur (47.8%) or professional (38.2%) players, with only a small proportion identifying as semi-professional (9.7%). Semi-professional players receive payment for playing esports but do not rely on it as their primary source of income. The small number of respondents suggests that many players can distinguish between professional and non-professional status, typically based on the presence of a player contract. For the purposes of analysis, the amateur and semi-professional category were combined under *amateur* to account for the fluid definition of levels as discussed previously, and to facilitate comparisons between professional and non-professional players. The majority of players were male (80.7%) and identified as Asian (81.2%) or White (13.0%). Most were in formal education, either at university/college (55.2%) or secondary school (20.6%), with the largest proportion being students (71.5%) or full-time employees (15.0%). Many did not earn income from esports (67.7%), while some earned between \$1 and \$9999 (14.2%). Almost half had no post-esports career plans (49.4%), while others aimed to pursue careers in esports (15.5%) or further education (14.5%).

2.4.2. Procedure

The utilisation of questionnaires is widely considered as a conventional approach in research due to the regular necessity of engaging with large target populations, such as esports players (Andrew et al., 2019). Questionnaires prove invaluable for describing characteristics, perceptions, and the behaviour of target populations. Questionnaires are limited by these set questions and answer options (Bell et al., 2022) and a different approach, such as interviews, may have targeted players with more specific knowledge. However, the online questionnaire was deemed to be the most attractive method to acquire a large sample group

Table 1
Characteristics of esports players.

		Count	Column %
Total		393	100%
Level of career	Professional	150	38.2%
	Amateur	226	57.5%
Gender	Male	317	80.7%
	Female	65	16.5%
Ethnicity	White	51	13.0%
	Asian	319	81.2%
	Black	3	0.8%
	Mixed/multiple ethnic groups	5	1.3%
	Other	6	1.5%
Education	Attending secondary school	81	20.6%
	Graduated from secondary school	35	8.9%
	Attending university/college	217	55.2%
	Graduated from university/college	29	7.4%
	Advanced degree	11	2.8%
	Other	10	2.5%
Employment status	Full time employee	59	15.0%
	Part time employee	3	0.8%
	Self-employed	9	2.3%
	Furloughed	0	0%
	Student	281	71.5%
	Unemployed	12	3.1%
	Other	20	5.1%
Annual income earned through esports	\$0	266	67.7%
	\$1 to \$9999	56	14.2%
	\$10,000 to \$24,999	15	3.8%
	\$25,000 to \$49,000	12	3.1%
	\$50,000 or more	30	7.6%
Plans for after eSports	No plans	194	49.4%
	Further study	57	14.5%
	Employment within eSports industry	61	15.5%
	Employment out with eSports industry	14	3.6%
	Streaming	27	6.9%
	Other	22	5.6%

due to the convenience of completion (Duffy et al., 2005).

The questionnaire contained 84 closed questions with set answer options due to the desire to make generalisable descriptions about the target population. These questions used a 5-point Likert scale from 1 (*Not at all relevant*) to 5 (*Very often*) and were aligned with Biedenwig et al.'s (2016) human wellbeing framework, including physical, psychological, cultural, social, economic, and governance domains. As identified in Phase 1, questions were split into two categories: (a) Challenges and Barriers to an esports career and (b) Support systems for an esports career. In addition, a further 7 questions, containing background and demographic information was collected for all participants. The questionnaire was created in English and then translated into Korean, French, Spanish, German, Chinese, and Japanese by a professional service. All versions were distributed using the OnlineSurveys platform following institutional ethical approval. The questionnaire remained accessible for approximately two months from the start of data collection. The completed questionnaires were then merged into a master dataset for analysis. Summary statistics, calculated by excluding missing values, were organised by wellbeing domain and then categorised as either challenges and barriers or support systems for esports careers.

2.4.3. Statistical analysis

Confirmatory Factor Analysis (CFA) was conducted to assess the construct validity of the scales, while Cronbach's alpha was calculated to evaluate the internal consistency (reliability) of the wellbeing constructs. Analyses were performed in R (version 4.5.1) using the *lavaan*

and *semTools* packages. Model fit was evaluated using three primary indices; the root means square error of approximation (RMSEA), the comparative fit index (CFI), and the Tucker–Lewis index (TLI). An RMSEA value of 0.05 or lower indicates a close fit, and values up to 0.08 suggest a reasonable fit (Hu & Bentler, 1998). CFI and TLI values above 0.90 are generally interpreted as indicative of good fit (Hair et al., 2009; Hu & Bentler, 1998). Cronbach's alpha values of above 0.60, preferably above 0.70, are considered adequate for scales used in social studies (Nunnally & Bernstein, 1994). Instrument development and evaluation were guided by the early stages of McKenzie et al.'s (2011) Scale Development Framework. Specifically, the framework informed construct conceptualisation, item generation, and diagnostic assessment of a proposed measurement model. Step 1 (conceptualisation) was addressed using the human wellbeing framework (Biedenweg et al., 2016) to identify challenges and barriers or support systems for esports careers. Step 2 (item generation) involved the creation of a comprehensive pool of items informed by prior literature and consultation with practitioners and players embedded within the esports ecosystem. Step 3 (content validity) was addressed through expert review as identified in Phase 1. Following this, Step 4 (model specification) was undertaken by specifying a twelve-factor measurement model, and Step 5 (scale evaluation by pretest) was conducted using CFA as a diagnostic assessment of whether the proposed constructs could be treated as latent variables. The results indicated that the measurement model failed to meet minimum fit criteria and exhibited substantial inter-factor overlap. In accordance with the framework, poor model fit at this stage would ordinarily motivate further scale purification and refinement (Step 6) and subsequent validation using new samples (Steps 7–9). However, because the primary aim of the present study was not scale validation or refinement, but rather the descriptive examination of perceived barriers, challenges and supports across demographic groups, the framework was not pursued beyond Step 5. Construct validity was checked following Fornell and Larcker's (1981) guidelines for convergent and discriminant validity. If the average variance extracted (AVE) for a construct is 0.50 or higher, the variance explained by the construct exceeds the measurement error, indicating good convergent validity. Additionally, if the AVE for a construct is smaller than the squared correlation between this construct and another construct, then these two constructs lack discriminant validity. Hair et al. (2009) argued that all standardised factor loadings should be at least 0.5 (explaining 25% of the variance in each indicator) and ideally 0.7 or higher (explaining 49% of the variance).

Data were analysed by calculating means and standard deviations for each survey question and further broken down across participants' gender and level of career. Since participants answered the same questions, comparisons between gender and level of career were analysed using independent samples *t*-tests. We adjusted the *p*-values to account for multiple comparisons using the Benjamini-Hochberg method (Benjamini & Hochberg, 1995). We found that responses showed significant differences between male and female participants, suggesting the experience of esports is highly gendered. Significant differences also existed between professional and amateur esports players indicating that a player's career level also affects their experience of esports.

Table 2
Physical Challenges and Barriers to an esports career.

Factors and items			Cronbach's Alpha	Mean	SD	N (valid)	Missing
	λ	AVE					
Physical Challenges and Barriers		0.481	0.842	2.50	1.00	393	0
Diet/nutrition intake	0.591			2.76	1.33	391	2
Sedentary behaviour	0.733			2.61	1.38	389	4
Access to sport and leisure facilities	0.671			2.61	1.31	392	1
Sleep management	0.777			2.58	1.36	391	2
Physical inactivity	0.620			2.34	1.34	389	4
Injuries	0.739			2.09	1.35	386	7

3. Results

Based on the data analysis from Phase 2, which was developed from Phase 1, the results are presented according to the six domains of the human wellbeing framework (Biedenweg et al., 2016). Tables 2–13 present factor loadings (λ), average variance extracted (AVE), and internal consistencies (Cronbach's α). Missing values for each item corresponds to the number of participants who did not fill out the corresponding item. Missing values for each factor corresponds to the number of participants who did not fill out all items for the corresponding factor. In the present model, fit indices were as follows: CFI = 0.783, TLI = 0.773, RMSEA = 0.088. These values fall well below commonly accepted thresholds for acceptable model fit (CFI/TLI \geq 0.90; RMSEA \leq 0.08), indicating that the proposed measurement model does not adequately represent the data suggesting potential model misspecification or substantial inter-factor overlap. Accordingly, the model was rejected and not used for latent-variable analyses. A diagnostic assessment of the proposed measurement structure was conducted to evaluate whether the item sets could be treated as latent constructs. Although internal consistency estimates (Cronbach's $\alpha >$ 0.70) indicated that items within each set were correlated, subsequent analyses revealed substantial limitations for latent modelling. Specifically, while standardised factor loadings were generally moderate to high (all standardised factor loadings are above 0.5 while the vast majority are above 0.7), evidence of convergent and discriminant validity was insufficient. In particular, the AVE for Physical Challenges and Barriers (0.481) fell below conventional thresholds ($>$ 0.5), and strong correlations between the Physical and Social Challenges and Barriers factors indicated substantial overlap. These results demonstrate that despite theoretical distinctions, participants perceived these challenges as highly interrelated and multidimensional rather than as discrete constructs. Consequently, the proposed measurement model was rejected, and no claims regarding construct reliability or validity are advanced. Given the insufficient discriminant validity among some factors, all subsequent analyses were therefore conducted at the item level to examine group differences in specific challenges and supports without relying on latent-variable assumptions. This pattern likely reflects the complex, systemic nature of access and inclusion issues within esports ecosystems, where physical, social, and environmental barriers often co-occur and reinforce one another. This approach allows for the examination of group differences in specific items while maintaining empirical transparency. Again, we do not delete any items as we are not progressing to testing relationships between constructs and will only assess demographic differences on the different items within the questionnaire. We therefore wish to include all relevant information developed for this exploratory study. Construct-level comparisons are included as aggregate summaries of item-level patterns rather than as tests of latent construct differences. (See Tables 14–19.)

3.1. Physical factors

Summary statistics for the 14 items corresponding to the *Physical Wellbeing* domain are presented in Tables 2 and 3. The mean scores suggested that all items were considered neutral to not relevant as

Table 3
Physical Support systems for an esports career.

Factors and items	λ	AVE	Cronbach's Alpha	Mean	SD	N (valid)	Missing
Physical Support systems		0.640	0.933	2.47	1.09	393	0
Face-to-face personal training programmes	0.832			2.59	1.37	392	1
Dietary/Nutrition support/resources	0.829			2.55	1.30	392	1
Education on use of performance enhancing substances	0.820			2.54	1.39	391	2
Physiotherapy	0.765			2.52	1.38	389	4
Sport centre memberships	0.711			2.44	1.31	393	0
Online physical activity resources	0.800			2.40	1.24	390	3
Online personal training programmes	0.890			2.38	1.29	389	4
Rehabilitation sessions	0.753			2.36	1.35	391	2

Table 4
Psychological Challenges and Barriers to an esports career.

Factors and items	λ	AVE	Cronbach's Alpha	Mean	SD	N (valid)	Missing
Psychological Challenges and Barriers		0.700	0.921	2.63	1.20	392	1
Possession of psychology performance skills	0.837			2.75	1.37	390	3
Emotion/Mood control	0.832			2.71	1.37	391	2
Burnout	0.846			2.63	1.39	391	2
Uncertainty over future career	0.854			2.61	1.35	389	4
Anxiety	0.813			2.42	1.35	390	3

Table 5
Psychological Support systems for an esports career.

Factors and items	λ	AVE	Cronbach's Alpha	Mean	SD	N (valid)	Missing
Psychological Support systems		0.763	0.957	2.75	1.20	392	1
Mentoring by coaches	0.816			2.87	1.36	390	3
Prioritization skills	0.861			2.86	1.31	391	2
Time management skills	0.862			2.82	1.33	391	2
Mentoring by other players (former or current)	0.891			2.80	1.34	392	1
Career management consulting/advice	0.899			2.67	1.32	386	7
Counselling sessions delivered by experts	0.892			2.65	1.37	389	4
Mental/psychological performance skills development sessions	0.889			2.55	1.34	389	4

Table 6
Social Challenges and Barriers to an esports career.

Factors and items	λ	AVE	Cronbach's Alpha	Mean	SD	N (valid)	Missing
Social Challenges and Barriers		0.534	0.918	2.37	0.96	393	0
Communication with other players	0.766			2.97	1.42	391	2
Communication with other support staff including coaches	0.761			2.91	1.37	391	2
esports not valued by parents, family members, friends, and significant others	0.808			2.60	1.30	391	2
Criticism and stigma towards esports	0.764			2.49	1.25	392	1
Limited social support and loneliness	0.750			2.48	1.18	389	4
Verbal/online harassment (toxicity)	0.678			2.35	1.29	391	2
Disability access and inclusion	0.635			2.14	1.20	391	2
Gender inequality	0.686			2.00	1.23	393	0
Race/Ethnicity-based discrimination	0.694			1.96	1.16	389	4
Religion-based discrimination	0.711			1.80	1.08	391	2

Table 7
Social Support systems for an esports career.

Factors and items	λ	AVE	Cronbach's Alpha	Mean	SD	N (valid)	Missing
Social Support systems		0.736	0.951	2.64	1.12	393	0
Communication skills development	0.833			2.88	1.35	393	0
Social media skills development	0.872			2.82	1.29	391	2
Professional media training	0.896			2.71	1.29	391	2
Educational/informative tutorial for parents, family members, friends, and significant others	0.892			2.63	1.30	389	4
Educational tutorials to promote inclusion	0.829			2.58	1.30	391	2
Educational tutorials to promote gender equality	0.806			2.45	1.24	391	2
Anti-discrimination educational tutorials	0.870			2.42	1.25	389	4

Table 8
Cultural Challenges and Barriers to an esports career.

Factors and items	λ	AVE	Cronbach's Alpha	Mean	SD	N (valid)	Missing
Cultural Challenges and Barriers		0.678	0.925	2.61	1.10	392	1
Career duration	0.758			2.78	1.31	391	2
Work-life balance	0.800			2.76	1.30	390	3
Training environment	0.839			2.71	1.34	390	3
Understanding other cultures	0.815			2.49	1.21	389	4
Language barrier to communicate with others	0.871			2.48	1.27	390	3
Working with multi-national team members	0.840			2.45	1.29	389	4

Table 9
Cultural Support systems for an esports career.

Factors and items	λ	AVE	Cronbach's Alpha	Mean	SD	N (valid)	Missing
Cultural Support systems		0.788	0.955	2.62	1.15	392	1
Team building activities	0.887			3.02	1.38	389	4
Language education support	0.910			2.62	1.28	389	4
Educational tutorials on how to improve the training environment	0.937			2.57	1.27	390	3
Translation support services	0.917			2.55	1.29	389	4
Educational tutorials on working with foreign teammates	0.931			2.53	1.25	390	3
Educational tutorials on understanding other cultures	0.755			2.42	1.20	389	4

Table 10
Economic Challenges and Barriers to an esports career.

Factors and items	λ	AVE	Cronbach's Alpha	Mean	SD	N (valid)	Missing
Economic Challenges and Barriers		0.774	0.959	2.64	1.16	391	2
Financial independence	0.877			2.80	1.34	391	2
Finance to cover travel expenses	0.940			2.74	1.33	389	4
Finance to cover living expenses	0.941			2.72	1.32	385	8
Financial planning and management skills	0.790			2.65	1.28	389	4
Knowledge of tax system	0.836			2.63	1.28	387	6
Access to income generation opportunities	0.889			2.55	1.31	386	7
Having a job outside of esports career to secure living/travel expenses	0.869			2.42	1.27	389	4

Table 11
Economic Support systems for an esports career.

Factors and items	λ	AVE	Cronbach's Alpha	Mean	SD	N (valid)	Missing
Economic Support systems		0.838	0.979	2.78	1.20	390	3
Support around understanding esports contracts	0.891			2.91	1.33	388	5
An opportunity to be exposed to sponsors	0.914			2.84	1.37	389	4
Support for transitioning to other careers after esports	0.920			2.83	1.34	389	4
Training on how to improve income potential	0.913			2.82	1.31	390	3
Internships for professional players/Jobs based skills learning	0.921			2.80	1.33	388	5
Support around understanding tax systems	0.924			2.76	1.30	384	9
Small grants scheme for travel expenses	0.940			2.70	1.31	390	3
Educational tutorials on how to balance dual careers	0.910			2.69	1.26	385	8
Educational tutorials on financial planning and management skills	0.905			2.65	1.26	389	4

Table 12
Governance Challenges and Barriers to an esports career.

Factors and items	λ	AVE	Cronbach's Alpha	Mean	SD	N (valid)	Missing
Governance Challenges and Barriers		0.850	0.965	2.76	1.20	390	3
Opportunity for player voice (opinion) to be heard	0.909			2.87	1.35	390	3
Knowledge on how decisions on esports players' wellbeing and welfare are made	0.941			2.76	1.30	387	6
Awareness on responsibility/accountability of each governing body/stakeholder	0.948			2.76	1.26	389	4
Understanding of structure of federations/teams/national associations	0.934			2.72	1.26	388	5
Lack of contact point to raise concerns with	0.876			2.71	1.27	389	4

challenges and barriers, or as needed support systems. Overall, participants recorded the following items as the most relevant challenges and

barriers: *Diet/nutrition intake* ($M = 2.76, SD = 1.33$) and *Sedentary behaviour* ($M = 2.61, SD = 1.38$). The most relevant support systems

Table 13
Governance Support systems for an esports career.

Factors and items			Cronbach's Alpha	Mean	SD	N (valid)	Missing
	λ	AVE					
Governance Support systems		0.880	0.983	2.73	1.19	390	3
Support from esports stakeholders to help navigate local barriers to participation	0.943			2.82	1.32	386	7
Contact point to raise concerns with	0.943			2.79	1.27	390	3
Player representatives to liaise with other stakeholders	0.947			2.76	1.28	388	5
Educational tutorials on how players can influence decisions using player voice (opinion)	0.942			2.73	1.26	390	3
Sharing good practice between stakeholders	0.931			2.73	1.26	388	5
Informative tutorials on decision-making process around esports players' wellbeing and welfare	0.933			2.72	1.25	389	4
Informative tutorials on the roles and responsibilities of each governing body/stakeholder	0.943			2.66	1.26	390	3
Informative tutorials on how each governing body/stakeholder is structured	0.923			2.62	1.22	386	7

Table 14
Physical Challenges and Barriers to an esports career split by Gender and Career Level, with t-tests between groups.

	Gender				t	Career Level				t	Total	
	Male		Female			Professional		Amateur			M	(SD)
	M	(SD)	M	(SD)		M	(SD)	M	(SD)		M	(SD)
Injuries	1.96	(1.29)	2.70	(1.47)	-4.12**	2.46	(1.48)	1.78	(1.15)	4.72***	2.09	(1.35)
Physical inactivity	2.39	(1.37)	2.14	(1.21)	1.37	2.62	(1.43)	2.16	(1.24)	3.15**	2.34	(1.34)
Sedentary behaviour	2.68	(1.42)	2.28	(1.15)	2.14	2.86	(1.36)	2.49	(1.39)	2.44**	2.61	(1.38)
Sleep management	2.59	(1.38)	2.60	(1.28)	-0.03	2.70	(1.33)	2.46	(1.38)	1.64	2.58	(1.36)
Access to sport and leisure facilities	2.61	(1.34)	2.66	(1.19)	-0.30	2.79	(1.25)	2.49	(1.37)	2.08*	2.61	(1.31)
Diet/nutrition intake	2.75	(1.35)	2.88	(1.32)	-0.68	3.07	(1.22)	2.60	(1.40)	3.19**	2.76	(1.33)
All challenges and barriers	2.49	(1.01)	2.55	(0.98)	-0.37	2.75	(0.91)	2.32	(1.02)	4.01***	2.50	(1.00)
Physiotherapy	2.42	(1.34)	3.02	(1.47)	-3.23**	2.93	(1.34)	2.30	(1.37)	4.22***	2.52	(1.38)
Rehabilitation sessions	2.22	(1.27)	2.95	(1.49)	-4.09**	2.70	(1.35)	2.13	(1.32)	3.71**	2.36	(1.35)
Face-to-face personal training programmes	2.54	(1.41)	2.82	(1.18)	-1.45	2.90	(1.27)	2.37	(1.4)	3.46**	2.59	(1.37)
Online personal training programmes	2.35	(1.33)	2.55	(1.14)	-1.09	2.46	(1.24)	2.40	(1.36)	0.300	2.38	(1.29)
Sport centre memberships	2.37	(1.31)	2.74	(1.25)	-2.07	2.49	(1.28)	2.37	(1.31)	0.81	2.44	(1.31)
Online physical activity resources	2.36	(1.25)	2.65	(1.19)	-1.67	2.46	(1.19)	2.40	(1.30)	0.46	2.40	(1.24)
Dietary/Nutrition support/resources	2.50	(1.29)	2.81	(1.3)	-1.77	2.76	(1.22)	2.43	(1.35)	2.31*	2.55	(1.30)
Education on use of performance enhancing substances	2.44	(1.41)	3.06	(1.21)	-3.30**	2.79	(1.33)	2.43	(1.48)	2.32*	2.54	(1.39)
All support items	2.40	(1.08)	2.83	(1.09)	-2.90**	2.69	(0.99)	2.36	(1.17)	2.78**	2.47	(1.09)

Note. Significance reported at the following levels:

- * $p < 0.1$
- ** $p < 0.05$
- *** $p < 0.01$

Table 15
Psychological Challenges and Barriers as well as Support Systems to an esports career split by Gender and Career Level, with t-tests between groups.

	Gender				t	Career Level				t	Total	
	Male		Female			Professional		Amateur			M	(SD)
	M	(SD)	M	(SD)		M	(SD)	M	(SD)		M	(SD)
Anxiety	2.34	(1.35)	2.78	(1.29)	-2.44	2.74	(1.33)	2.16	(1.30)	3.99***	2.42	(1.35)
Emotion/Mood control	2.70	(1.4)	2.83	(1.24)	-0.72	2.98	(1.25)	2.54	(1.41)	3.00**	2.71	(1.37)
Possession of psychology performance skills	2.72	(1.4)	2.91	(1.26)	-0.98	2.99	(1.35)	2.59	(1.36)	2.73**	2.75	(1.37)
Burnout	2.60	(1.43)	2.72	(1.15)	-0.64	2.91	(1.32)	2.39	(1.38)	3.53***	2.63	(1.39)
Uncertainty over future career	2.58	(1.37)	2.85	(1.27)	-1.47	2.80	(1.31)	2.49	(1.40)	2.05*	2.61	(1.35)
All challenges and barriers	2.59	(1.21)	2.82	(1.15)	-1.40	2.89	(1.12)	2.43	(1.22)	3.53**	2.63	(1.20)
Mental/psychological performance skills development sessions	2.53	(1.37)	2.65	(1.18)	-0.65	2.86	(1.33)	2.31	(1.30)	3.81**	2.55	(1.34)
Mentoring by other players	2.79	(1.38)	2.82	(1.17)	-0.12	3.13	(1.27)	2.59	(1.38)	3.68**	2.80	(1.34)
Mentoring by coaches	2.89	(1.41)	2.86	(1.08)	0.16	3.26	(1.30)	2.64	(1.37)	4.20***	2.87	(1.36)
Counselling sessions delivered by experts	2.60	(1.39)	2.94	(1.21)	-1.83	2.86	(1.37)	2.52	(1.36)	2.31*	2.65	(1.37)
Career management consulting/advice	2.64	(1.35)	2.88	(1.12)	-1.30	2.94	(1.31)	2.55	(1.32)	2.74**	2.67	(1.32)
Time management skills	2.82	(1.37)	2.80	(1.09)	0.11	3.11	(1.18)	2.63	(1.40)	3.35**	2.82	(1.33)
Prioritisation skills	2.88	(1.35)	2.82	(1.12)	0.34	3.21	(1.17)	2.65	(1.35)	4.05***	2.86	(1.31)
All support items	2.74	(1.23)	2.81	(1.02)	-0.47	3.05	(1.10)	2.55	(1.24)	3.83***	2.75	(1.20)

Note. Significance reported at the following levels:

- * $p < 0.1$
- ** $p < 0.05$
- *** $p < 0.01$

identified were *Face-to-face personal training programmes* ($M = 2.59$, $SD = 1.37$) and *Dietary/Nutrition support/resources* ($M = 2.55$; $SD = 1.30$).

The *t*-test analysis shows that significant differences exist for challenges and barriers with female participants reporting injuries are more

relevant. For support systems, physiotherapy, rehabilitation sessions, and education on performance enhancing substances are significantly more relevant for female participants. When comparing across career level, significant differences existed in all physical barriers except sleep

Table 16
Social Challenges and Barriers as well as Support Systems to an esports career split by Gender and Career Level, with t-tests between groups.

	Gender					Career Level						
	Male		Female		t	Professional		Amateur		t	Total	
	M	(SD)	M	(SD)		M	(SD)	M	(SD)		M	(SD)
Communication with other players	2.97	(1.47)	2.95	(1.14)	0.09	3.38	(1.27)	2.66	(1.43)	4.85***	2.97	(1.42)
Communication with other support staff including coaches	2.89	(1.41)	3.00	(1.15)	-0.60	3.42	(1.26)	2.54	(1.35)	6.11***	2.91	(1.37)
Limited social support and loneliness	2.43	(1.21)	2.72	(1.02)	-1.78	2.68	(1.10)	2.32	(1.23)	2.86**	2.48	(1.18)
Criticism and stigma towards esports	2.46	(1.27)	2.62	(1.14)	-0.90	2.63	(1.17)	2.41	(1.31)	1.64	2.49	(1.25)
Esports not valued by parents, family members, friends and significant others	2.52	(1.33)	2.97	(1.06)	-2.56	2.67	(1.20)	2.56	(1.37)	0.75	2.60	(1.3)
Race/Ethnicity-based discrimination	1.88	(1.13)	2.25	(1.19)	-2.36	1.95	(1.12)	1.95	(1.17)	-0.05	1.96	(1.16)
Religion-based discrimination	1.71	(1.03)	2.11	(1.12)	-2.79*	1.75	(1.06)	1.75	(1.06)	0.66	1.80	(1.08)
Gender inequality	1.89	(1.18)	2.42	(1.32)	-3.20**	2.03	(1.11)	2.03	(1.29)	-1.04	2.00	(1.23)
Verbal/online harassment (toxicity)	2.35	(1.3)	2.32	(1.27)	0.17	2.29	(1.22)	2.29	(1.35)	0.99	2.35	(1.29)
Disability access and inclusion	2.08	(1.21)	2.43	(1.16)	-2.17	2.12	(1.22)	2.12	(1.19)	0.59	2.14	(1.2)
All challenges and barriers	2.32	(0.95)	2.58	(0.96)	-1.99	2.51	(0.81)	2.26	(1.05)	2.36**	2.37	(0.96)
Communication skills development	2.90	(1.39)	2.78	(1.1)	0.64	3.23	(1.26)	2.68	(1.37)	3.81**	2.88	(1.35)
Social media skills development	2.82	(1.34)	2.89	(1.08)	-0.40	3.14	(1.19)	2.65	(1.34)	3.52**	2.82	(1.29)
Professional media training (e.g. interview, speech)	2.70	(1.33)	2.78	(1.1)	-0.47	2.92	(1.20)	2.59	(1.35)	2.37*	2.71	(1.29)
Educational/informative tutorials for parents, family members, friends and significant others	2.59	(1.33)	2.89	(1.13)	-1.73	2.76	(1.18)	2.58	(1.36)	1.24	2.63	(1.3)
Anti-discrimination educational tutorials	2.37	(1.28)	2.56	(1.1)	-1.11	2.46	(1.16)	2.48	(1.33)	-0.12	2.42	(1.25)
Educational tutorials to promote gender equality	2.38	(1.26)	2.72	(1.1)	-2.04	2.41	(1.13)	2.51	(1.31)	-0.68	2.45	(1.24)
Educational tutorials to promote inclusion	2.53	(1.32)	2.78	(1.11)	-1.45	2.62	(1.21)	2.62	(1.36)	-0.02	2.58	(1.3)
All support items	2.61	(1.14)	2.78	(1.00)	-1.07	2.79	(0.96)	2.58	(1.23)	1.66	2.64	(1.12)

Note. Significance reported at the following levels:

- * p < 0.1
- ** p < 0.05
- *** p < 0.01

Table 17
Cultural Challenges and Barriers as well as Support Systems to an esports career split by Gender and Career Level, with t-tests between groups.

	Gender					Career Level						
	Male		Female		t	Professional		Amateur		t	Total	
	M	(SD)	M	(SD)		M	(SD)	M	(SD)		M	(SD)
Language barrier to communicate with others	2.44	(1.28)	2.69	(1.17)	-1.49	2.48	(1.21)	2.49	(1.29)	-0.02	2.48	(1.27)
Understanding other cultures	2.46	(1.22)	2.66	(1.13)	-1.21	2.54	(1.10)	2.44	(1.29)	0.70	2.49	(1.21)
Training environment	2.68	(1.38)	2.88	(1.19)	-1.05	2.97	(1.30)	2.50	(1.34)	3.23**	2.71	(1.34)
Working with multi-national team members	2.41	(1.32)	2.68	(1.16)	-1.51	2.47	(1.19)	2.43	(1.33)	0.33	2.45	(1.29)
Work-life balance	2.77	(1.34)	2.74	(1.14)	0.16	2.92	(1.21)	2.63	(1.34)	2.05*	2.76	(1.3)
Career duration	2.78	(1.34)	2.88	(1.19)	-0.55	3.11	(1.25)	2.56	(1.29)	3.92**	2.78	(1.31)
All challenges and barriers	2.59	(1.1)	2.75	(1.09)	-1.08	2.75	(0.97)	2.51	(1.16)	2.01*	2.61	(1.1)
Language education support	2.61	(1.32)	2.75	(1.12)	-0.80	2.80	(1.20)	2.53	(1.33)	1.93	2.62	(1.28)
Translation support services	2.53	(1.32)	2.72	(1.21)	-1.09	2.59	(1.25)	2.54	(1.33)	0.36	2.55	(1.29)
Educational tutorials on understanding other cultures	2.40	(1.23)	2.58	(1.1)	-1.11	2.51	(1.17)	2.44	(1.25)	0.56	2.42	(1.2)
Educational tutorials on how to improve the training environment	2.53	(1.3)	2.77	(1.13)	-1.37	2.65	(1.20)	2.53	(1.33)	0.89	2.57	(1.27)
Educational tutorials on working with foreign teammates	2.51	(1.28)	2.72	(1.11)	-1.25	2.59	(1.20)	2.55	(1.31)	0.33	2.53	(1.25)
Team building activities	3.03	(1.41)	3.02	(1.22)	0.09	3.27	(1.24)	2.88	(1.46)	2.61**	3.02	(1.38)
All support items	2.60	(1.17)	2.76	(1.06)	-1.00	2.74	(1.03)	2.58	(1.24)	1.29	2.62	(1.15)

Note. Significance reported at the following levels:

- * p < 0.1
- ** p < 0.05
- *** p < 0.01

management, with professional players reporting all other items as significantly more relevant. Significant differences for support systems included physiotherapy, rehabilitation sessions, face-to-face personal training programmes, dietary/nutrition support, and education on performance enhancing substances. Again, professional players found all of these to be more relevant. No other significant differences exist.

3.2. Psychological factors

Summary statistics for the 12 items corresponding to the *Psychological Wellbeing* domain are presented in Tables 4 and 5. The mean scores suggested that all items were considered neutral to not relevant as challenges and barriers, or as needed support systems. Overall,

participants recorded the following items as the most relevant challenges and barriers: *Possession of psychology performance skills* ($M = 2.75$, $SD = 1.37$) and *Emotion/mood control* ($M = 2.71$, $SD = 1.37$). The most relevant support systems identified were *Mentoring by coaches* ($M = 2.87$, $SD = 1.36$) and *Prioritisation skills* ($M = 2.86$, $SD = 1.31$).

The *t*-test analysis shows that no significant differences exist for challenges and barriers or support systems between genders. When comparing across career level, significant differences existed in all psychological barriers, with professional players reporting all items as significantly more relevant. This was also the case for psychological support systems, with professional players finding all items to be significantly more relevant compared with amateur players.

Table 18
Economic Challenges and Barriers as well as Support Systems to an esports career split by Gender and Career Level, with t-tests between groups.

	Gender					Career Level					Total	
	Male		Female		t	Professional		Amateur		t	M	(SD)
	M	(SD)	M	(SD)		M	(SD)	M	(SD)			
Financial independence	2.82	-1.38	2.75	-1.15	0.34	3.13	(1.26)	2.62	(1.38)	3.45**	2.80	(1.34)
Finance to cover travel expenses	2.74	-1.37	2.77	-1.14	-0.17	2.89	(1.25)	2.66	(1.36)	1.53	2.74	(1.33)
Finance to cover living expenses	2.72	-1.36	2.71	-1.14	0.04	2.90	(1.25)	2.61	(1.35)	2.03*	2.72	(1.32)
Having a job outside of esports career to secure living/travel expenses	2.39	-1.3	2.62	-1.16	-1.27	2.37	(1.16)	2.44	(1.33)	-0.48	2.42	(1.27)
Access to income generation opportunities	2.53	-1.36	2.61	-1.09	-0.44	2.59	(1.26)	2.49	(1.34)	0.67	2.55	(1.31)
Financial planning and management skills	2.63	-1.31	2.77	-1.13	-0.80	2.81	(1.23)	2.56	(1.31)	1.81	2.65	(1.28)
Knowledge of tax system	2.62	-1.31	2.70	-1.16	-0.48	2.75	(1.18)	2.59	(1.36)	1.12	2.63	(1.28)
All challenges and barriers	2.63	(1.18)	2.71	(1.06)	-0.49	2.78	(1.01)	2.56	(1.25)	1.73	2.64	(1.16)
Small grants scheme for travel expenses	2.69	-1.34	2.78	-1.21	-0.52	2.79	(1.21)	2.66	(1.37)	0.89	2.70	(1.31)
An opportunity to be exposed to sponsors	2.86	-1.39	2.85	-1.29	0.05	3.01	(1.25)	2.77	(1.43)	1.62	2.84	(1.37)
Educational tutorials on financial planning and management skills	2.63	-1.27	2.78	-1.21	-0.90	2.81	(1.15)	2.60	(1.33)	1.49	2.65	(1.26)
Educational tutorials on how to balance dual careers	2.69	-1.28	2.75	-1.15	-0.39	2.83	(1.16)	2.66	(1.32)	1.26	2.69	(1.26)
Support around understanding esports contracts	2.93	-1.36	2.89	-1.17	0.21	3.17	(1.18)	2.79	(1.41)	2.63**	2.91	(1.33)
Support around understanding tax systems	2.76	-1.32	2.8	-1.2	-0.20	2.96	(1.17)	2.71	(1.38)	1.75	2.76	(1.30)
Training on how to improve income potential	2.81	-1.34	2.85	-1.19	-0.19	2.99	(1.20)	2.75	(1.36)	1.66	2.82	(1.31)
Support for transition to others careers after esports	2.82	-1.37	2.88	-1.23	-0.30	3.01	(1.27)	2.77	(1.39)	1.62	2.83	(1.34)
Internships for professional players/Jobs based skills learning	2.8	-1.37	2.86	-1.17	-0.33	2.92	(1.21)	2.78	(1.42)	0.92	2.80	(1.33)
All support items	2.78	(1.22)	2.83	(1.13)	-0.29	2.94	(1.04)	2.72	(1.31)	1.69	2.78	(1.20)

Note. Significance reported at the following levels:

- * p < 0.1
- ** p < 0.05
- *** p < 0.01

Table 19
Governance Challenges and Barriers as well as Support Systems to an esports career split by Gender and Career Level, with t-tests between groups.

	Gender					Career Level					Total	
	Male		Female		t	Professional		Amateur		t	M	(SD)
	M	(SD)	M	(SD)		M	(SD)	M	(SD)			
Opportunity for player voice (opinion) to be heard	2.85	(1.38)	3.00	(1.17)	-0.83	3.12	(1.26)	2.71	(1.38)	2.78**	2.87	(1.35)
Understanding the structure of federations/teams/national associations	2.69	(1.3)	2.88	(1.09)	-1.04	2.87	(1.14)	2.63	(1.31)	1.73	2.72	(1.26)
Knowledge on how decisions on esports players' wellbeing and welfare are made	2.73	(1.33)	2.89	(1.12)	-0.90	2.97	(1.20)	2.67	(1.36)	2.09*	2.76	(1.3)
Awareness on responsibility/accountability of each governing body/stakeholder	2.75	(1.31)	2.88	(1.07)	-0.75	2.95	(1.17)	2.70	(1.33)	1.81	2.76	(1.26)
Lack of contact point to raise concerns with	2.68	(1.31)	2.85	(1.08)	-0.95	2.78	(1.15)	2.70	(1.36)	0.57	2.71	(1.27)
All challenges and barriers	2.74	(1.23)	2.90	(1.06)	-0.99	2.94	(1.06)	2.68	(1.27)	1.97*	2.76	(1.2)
Informative tutorials on the roles and responsibilities of each governing body/stakeholder	2.63	(1.29)	2.89	(1.12)	-1.52	2.81	(1.16)	2.65	(1.33)	1.10	2.66	(1.26)
Informative tutorials on how each governing body/stakeholder is structured	2.59	(1.26)	2.83	(1.07)	-1.44	2.74	(1.09)	2.62	(1.32)	0.89	2.62	(1.22)
Informative tutorials on decision-making process around esports players' wellbeing and welfare	2.72	(1.29)	2.82	(1.09)	-0.58	2.83	(1.11)	2.72	(1.36)	0.75	2.72	(1.25)
Educational tutorials on how players can influence decisions using player voice (opinion)	2.71	(1.3)	2.83	(1.05)	-0.70	2.84	(1.07)	2.71	(1.39)	0.95	2.73	(1.26)
Sharing good practice between stakeholders	2.71	(1.31)	2.88	(1.04)	-0.94	2.90	(1.10)	2.68	(1.38)	1.60	2.73	(1.26)
Contact point to raise concerns with	2.76	(1.3)	2.95	(1.12)	-1.13	2.89	(1.03)	2.79	(1.43)	0.75	2.79	(1.27)
Player representative to liaise with other stakeholders	2.72	(1.32)	3.03	(1.09)	-1.79	2.87	(1.08)	2.75	(1.42)	0.88	2.76	(1.28)
Support from esports stakeholders to help navigate local barriers to participation	2.78	(1.36)	3.05	(1.11)	-1.45	2.93	(1.14)	2.86	(1.45)	0.44	2.82	(1.32)
All support items	2.70	(1.22)	2.91	(1.03)	-1.27	2.85	(1.00)	2.72	(1.32)	0.98	2.73	(1.19)

Note. Significance reported at the following levels:

- * p < 0.1
- ** p < 0.05
- *** p < 0.01

3.3. Social factors

Summary statistics for the 17 items corresponding to the *Social Wellbeing* domain are presented in Tables 6 and 7. The mean scores suggested that all items were considered neutral to not at all relevant as challenges and barriers, or as needed support systems. Overall, participants recorded the following items as the most relevant challenges and

barriers: *Communication with other players* (M = 2.97, SD = 1.42) and *Communication with other support staff including coaches* (M = 2.91, SD = 1.37). The most relevant support systems identified were *Communication skills development* (M = 2.88, SD = 1.35) and *Social media skills development* (M = 2.82, SD = 1.29).

The t-test analysis shows that significant differences exist for challenges and barriers with female participants reporting religion-based

discrimination and gender inequality as more relevant. For support systems, no significant differences exist between genders. When comparing across career level, significant differences existed in social barriers included communication with other players, communication with support staff including coaches, and limited social support with professional players reporting these items as significantly more relevant. Significant differences for support systems included communication skills development, social media skills development, and professional media training. Again, professional players found all of these to be more relevant. No other significant differences exist.

3.4. Cultural factors

Summary statistics for the 12 items corresponding to the *Cultural Wellbeing* domain are presented in Tables 8 and 9. The mean scores suggested that all items were considered neutral to not relevant as challenges and barriers, or as needed support systems. Overall, participants recorded the following items as the most relevant challenges and barriers: *Career duration* ($M = 2.78$, $SD = 1.31$) and *Work-life balance* ($M = 2.76$, $SD = 1.30$). The most relevant support systems identified were *Team building activities* ($M = 3.02$, $SD = 1.38$) and *Language education support* ($M = 2.62$, $SD = 1.28$).

The *t*-test analysis shows that no significant differences exist for any challenges and barriers. For support systems, no significant differences existed across gender. When comparing across career level, significant differences existed in training environment, work-life balance, and career duration, with professional players finding these challenges and barriers significantly more relevant. Significant differences for support systems included team building activities. Again, professional players found all of these to be more relevant. No other significant differences exist.

3.5. Economic factors

Summary statistics for the 16 items corresponding to the *Economic Wellbeing* domain are presented in Tables 10 and 11. The mean scores suggested that all items were considered neutral to not relevant as challenges and barriers, or as needed support systems. Overall, participants recorded the following items as the most relevant challenges and barriers: *Financial independence* ($M = 2.80$, $SD = 1.34$) and *Finance to cover travel expenses* ($M = 2.74$, $SD = 1.33$). The most relevant support systems identified were *Support around understanding esports contracts* ($M = 2.91$, $SD = 1.33$) and *Opportunities to be exposed to sponsors* ($M = 2.84$, $SD = 1.37$).

The *t*-test analysis shows that no significant differences exist for any challenges and barriers. For support systems, no significant differences existed across gender. When comparing across career level, significant differences existed for financial independence and finance to cover living expenses, with professional players reporting all items as significantly more relevant. Significant differences for support systems included support around understanding esports contracts with professional players finding this to be more relevant. No other significant differences exist.

3.6. Governance factors

Summary statistics for the 13 items corresponding to the *Governance Wellbeing* domain are presented in Tables 12 and 13. The mean scores suggested that all items were considered neutral to not relevant as challenges and barriers, or as needed support systems. Overall, participants recorded the following items as the most relevant challenges and barriers: *Opportunity for player voice to be heard* ($M = 2.87$, $SD = 1.35$) and *Knowledge on how decisions on esports players' wellbeing and welfare are made* ($M = 2.76$, $SD = 1.30$). The most relevant support systems identified were *Support from esports stakeholders to help navigate local barriers to participation* ($M = 2.82$, $SD = 1.32$) and *Contact point to raise*

concerns with ($M = 2.79$, $SD = 1.27$).

The *t*-test analysis shows that no significant differences exist for any challenges and barriers between genders. When comparing across career level, significant differences existed in opportunity for player voice to be heard, and knowledge on how esports players' wellbeing and welfare are made, with professional players reporting these challenges as significantly more relevant. For support systems, no significant differences existed across gender or career level. No other significant differences exist.

4. Discussion

The present study identified key challenges and barriers to involvement in esports, as well as the perceived need for support systems to help players advance and sustain their esports career and involvement while ensuring their overall wellbeing. While questionnaire respondents, on average, considered all items neutral to not relevant for their careers, certain patterns of preference were evident, providing significant insights for both the body of knowledge and practice. By applying the human wellbeing framework (Biedenweg et al., 2016), this study provides empirical evidence across six domains of human wellbeing: *Physical, Psychological, Social, Cultural, Economic, and Governance*.

The findings on *Physical Wellbeing* suggest that most participants did not consider physical wellbeing challenges and support systems highly relevant. This implies that, in general, esports players do not perceive physical health and wellbeing as a major concern, despite research highlighting risks such as sedentary behaviours, poor posture, and overuse injuries (Chan et al., 2022; McGee et al., 2021; McGee et al., 2024). Nevertheless, *Diet/nutrition intake* and *Sedentary behaviour* were identified as the most significant concerns, suggesting that while players are aware of long-term health risks, they may not prioritise them. Accordingly, *Face-to-face personal training programmes* and *Dietary/nutrition support* were the most valued, which highlights the potential benefits of integrating structured physical wellbeing programmes into esports. These findings align with previous studies (e.g., Goulart et al., 2023; Hong, 2023, 2025) that emphasised the critical need for tailored interventions to support physical wellbeing and nutrition. In particular, within the limited research available on esports nutrition, Goulart et al.'s (2023) reported that that esports players' average food consumption failed to meet the nutritional recommendations outlined in the USDA Dietary Guidelines for Americans 2020–2025.

As such, it is encouraging that the participants in this study recognise the importance of improving dietary/nutrition intake through a structured support system. When it comes to gender difference, female participants perceived injuries as more relevant challenges, which may reflect differences in risk perception or injury experiences within esports. Since research has shown that injuries in esports are primarily classified as overuse injuries, which are preventable (DiFrancisco-Donoghue et al., 2019; McGee et al., 2024), addressing these concerns is crucial for promoting female participation. In terms of carer-level differences, professional players perceived all physical wellbeing concerns as more relevant than amateurs, suggesting that heightened competition and intensive training schedules exacerbate health concerns. Considering that rigorous training and competitive play in esports have been associated with increased stress, mental health issues, and compromised decision-making (DiFrancisco-Donoghue et al., 2019; Wattanapit et al., 2020), providing targeted support, particularly for professional players, is crucial in light of the absence of a structured support system (Hong, 2023).

In the domain of *Psychological Wellbeing*, *Possession of psychological performance skills* and *Emotion/mood control* were identified as the most relevant challenges. This highlights the psychological demands of esports and the significance of developing psychological resilience among players. Accordingly, *Mentoring by coaches* and *Prioritisation skills* were the most appreciated, reinforcing the need for structured psychological support and skill development, as demonstrated in previous

studies (e.g., Hong, 2023, 2025; Leis et al., 2024; Pereira et al., 2021). In particular, researchers have increasingly highlighted the role of coaches and coaching in esports (e.g., Watson et al., 2022; Watson et al., 2024). For instance, Watson et al. (2024) highlighted the roles and responsibilities of coaches in enhancing the performance and development of players, teams, and the broader esports industry, emphasising the need for support and education. This finding indicates that to strengthening support systems for esports players should also involve providing broader support for key supporting staff members, such as coaches, whose mentoring role is significant.

Regarding gender difference, female participants identified *anxiety* as a more relevant challenge and expressed a preference for expert-led counselling sessions, highlighting the need for tailored psychological support for women in esports. Given the influence of cultural, political, and economic forces on esports players' psychological status (Zhao & Zhu, 2021), these findings highlight the need for a more thorough examination of these factors to guide the development of appropriate and sustainable support mechanism. Similarly, consistent with findings in the *Physical Wellbeing* domain, professional players reported significantly higher relevance for all psychological challenges and support systems, reinforcing the idea that psychological strain intensifies with competitive level. This finding supports the findings from previous studies, which identified a lack of psychological skills and vulnerability to mental health issues are key concerns among professional players (Bányai et al., 2019; Monteiro Pereira et al., 2023; Pereira et al., 2021; Smith et al., 2022).

Regarding *Social Wellbeing*, *Communications with other players* and *Communications with other support staff including coaches*, were identified as the most significant social barriers, highlighting the importance of effective interpersonal skills in esports. As such, *Communication skills development* and *Social medial skills training* were regarded as the most relevant support needs. This suggests that players recognise the significance of professional and public communication in esports. While research has shown that involvement in esports help participants develop a range of life skills, particularly communication skills (Tang, 2018), the findings of this study indicate that players still perceive communication as a challenge. This indicates that players may enhance their communication skills by addressing challenges with teammates, coaches, and fans through self-control and self-management manner (Hong & Connelly, 2022). While this approach can help players expand their abilities, develop different skill sets, and build resilience and independence, professional players, in particular, may require more structured support systems as their communication is directly associated with their performance, contracts, and reputation. These findings indicate that professional players perceived communication-related barriers and support systems as significantly more relevant, highlighting the importance of interpersonal and media management skills in professional esports. Addressing these challenges through tailored interventions could provide valuable support.

In terms of gender differences, female participants reported greater social barriers, particularly limited social support, discrimination (based on race/ethnicity, religion, and gender), and disability access issues. This suggests that structural barriers in esports pose greater challenges for marginalised groups. In this context, Rogstad (2022) examined existing research on gender in esports and identified three key themes that explain cultural gender disparities in the industry including the dominance of masculinity within esports environment, the presence of online harassment, and societal expectations based on gender. This study highlights that further research is required to promoting a more inclusive esports ecosystem, which would significantly benefit the industry. In this respect, Kordyaka et al. (2023) investigated gender disparity in esports applying an explanatory mix-methods approach. Their study found that female players exhibited higher levels of achievement motivation compared to their male counter parts. The researchers suggested that addressing female players' sense of personal control over outcomes requires a multifaceted approach involving game

design, community management, and in-game resources, which could enhance their motivation to engage in esports.

As for *Cultural Wellbeing*, *Career duration* and *Work-life balance* emerged as the most significant challenges, reflecting concerns about career longevity and the difficulty of balancing esports with personal life. Consequently, *Team-building activities* and *Language education support* were identified as valuable, indicating that social cohesion and international accessibility are key priorities for players. While performing at the highest competitive level creates opportunities for individuals to purpose esports as a legitimate career option (Huston et al., 2022), career longevity has been recognised as a significant concern, particularly for professional players, as it can lead to uncertainty, anxiety, and insecurity (Hong & Hong, 2023). Likewise, work-life balance has been identified as a key factor in sustaining a long-term career in esports (Akel et al., 2023; Hong & Connelly, 2022; Smith et al., 2019). While teaming building activities and language education are not directly linked to career longevity or work-life balance, they play a crucial role in promoting a supportive and productive environment that enables individual growth. As a result, such support can indirectly contribute to both career sustainability and a healthier work-life balance. The importance of team dynamics and language support has also been highlighted in previous studies (e.g., Hong, 2023). This is attributed to the global nature of esports, where international players come together to form a team, requiring strong team cohesion and language skills, especially in English.

In terms of gender differences, no significant gender-based differences were identified, suggesting that cultural wellbeing concerns are largely shared by both male and female players. As for career-level differences, professional players expressed significantly greater concerns about training environments, work-life balance, and career duration, indicating that esports careers become increasingly demanding at higher levels, consistent with findings in the other domains. They also found language education and team-building activities significantly more relevant, emphasising the need for structured career and lifestyle support. Regarding work-life balance, it is important to note that most esports participants, including professional players, are young and may need to balance their education and esports commitments. For instance, in Hong's (2023) study, a high-profile professional player who left education to pursue an esports career advised young players to continue their education, as it provides greater opportunities for life after esports. This is closely associated with *Career longevity*, as experienced professional players recognised that their time in esports is often short-lived (Smithies et al., 2020).

Regarding *Economic Wellbeing*, *Financial independence* and *Covering travel expenses* emerged as the most significant economic barriers, reflecting the financial instability in esports, particularly among lower-tier players. As a result, *Support around understanding esports contracts* and *Opportunities to be exposed to sponsors* were identified as the most valued support needs, highlighting the significance of financial literacy and sponsorship opportunities in the industry. While research on financial literacy and financial security among esports players remains limited, Hong and Hong (2023) demonstrated that financial insecurity was a key factor contributing to challenges during competitive careers and influencing retirement decisions among retired professional players. Given that many professional players started their careers at a young age, it is critical for them to develop financial literacy, including an understanding of esports contracts, and to learn how to build relationships with sponsors to secure funding for travel expenses, a key aspect of competing internationally.

In terms of gender differences, there were no significant differences identified, which indicates that financial challenges and support needs are widely shared among players. In terms of career-level differences, professional players reported significantly greater economic barriers, except for the need for external jobs to sustain themselves. This suggests that while professionals primarily depend on income from esports, they still face financial security, as evidenced in Hong and Hong's (2023)

study. Professional players identified sponsor exposure opportunities, financial planning tutorials, contract education, tax literacy, and income training as significantly more relevant, emphasising the need for structured financial education and sponsorship support. This aligns with findings on high-performance athletes, whose careers share similarities with professional esports players, including a short career span and early exclusive dedication to competition (Hong & Fraser, 2021).

Regarding *Governance Wellbeing*, the most significant governance-related challenges were *Opportunity for players' voices to be heard* and *Knowledge on how decisions on esports players' wellbeing and welfare are made*, highlighting a gap in player representation and transparency. Accordingly, the most valued governance-related support systems were *Support from esports stakeholders to help navigate local barriers to participation* and *Contact point to raise concerns with*. While governance-related challenges and barriers are critical to address, particularly for the continued growth of the industry and the development of sustainable career pathways, it is crucial to recognise that the industry itself also faces regulatory and governance challenges. Esports has emerged at the intersection of gaming culture, media systems, sport structures, investment, and regulation (Jin, 2010; Scholz, 2020), which makes its governance inherently complex. The complexity of governance in esports is intensified by its socially embedded nature that esports consumption as a collective activity involving multiple stakeholders occupying diverse roles within the broader ecosystem (Johnson & Woodcock, 2021; Seo & Jung, 2016). Peng et al. (2020) also pointed out that "the rising power of (emerging) stakeholders in the network seeking to address integrity issues has caused fragmentation of the esports governance framework" (p. 11).

Since governance related issues can have broader implications, such as affecting integrity in esports, addressing challenges in *Governance Wellbeing* is crucial, not only for players but also for the long-term sustainability of the industry. Strengthening governance in esports will, in turn, support the stability and longevity of players' career pathways. As for gender differences, female participants placed significantly greater importance on having a player representative to liaise with stakeholders, suggesting a need for more structured advocacy for women in sport. In this context, as leadership diversity has been widely recognised as a valuable goal for organisations, the esports industry can take further steps, such as diversifying leadership (Darvin et al., 2021), to address the lack of female representation. In terms of career-level differences, professional players indicated a significantly higher level of concern regarding governance and welfare-related decision-making. This indicates that they have a greater awareness of the significance of governance in esports, as it directly impacts their performance and careers, influencing key factors such as integrity, contracts, player rights, league/tournament regulations. However, no significant differences were found in governance support system needs across career levels, indicating a shared demand for a stronger and more structured governance framework.

4.1. Implications

The present study provides a broad perspective on esports players' wellbeing by applying the human wellbeing framework (Biedenweg et al., 2016) beyond physical and mental wellbeing. The development of an esports-specific questionnaire, grounded in a theoretical framework, was an innovative approach to identify challenges, barriers, and perceived support needs. Accordingly, the findings contribute to the body of knowledge in esports by providing insights into players' perceived challenges, barriers, and support system needs across all six domains of wellbeing. The findings clearly support and expand the existing knowledge that the difficulties faced by esports players span multiple dimensions, which reflects the complexity of their experience (Williams et al., 2025). By analysing the data to explore gender and career-level differences, this study highlights female players' perspectives on holistic wellbeing and their perceived needs, an area that has

been underrepresented in the literature. While previous studies have explored challenges and wellbeing needs of professional players, this study provides a more detailed and holistic perspective on their challenges, barriers, and perceived support needs. These insights can help key stakeholders, including professional teams, develop strategies to support high performance and long-term career sustainability in esports. Importantly, the findings highlight emerging concerns related nutrition intake, financial literacy, governance, and mentoring, reflecting the evolving landscape of esports.

The findings, which address comprehensive aspects of wellbeing, also suggest that wellbeing in esports aligns with the concept of eudaimonic wellbeing, a framework focused on leading a meaningful life and achieving self-fulfilment (Ryan & Deci, 2001). The present study highlights that participants viewed their identified challenges, barriers, and perceived support as critical to both their wellbeing and career prospects, contributing to their advancement and sustained involvement in esports. Their perspectives reflect a focus on personal growth and achievement, rather than a hedonic approach, which prioritises pleasure-seeking and the avoidance of discomfort (Kahneman, 1999).

In addition to its theoretical implications, the present study also offers practical implications. The findings across the six domains highlight the critical need for structured and tailored support systems to address the unique challenges and barriers in each domain. For instance, key stakeholders should prioritise providing structured financial education to help players develop financial literacy and management skills, workshops to enhance team dynamics and communications skills, and professional support for developing psychological skills. Moreover, creating opportunities for player representatives to participate in decision-making process, and organising engagement events to facilitate sponsorship opportunities are crucial steps towards building a more supportive and sustainable environment for esports players. Based on the findings, particularly from the *Governance Wellbeing* domain, policymakers and relevant governing bodies need to establish stronger governance frameworks that ensure player representation, transparency in decision-making, and accessible contact points for raising and discussing concerns. For coaches and support staff members, the focus should be on enhancing communication skills and mentoring, which are critical for improving both the social and psychological wellbeing of esports players. Lastly, a tailored esports training programme should be developed to include career planning and financial literacy, supporting players in building sustainable career pathways.

4.2. Limitations and future research direction

While this study makes clear contribution to both theory and practice, it has some limitations. The findings may have limited generalisability due to the predominantly male and Asian composition of the questionnaire sample. Future research should examine the challenges, barriers, and perceived support needs for holistic wellbeing across more diverse demographics to provide a broader and more inclusive understanding of the topic. In particular, while this study provides valuable insights from female players, their experiences, which differed in some respects from those of male participants, require further exploration. Future research could focus on key factors identified in this study, such as psychological and social wellbeing, to gain a deeper understanding of their challenges and support needs. Due to the scope of the study, the findings did not examine existing support systems for players. Such systems may have already addressed some of the concerns raised or may reveal gaps that still need to be filled. Thus, future research should explore this aspect further to identify gaps in practice and examine how these gaps can be address based on empirical evidence. While a quantitative approach effectively captured insights from a broad population on holistic wellbeing, it limited the ability to gain in-depth narratives of esports players' experiences. Therefore, future studies could adopt a qualitative approach to investigate the six domains of wellbeing in esports, providing deeper empirical insights that can help the industry

develop stronger support systems. In addition, due to insufficient discriminant validity among some factors, the questionnaire is not currently suitable for latent variable modelling, and latent model comparisons were therefore not performed. Instead, item-level analyses were used to compare group perceptions, ensuring that findings reflect observed rather than modelled relationships. Future research should refine and revalidate the questionnaire prior to latent modelling by revisiting item content and factor definitions and exploring intersections of physical, social, and environmental barriers.

5. Conclusions

As evidenced in the previous sections, this study makes a significant contribution to the body of knowledge and practice. The findings emphasise the importance of applying theories and frameworks beyond the specific subject area, esports, and present a comprehensive overview of challenges, barriers, and potential support systems. The developed questionnaire, as an original research tool, can be utilised in future studies, to further enhance our understanding of esports players' needs and support the development of more effective support systems. Through a comprehensive analysis, the findings highlight critical issues and concerns that stakeholders should recognise and address collectively. Young individuals involved in esports may have limited awareness of certain challenges, and these findings can serve as a valuable precautionary resource. It is hoped that esports industry stakeholders will prioritise players' wellbeing and sustainability of career pathways while ensuring that future support structures account for the diverse challenges players may encounter.

CRedit authorship contribution statement

Hee Jung Hong: Writing – review & editing, Writing – original draft, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Guy Wilkinson:** Writing – review & editing, Writing – original draft, Methodology, Investigation, Formal analysis, Data curation, Conceptualization.

Declaration of Generative AI and AI-assisted technologies in the writing process

During the preparation of this work, the authors used ChatGPT in order to check grammar and enhance clarity and readability. After using this tool/service, the authors reviewed and edited the content as needed and take full responsibility for the final publication.

Declaration of competing interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests:

Hee Jung Hong reports financial support was provided by International Olympic Committee. If there are other authors, they declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

We extend our sincere thanks to the participants for dedicating their time to this study and for sharing their invaluable insights. Their contributions made it possible to complete the study and deepened our understanding of esports players' wellbeing. We wish to acknowledge our colleagues for their support and encouragement throughout the research process. Our sincere gratitude also goes to the International Olympic Committee (IOC) Advanced Olympic Research Grant Programme for funding this study. Finally, we greatly appreciate the University of Stirling's APC support for this article.

Data availability

Data will be made available on request.

References

- Akel, S., Yigit, A. B., Yazicioğlu, Z.Ç., Özkan, Ş., & Uğurlu, Ü. (2023). A perspective at the daily routines of esports players: Life balance. *International Journal of Sport Culture and Science*, *11*(4), 302–314.
- Andrew, D. P., Pedersen, P. M., & McEvoy, C. D. (2019). *Research Methods and Design in Sport Management*. Human Kinetics Publishers.
- Bányai, F., Griffiths, M. D., Király, O., & Demetrovics, Z. (2019). The psychology of esports: A systematic literature review. *Journal of Gambling Studies*, *35*(2), 351–365.
- Bell, E., Harley, B., & Bryman, A. (2022). *Business Research Methods*. Oxford University Press.
- Benjamini, Y., & Hochberg, Y. (1995). Controlling the false discovery rate: a practical and powerful approach to multiple testing. *Journal of the Royal Statistical Society: Series B: Methodological*, *57*(1), 289–300.
- Biedenweg, K., Stiles, K., & Wellman, K. (2016). A holistic framework for identifying human wellbeing indicators for marine policy. *Marine Policy*, *64*, 31–37. <https://doi.org/10.1016/j.marpol.2015.11.002>
- Birch, P. D., Smith, M. J., Arumuham, A., de Gortari, A. O., & Sharpe, B. T. (2024). The prevalence of mental ill health in elite Counter-Strike athletes. *Journal of Electronic Gaming and Esports*, *2*(1), 1–19.
- Chan, G., Huo, Y., Kelly, S., Leung, J., Tisdale, C., & Gullo, M. (2022). The impact of eSports and online video gaming on lifestyle behaviours in youth: A systematic review. *Computers in Human Behavior*, *126*, Article 106974.
- Cranmer, E. E., Han, D. I. D., van Gisbergen, M., & Jung, T. (2021). Esports matrix: Structuring the esports research agenda. *Computers in Human Behavior*, *117*, Article 106671.
- Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.
- Darvin, L., Holden, J., Wells, J., & Baker, T. (2021). Breaking the glass monitor: Examining the underrepresentation of women in esports environments. *Sport Management Review*, *24*(3), 475–499.
- Deci, E. L., & Ryan, R. M. (2008). Hedonia, eudaimonia, and well-being: An introduction. *Journal of Happiness Studies*, *9*, 1–11.
- Diener, E., Helliwell, J., Lucas, R., & Schimmack, U. (2009). *Well-being for public policy*. USA: Oxford University Press.
- DiFrancisco-Donoghue, J., Balentine, J., Schmidt, G., & Zwiibel, H. (2019). Managing the health of the eSport athlete: An integrated health management model. *BMJ Open Sport & Exercise Medicine*, *5*(1), Article e000467. <https://doi.org/10.1136/bmjsem-2018-000467>
- Duffy, B., Smith, K., Terhanean, G., & Bremer, J. (2005). Comparing data from online and face-to-face surveys. *International Journal of Market Research*, *47*(6), 615–639.
- Eickhoff, E., Yung, K., Davis, D. L., Bishop, F., Klam, W. P., & Doan, A. P. (2015). Excessive video game use, sleep deprivation, and poor work performance among U.S. Marines treated in a military mental health clinic: a case series. *Military Medicine*, *180*(7), 839–843. <https://doi.org/10.7205/MILMED-D-14-00597>
- Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing*, *62*, 107–115.
- Etikan, I., Abubakar Musa, S., & Sunusi Alkassim, R. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, *5*(1), 1–4. <https://doi.org/10.11648/j.ajta.s.20160501.1>
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *18*(1), 39–50.
- Gee, J. P. (2008). Learning and games. In K. S. Tekinbas, (Ed.), *The ecology of games: Connecting youth, games, and learning* (pp. 21–40). MIT Press.
- Goulart, J. B., Aitken, L. S., Siddiqui, S., Cuevas, M., Cardenas, J., Beathard, K. M., & Riechman, S. E. (2023). Nutrition, lifestyle, and cognitive performance in esports athletes. *Frontiers in Nutrition*, *10*, 1120303.
- Hagerty, M. R., Cummins, R. A., Ferriss, A. L., Land, K., Michalos, A. C., Peterson, M., & Vogel, J. (2001). Quality of life indexes for national policy: Review and agenda for research. *Social Indicators Research*, *55*, 1–96. <https://doi.org/10.1023/A:1010811312332>
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2009). *Multivariate data analysis* (7th ed.). Prentice-Hall.
- Hong, H. J. (2023). eSports: the need for a structured support system for players. *European Sport Management Quarterly*, *23*(5), 1430–1453. <https://doi.org/10.1080/16184742.2022.2028876>
- Hong, H. J. (2025). Exploring stakeholders' perspectives on esports players' wellbeing and career prospects. *Computers in Human Behavior Reports*, *17*, Article 100589. <https://doi.org/10.1016/j.chbr.2025.100589>
- Hong, H. J., & Connelly, J. (2022). High e-Performance: esports players' coping skills and strategies. *International Journal of Esports*, *2*(2), 93. <https://www.ijesports.org/article/93/html>
- Hong, H. J., & Fraser, I. (2021). 'My sport won't pay the bills forever': High-performance athletes' need for financial literacy and self-management. *Journal of Risk and Financial Management*, *14*(7), 324.
- Hong, H. J., & Hong, S. H. (2023). Transitioning Out of Esports: Exploring the Experiences of Professional Esports Players in South Korea. *Journal of Electronic Gaming and Esports*, *1*(1), 7. <https://doi.org/10.1123/JEGE.2023-0008>

- Hong, H. J., & Wünsch, D. (2024). Esports Players. In S. E. Jenny, N. Besombes, T. Brock, A. C. Cote, & T. M. Scholz (Eds.), *Routledge Handbook of Esports* (pp. 167–177). Routledge. <https://doi.org/10.4324/9781003410591-19>. Routledge handbook of esports.
- Hoyt, L. T., Chase-Lansdale, P. L., McDade, T. W., & Adam, E. K. (2012). Positive youth, healthy adults: does positive well-being in adolescence predict better perceived health and fewer risky health behaviors in young adulthood? *Journal of Adolescent Health, 50*(1), 66–73.
- Hsu, H. Y., & Wang, S. (2010). The impact of using blogs on college students' reading comprehension and learning motivation. *Literacy Research & Instruction, 50*(1), 68–88.
- Hu, L. T., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. *Psychological Methods, 3* (4), 424.
- Huston, C., Gracia B Cruz, A., & Zoppos, E. (2022). Dimensionalizing esports consumption: Alternative journeys to professional play. *Journal of Consumer Culture, 22*(2), 456–475.
- Jin, D. Y. (2010). *Korea's online gaming empire*. The MIT Press.
- Jo, H., & Shin, S. A. (2024). Investigating viewer engagement in esports through motivation and attitudes toward metaverse and NFTs. *Scientific Reports, 14*(1), 19934.
- Johnson, M. R., & Woodcock, J. (2021). Work, play, and precariousness: An overview of the labour ecosystem of esports. *Media, Culture and Society, 43*(8), 1449–1465. <https://doi.org/10.1177/01634437211011555>
- Kahneman, D. (1999). *Well-being: The foundations of hedonic psychology*. Russell Sage Foundation.
- Kegelaers, J., Trotter, M. G., Watson, M., Pedraza-Ramirez, I., Bonilla, I., Wylleman, P., & Van Heel, M. (2024). Promoting mental health in esports. *Frontiers in Psychology, 15*, Article 1342220.
- Koipysheva, E. A., Lebedinsky, V. Y., & Koipysheva, M. A. (2018). Physical health: Definition, semantic content, and study prospects. *Social & Behavioural Sciences, 50*, 601–605. <https://doi.org/10.15405/epsbs.2018.12.73>
- Kordyaka, B., Pumplun, L., Brunnhofer, M., Kruse, B., & Laato, S. (2023). Gender disparities in esports—An explanatory mixed-methods approach. *Computers in Human Behavior, 149*, Article 107956.
- Kouali, D., Hall, C., & Pope, P. (2020). Measuring eudaimonic wellbeing in sport: Validation of the Eudaimonic Wellbeing in Sport Scale. *International Journal of Wellbeing, 10*(1), 93–106. <https://doi.org/10.5502/ijw.v10i1.776>
- Kyngäs, H., & Vanhanen, L. (1999). Content analysis (Finnish). *Hoitotiede, 11*, 3–12.
- Lee, S., Bonnar, D., Roane, B., Gradisar, M., Dunican, I. C., Lastella, M., & Suh, S. (2021). Sleep characteristics and mood of professional esports athletes: A multi-national study. *International Journal of Environmental Research and Public Health, 18*(2), 664.
- Leis, O., Sharpe, B. T., Pelikan, V., Fritsch, J., Nicholls, A. R., & Poulus, D. (2024). Stressors and coping strategies in esports: A systematic review. *International Review of Sport and Exercise Psychology, 1–31*.
- McGee, C., Ho, K., & Jenny, S. E. (2024). Esports ergonomics and injuries. In S. E. Jenny, N. Besombes, T. Brock, A. C. Cote, & T. M. Scholz (Eds.), *Routledge Handbook of Esports* (pp. 240–254). Routledge. <https://doi.org/10.4324/9781003410591-25>. Routledge handbook of esports.
- McGee, C., Hwu, M., Nicholson, L. L., & Ho, K. K. (2021). More than a game: musculoskeletal injuries and a key role for the physical therapist in Esports. *Journal of Orthopaedic & Sports Physical Therapy, 51*(9), 415–417.
- Monteiro Pereira, A., Bolling, C., Birch, P., Figueiredo, P., Verhagen, E., & Brito, J. (2023). Perspectives of eFootball players and staff members regarding the effects of esports on health: A qualitative study. *Sports Medicine - Open, 9*(1), 62.
- Monteiro Pereira, A., Costa, J. A., Verhagen, E., Figueiredo, P., & Brito, J. (2022). Associations between esports participation and health: A scoping review. *Sports Medicine, 52*(9), 2039–2060.
- Nunnally, J., & Bernstein, I. (1994). *Psychometric theory*. New York: McGraw-Hill.
- Palanichamy, T., Sharma, M. K., Sahu, M., & Kanchana, D. M. (2020). Influence of esports on stress: A systematic review. *Industrial Psychiatry Journal, 29*(2), 191–199.
- Patton, M. Q. (1999). Enhancing the Quality and Credibility of Qualitative Analysis. *Health Services Research, 34*, 1189–1208.
- Peng, Q., Dickson, G., Scelles, N., Grix, J., & Brannagan, P. M. (2020). Esports governance: Exploring stakeholder dynamics. *Sustainability, 12*(19), Article 8270.
- Pereira, A. M., Teques, P., Verhagen, E., Gouttebarge, V., Figueiredo, P., & Brito, J. (2021). Mental health symptoms in electronic football players. *BMJ Open Sport & Exercise Medicine, 7*(4), Article e001149.
- Polit, D. F., & Beck, C. T. (2012). *Nursing research: Principles and methods*. Philadelphia, PA: Lippincott Williams & Wilkins.
- Rath, T., & Harter, J. K. (2010). *Wellbeing: the five essential elements*. New York: Gallup Press.
- Rogstad, E. T. (2022). Gender in eSports research: a literature review. *European Journal for Sport and Society, 19*(3), 195–213.
- Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology, 52*(1), 141–166.
- Ryan, R. M., & Huta, V. (2009). Wellbeing as healthy functioning or wellness as happiness: The importance of eudaimonic thinking (response to the Kashdan et al. and Waterman discussion). *The Journal of Positive Psychology, 4*(3), 202–204.
- Ryan, R. M., Huta, V., & Deci, E. L. (2008). Living well: A self-determination theory perspective on eudaimonia. *Journal of Happiness Studies, 9*, 139–170.
- Scholz, T. M. (2020). Deciphering the world of eSports. *International Journal on Media Management, 22*(1), 1–12. <https://doi.org/10.1080/14241277.2020.1757808>
- Seo, Y. (2016). Professionalized consumption and identity transformations in the field of eSports. *Journal of Business Research, 69*(1), 264–272.
- Seo, Y., & Jung, S. U. (2016). Beyond solitary play in computer games: The social practices of eSports. *Journal of Consumer Culture, 16*(3), 635–655.
- Smith, M., Sharpe, B., Arumuham, A., & Birch, P. (2022). Examining the predictors of mental ill health in esports competitors. *Healthcare, 10*(4), 626. <https://doi.org/10.3390/healthcare10040626>
- Smith, M. J., Birch, P. D., & Bright, D. (2019). Identifying stressors and coping strategies of elite esports competitors. *International Journal of Gaming and Computer-Mediated Simulations, 11*(2), 22–39. <https://doi.org/10.4018/ijgms.2019040102>
- Smithies, T. D., Toth, A. J., Conroy, E., Ramsbottom, N., Kowal, M., & Campbell, M. J. (2020). Life after esports: A grand field challenge. *Frontiers in Psychology, 11*, 883. <https://doi.org/10.3389/fpsyg.2020.00883>
- Summers, J. K., Smith, L. M., Case, J. L., & Linthurst, R. A. (2012). A review of the elements of human well-being with an emphasis on the contribution of ecosystem services. *Ambio, 41*(4), 327–340. <https://doi.org/10.1007/s13280-012-0256-7>
- Tang, W. (2018). Understanding esports from the perspective of team dynamics. *The Sport Journal, 21*, 1–14.
- Taylor, T. L. (2012). *Raising the stakes: E-Sports and the professionalization of computer gaming*. MIT Press. <https://doi.org/10.7551/mitpress/8624.001.0001>
- Watson, M., Jenny, S. E., & Johnson, T. (2024). Esports Coaching. In S. E. Jenny, N. Besombes, T. Brock, A. C. Cote, & T. M. Scholz (Eds.), *Routledge handbook of esports* (pp. 203–213). Routledge.
- Watson, M., Smith, D., Fenton, J., Pedraza-Ramirez, I., Laborde, S., & Cronin, C. (2022). Introducing esports coaching to sport coaching (not as sport coaching). *Sports Coaching Review, 14*(2), 263–282.
- Wattanapisit, A., Wattanapisit, S., & Wongsiri, S. (2020). Public health perspectives on eSports. *Public Health Reports, 135*(3), 295–298.
- Williams, J. P., Johnson, M. R., & Kumar, V. (2025). A little bit like psychological torture: A grounded theory of the sociocultural challenges surrounding expertise development in an emerging esports ecosystem. *Games and Culture, , Article 15554120251319176*. <https://doi.org/10.1177/15554120251319176>
- World Health Organization. (8 October 2025). *Mental Health*. <https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response>.
- Zhao, Y., & Zhu, Y. (2021). Identity transformation, stigma power, and mental wellbeing of Chinese eSports professional players. *International Journal of Cultural Studies, 24* (3), 485–503.
- Zimmerman, E. (2008). Gaming literacy: Game design as a model for literacy in the twenty-first century. In B. Perron, & M. J. Wolf (Eds.), *The video game theory reader 2* (pp. 45–54). Routledge.