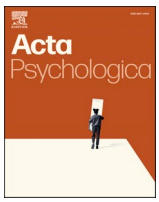
Acta Psychologica 260 (2025) 105632

Contents lists available at ScienceDirect

Acta Psychologica

journal homepage: www.elsevier.com/locate/actpsy



Deriving gamers' subjective well-being through satisfaction, cognitive, affective, and behavioral engagement: Symmetrical and asymmetrical approaches

Amir Zaib Abbasi [a], Muhammad Shahzeb Fayyaz [b], Ghazanfar Ali Abbasi [a,c], Raouf Ahmad Rather [a], Ali Hussain [d,*]

[a] IRC for Finance and Digital Economy, KFUPM Business School, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia
[b] Department of Marketing Strategy and Innovation, Sunway Business School, Sunway University, Sunway City, Selangor, Malaysia
[c] Department of Management & Marketing, KFUPM Business School, King Fahd University of Petroleum & Minerals, Dhahran, Saudi Arabia
[d] Hertfordshire Business School, University of Hertfordshire, Hatfield, UK

ARTICLE INFO

Keywords:
Gamer's satisfaction
Subjective well-being
eSports
Engagement

ABSTRACT

This study develops and tests the conceptual model by delineating eSports gamers' satisfaction as a pertinent driver of subjective well-being through the mediating role of gamers' cognitive, affective, and behavioral engagement using broaden-and-build theory. We collected data from 290 respondents in Malaysia and analyzed them through symmetric-based PLS-SEM and asymmetric-based fsQCA approaches. PLS-SEM-findings display that gamers' satisfaction and ensuing engagement have a positive significant relationship with gamers' subjective well-being. PLS-SEM-findings exhibit that cognitive, affective, and behavioral engagement of eSports gamers has significant mediating relationship between eSports gamer's satisfaction and their well-being. The fsQCA-findings ascertain six necessary conditions and four sufficient-combinations of factors to develop well-being. This research can aid marketers in understanding the eSports gamer's satisfaction in developing their cognitive, affective, and behavioral engagement and well-being. We enhance our research by combining both symmetric and asymmetric methodologies, resulting in significant consequences for both scholars and professionals.

1. Introduction

Electronic sports (eSports) have recently gained substantial interest from players (George & Ranjith, 2024), and it refers to video games assisted by computers, high-tech devices, or mobile-mediated interaction (Kong et al., 2024; Macey et al., 2022). It is a more popular and widely recognized sport with a large fan base (Kim et al., 2022). eSports can be characterized as a competitive video-gaming (Jo & Shin, 2024). Although video gaming and eSports share apparent similarities, they differ from each other. A video game refers to any game played through any means on any platform, whereas eSports is a gaming conducted on a competitive basis (Today, 2025). Whereas, eSports games can be played in the form of instant, cutthroat, tournament-led sports on platforms extending from personal computers to gaming consoles, such as Nintendo Switch and Microsoft Xbox (Hollebeek et al., 2022). eSports video games have been the most prevalent form of entertainment-oriented media for individuals of each gender and age. They are expected to generate a global revenue of $157.83bn and attract 271.88 million people worldwide by 2028, highlighting the rapid growth/development of the eSports industry (Chan et al., 2022; Statista, 2023). Despite the considerable advancement of the eSports gaming industry, relatively little is known about eSports gamers' satisfaction and their engagement with the eSports games (Shi et al., 2024; Teng et al., 2022), outlining a crucial research gap. Therefore, marketers/game developers need to recognize the eSports game-related factors that enhance players' relationships with the game provider and significantly contribute to their well-being, facilitating them to effectively meet their game-related needs or expectations (Formosa et al., 2022; Kim, 2021).

The COVID-19 pandemic has also produced serious global social, educational, and economic effects, and negatively affected the sports industry by distracting traditional sports (Goldman & Hedlund, 2020; Kim, 2021), Considering these facts, a rapid increase has been observed

* Corresponding author.
E-mail addresses: aamir.zaib.abbasi@gmail.com (A.Z. Abbasi), mshahzeb.fayaz@gmail.com (M.S. Fayyaz), ghazanfar.abbasi@hotmail.co.uk (G.A. Abbasi), r.raouf18@gmail.com (R.A. Rather), a.hussain37@herts.ac.uk (A. Hussain).

https://doi.org/10.1016/j.actpsy.2025.105632
Received 22 March 2025; Received in revised form 12 September 2025; Accepted 23 September 2025
Available online 13 October 2025

in the number of people shifting towards digital sports such as eSports, as an imminent prospect to fill the gap of traditional-live sports (Hamari & Sjöblom, 2017; Jiao et al., 2024; Sjöblom et al., 2020). eSports online gaming simulations have been streamed by a few firms as an alternative to live sports, especially FIFA to understand how eSports videogame playing affects the gamer's well-being, an essential outcome owing to the global COVID-19 outbreak (Barr & Copeland-Stewart, 2022; Boldi et al., 2022; Newman et al., 2022). Since individual mobility was limited by governmental regulations, video game consumption was considerably enhanced during that period (Shanley, 2020).

Based on the existing significant research gap related to eSports players' well-being, the present study intends to identify how eSports games impact players' well-being (Akoglu & Özbek, 2021; Li et al., 2023). Existing studies in a similar domain highlighted the potential relationships between violent video game content and aggression, including how eSports game consumption generates problematic gaming behavior in gamers (Limone et al., 2023). Numerous studies in gaming literature have also supported the arguments related to the benefits of eSports game playing for the players' interns. For example, various scholars stated that eSports can assist players in managing and dealing with psychological stressors (Hein et al., 2024; Pizzo et al., 2022), develop positive emotions, and enrich mood (Villani et al., 2018), increase life satisfaction (Mettler et al., 2020), promote positive relationships (Hollebeek et al., 2022), and generate word-of-mouth recommendations (Abbasi et al., 2021). Moreover, Raggiotto and Scarpi (2023) investigated the subjective well-being of eSports players through the psychological mechanism of sensation seeking and self-enhancement. Similarly, Abbasi, Khan, et al. (2023) examined the impact of videogame addiction through peripheral and core dimensions on players' subjective well-being within the eSports context. Likewise, Mechelin and Liu-Lastres (2025) explored the relationship between eSports spectators' positive experience, intrinsic motivation, and subjective well-being.

Another research analyzed the role of customer engagement in strengthening the positive effects of consumers' travel experience on their subjective well-being (So et al., 2024). Despite the increasing importance and worldwide recognition of eSports, the extant literature in this domain mainly emphasized problematic gaming and hedonic motivations such as enjoyment, as well as the negative and positive effects of videogame play on players' emotions, perceptions, behaviors, and attitudes outside the virtual world (Abbasi, Khan, et al., 2023; Macey & Hamari, 2018; Yadav et al., 2022). Although the existing studies offer valuable insights into this domain, they have largely neglected to investigate the psychological outcomes of eSports game playing, particularly subjective well-being. To respond to this inquiry, the present research intends to investigate the role of eSports gamers' satisfaction and engagement in shaping their psychological outcomes, such as subjective well-being. By examining the relationship among different study constructs, the current study provides a unique contribution by theoretically integrating broaden-and-build theory, while also offering valuable practical insights for eSports developers and marketers to design games that enrich players' experience and promote their well-being beyond mere enjoyment and entertainment.

Though eSports-based research has predominantly centered on media works, businesses, and sociology perspectives so far, scholastic research on the eSports context has started to emerge recently (Chan et al., 2022; Wang et al., 2022; Xiong & Li, 2024). eSports users are likely to be challenged to reach through conventional media, and few organizations employ eSports games to develop their customers' brand recognition, awareness, or usage intent/loyalty (Abbasi et al., 2021; Kim & Hall, 2021; Teng et al., 2022). Accordingly, eSports-based games have been growing in recognition, exposing the increasing strategic imperative and affirming additional research into this domain, hence explored here. Particularly, although customer engagement (hereafter, CE) has been revealed as a crucial predictor of consumption behaviors, like increased customer-perceived value, trust, word-of-mouth recommendations, and (re)purchase intention within different sectors and contexts (Pansari & Kumar, 2017; Rather et al., 2022), limited empirically-based insights exist about engagement's impact in the context of eSports. Given that, we develop the following research question: To what extent does gamers' satisfaction with eSports video games influence their cognitive, affective, and behavioral engagement, and how do these engagement dimensions impact their subjective well-being?

In the present research, we thus propose and test a conceptual model to investigate the impact of customers' (gamers) eSports game satisfaction on cognitive, affective, and behavioral engagement, and its consequential influence on their subjective well-being, thereby answering our delineated research gap (Formosa et al., 2022; Hollebeek et al., 2022). To explore the impact of gamers' satisfaction on their cognitive, affective, and behavioral engagement, as well as its subsequent influence on their well-being, we emphasize the strategic significance of these relationships within the eSports gaming context, a domain that remains underexplored (e.g. Teng et al., 2022; Türkay et al., 2023). Furthermore, there is a methodological gap in using both symmetric-based PLS-SEM and asymmetric-based fsQCA approaches, which are employed in this study to provide a comprehensive analysis of these relationships, enhancing the robustness of the findings.

Furthermore, rather than focusing solely on the individual roles of cognitive, affective, and behavioral engagement, we propose that gamers' satisfaction with eSports video games leads to their subjective well-being, with cognitive, affective, and behavioral engagement serving as mediators. While existing research offers preliminary insights into these relationships (e.g. Türkay et al., 2023), our study extends these findings by demonstrating how gamers' satisfaction and engagement contribute to their overall well-being. In doing so, we significantly advanced the growing body of literature on eSports gaming.

The current research yields various key contributions. First, there exists a dearth of prior studies on customers' eSports-based engagement and its resulting subjective well-being. We propose/test a conceptual framework and related set of hypotheses that facilitate clarifying the dynamics of gamers' satisfaction and engagement effect on well-being (Formosa et al., 2022; Hollebeek et al., 2022; Liu et al., 2022). Therefore, although past researchers have evaluated customer-based predictors for employing eSports games, like social (i.e., peer-to-peer), hedonic (i.e., escapism), and functional (i.e., informational)-motives and perceived value or emotions (Abbasi et al., 2022; Chan et al., 2022; Hollebeek et al., 2022; Kim, 2021), very little insight exists about the effect of satisfaction along with cognitive-, affective-, and behavioral- engagement roles in impacting eSports gamers' subjective well-being, as thus examined here. Further, whereas most of the previous eSports/gaming research spotlights Western contexts, understanding of non-Western customers' eSports-linked satisfaction, engagement, and well-being, which are anticipated to fluctuate among Western customers (Kim & Hall, 2021; Liu et al., 2022; Maduku et al., 2024; Pansari & Kumar, 2017), remains specifically fragile, as addressed also in this study through the examination of Pakistani customers' eSports-related dynamics, satisfaction, or behaviors. Relatedly, eSports development is continually increasing in Asian countries, including Pakistan (Hollebeek et al., 2022).

Second, apart from symmetric-based PLS-SEM to attain productive understanding, we adopted asymmetric-based fuzzy-set-qualitative-comparative-analysis (fsQCA) and necessary- condition-analysis (NCA) to identify necessary and sufficient conditions (combinations) of our study constructs such as satisfaction and CE-dimensions on a desired outcome, i.e., subjective well-being (Pappas & Woodside, 2021; Ragin, 2008). With the application of fsQCA, we have identified sufficient and necessary conditions to envisage gamers' well-being.

Third, we generate key theoretical- and practical implications following our findings. Theoretically, this research predominantly extends eSports/gaming-led literature by investigating the impact of customers' eSports video-game satisfaction and engagement in developing

subjective well-being. We also contribute to customer engagement literature via its comparatively new relevance towards eSports (online) gaming environment, thereby improving extant customer engagement-led knowledge (Jo & Shin, 2024).

Practically, the study findings corroborate gamers' satisfaction effect on engagement and subsequent well-being, necessitating engagement's tactical importance for eSports marketers. For instance, study findings might facilitate eSports gaming developers and marketers to (re)design their video games for advanced engagement, considering their acknowledged strategic value and anticipated useful results in the present research. Furthermore, our fsQCA results can also assist practitioners and videogame developers with new insights to identify various necessary and sufficient conditions of satisfaction and CE dimensions for predicting the anticipated outcome i.e. eSports gamers' subjective well-being.

2. Theoretical background

2.1. Underpinning theory – the broaden-and-build theory

The broaden-and-build-informed theory, proposed by Fredrickson (1998) and further elaborated in subsequent works (Fredrickson, 2001; Fredrickson, 2004), posits that positive emotions facilitate the expansion of momentary thought-action repertoires and the accumulation of enduring personal resources. In line with this theory, positive emotions are viewed as catalysts for the development of resources (e.g., cognitive, affective, behavioral, physical, intellectual, and social resources; Johnson et al., 2021), which in turn help in predicting behavioral outcomes (e.g., psychological wellbeing, loyalty, and life satisfaction; Kim, 2021; Xiang & Yuan, 2021).

The broaden-and-build theory has been used in several contexts such as the workplace (Johnson et al., 2021), tourism (Mashkoor & Muhammad, 2024), ICT users (Sriwidharmanely et al., 2022), organizational and individual behavioral outcomes (Yang et al., 2023), small enterprises (Paramita et al., 2022), and consumer psychological well-being in videogames (Kim, 2021). However, its applicability in eSports settings remains unknown, which is the focus of this research.

In the context of eSports, broaden-and-build-informed theory recommends that positive emotions (like, satisfaction with eSports-related gaming experience) in eSports not only expand momentary thought-action repertoires (e.g., in terms of cognitive, affective, and behavioral engagement states) but also contribute to the enhancement of subjective well-being. It is worth noting that eSports gamers' satisfaction with their gaming experience acts as a key source of positive emotions, aligning with the principles of the broaden-and-build theory. Satisfied eSports customers are expected to experience positive affect, which, as per theory, can lead to eSports videogame engagement states encompassing affective, cognitive, and behavioral, which ultimately contribute to subjective well-being.

3. Conceptual framework and development of hypotheses

3.1. Gamer's satisfaction and eSports engagement

Videogame engagement implies the process of gamers reaching out to the game, illustrated in their emotional, behavioral, cognitive, social, and sensorial behavior (Laffan et al., 2016). In a broader perspective of marketing and information technology, customer engagement refers to a psychological process or state of mind that elevates customer loyalty (Brodie et al., 2011; Muruganantham & Kumar, 2025). Van Doorn et al. (2010) proposed a comprehensive framework that proposed the antecedents, elements, and consequences of user engagement. However, the present study indicates that customer satisfaction is a pivotal antecedent of customer engagement (Gupta & Mukherjee, 2025). In the eSports online gaming context, gamers' satisfaction is regarded as a fundamental element within game usage behavior (Bányai et al., 2019; Ribeiro et al., 2023). Game satisfaction can facilitate gamers' time and place when interacting and collaborating with other players in a virtual gaming environment (Shi et al., 2024). This notion can be explained by the ability of eSports online games to augment gamers' feelings of absorption, immersion, and flow.

Moreover, according to the broaden-and-build theory of positive emotions (Fredrickson, 2001), positive emotions promote adaptability and facilitate the development of lasting resources during human evolution. In the context of eSports, satisfaction, a key positive emotion, serves as a catalyst for deeper cognitive, affective, and behavioral engagement. Cognitively, satisfaction enhances players' focus and strategic thinking, enabling them to approach challenges with a growth mindset. Affectively, it fosters stronger emotional attachment to the game, teammates, or fan community, leading to greater emotional investment and loyalty. Behaviorally, satisfaction motivates continued participation, such as practicing, collaborating with others, and engaging in community events or tournaments. By broadening perspectives and reinforcing positive experiences, satisfaction supports the development of meaningful social connections and long-term engagement in eSports environments. Therefore, this preceding discussion informs the subsequent hypotheses:

H1-H3. Gamers' satisfaction with eSports games is positively related to their cognitive engagement (HI), affective engagement (H2) and behavioral engagement (H3).

3.2. Cognitive engagement and subjective well-being

Magdy and Hassan (2025) and Abbasi et al. (2021) define cognitive engagement as a situation in which users become highly focused and interested/immersed in any activity. In an eSports setting, cognitive engagement is classified as what users know, and understand, and how they make sense of an activity (absorption), and its potential development (Abbasi et al., 2025; Qian et al., 2022). Engagement is considered a central antecedent of consumers' subjective well-being. For instance, Cleveland et al. (2023) argued that cognitive engagement with social networking sites has many positive consequences, including subjective well-being. Numerous prior studies have highlighted that when online eSports game users engage in various online activities (playing, watching, and supporting teams), they feel more absorbed and experience positive effects (e.g., mental well-being and social). According to the broaden-and-build theory, such engagement fosters flexible thinking, openness to new experiences, and the development of psychological assets, including resilience, self-efficacy, and purpose. In addition, Raggiotto and Scarpi (2022) concluded that cognitively engaging games, particularly those involving strategy and cooperation enhance executive functioning and emotional regulation, all of which are foundational to subjective well-being. Moreover, positive cognitive-emotional states fostered through gaming have been shown to promote adaptive coping and goal-directed behavior. Malik and Pradhan (2025) reinforce the notion that cognitive engagement in gaming is not merely recreational but psychologically enriching. These findings align with the broaden-and-build framework, wherein repeated experiences of positive engagement build psychological capital that supports long-term well-being. Following this, we proposed the next hypotheses:

H4. Gamers' cognitive engagement with eSports games is positively related to their subjective well-being.

3.3. Affective engagement and subjective well-being

In the digital eSports game settings, affective engagement is stated as users' emotional involvement in a digital game environment (Hollebeek et al., 2014; Zhao & Ma, 2025). Within a similar context, Abbasi et al. (2021) conceptualized affective engagement as users' game-related dedication and enthusiasm. This psychological state of gamers is anticipated to elucidate about greater involvement, including time spent,

frequency, and game participation. Similarly, in our context, eSports game users' affective engagement in the gaming world will generate gamer's positive behavioral outcomes (e.g., gratification, happiness; Kim & Kim, 2020). Based on the broaden-and-build theory, affective engagement can have a significant impact on gamers' subjective well-being. For instance, Lo et al. (2025) mentioned that positive emotional experiences during gaming, such as emotional satisfaction, broaden individuals' momentary thought–action repertoires and help build enduring psychological resources like optimism, resilience, and social connectedness. In eSports environments, Abbasi, Khan, et al. (2023) elaborated that where players often experience intense emotional highs and meaningful social interactions, affective engagement becomes a conduit for building emotional resilience and subjective well-being. These emotionally rewarding experiences encourage sustained participation and deepen psychological investment, consistent with the broaden-and-build framework. Thus, we infer that:

H5. Gamers' affective engagement with eSports games is positively related to their subjective well-being.

3.4. Behavioral engagement and subjective well-being

A player's behavioral engagement in the eSports context refers to the amount of cognitive and behavioral resources that are invested in the game interaction (Abbasi et al., 2021; Akhtar et al., 2024). Given the significant positive effect of behavioral components in customer engagement including positive experiences and well-being, an array of research mainly emphasized highlighting the characteristics directly and indirectly related to behavioral engagement (Weingarden et al., 2023). eSports gaming also facilitates players in meeting their social needs, such as competition, socializing, teamwork, companionship, and relationship building along with cognitive, emotional, and behavioral needs (Bowden et al., 2017; Guo et al., 2024). After the rapid growth of the services paradigm in the online eSports gaming industry, socially interactive features became more pertinent in developing players' behavioral engagement in a particular game (Hussain et al., 2023; Hussain, Mirza, et al., 2025). For instance, Poulus et al. (2023) suggested that positive behavioral involvement in eSports games, such as goal-directed play, cooperative interaction, and sustained effort, broadens individuals' behavioral repertoires and contributes to the development of psychological and social resources. Pang et al. (2025) illustrate that behavioral engagement reflects not only gameplay intensity but also commitment to goals, collaboration with peers, and pursuit of mastery. These behaviors cultivate a sense of achievement, belonging, and purpose, key psychological assets that align with the broaden-and-build framework and contribute to subjective well-being. Hence, we hypothesize that:

H6. Gamers' behavioral engagement with eSports games is positively related to their subjective well-being.

3.5. The mediating role of gamers' eSports engagement states between satisfaction and SWB

eSports gamers' engagement is an invaluable source in understanding gamers' thoughts, feelings, and online game usage behavior, resulting in their positive behavioral outcome, i.e., subjective well-being, because players spend an innumerable amount of time daily in a virtual gaming world watching, interacting, and playing different games. Prior studies related to marketing and information technology conceptualized customer engagement as a multidimensional factor having affective, cognitive, and behavioral engagement as sub-dimensions (Abbasi et al., 2021; Rather et al., 2023). Past research posited that satisfied users who have positive brand experiences are more willing to cognitively engage with social-media-brand-communities (Ma et al., 2022). The reason for this cognitive engagement is that users assess the product functionality and check the latest product updates based on the available information, which makes them satisfied and cognitively engage with the product (Brodie et al., 2011; Hollebeek & Macky, 2019).

In an online game setting, hardcore gamers keep themselves updated and pay more attention to game-related information and updates, such as new maps, avatars, etc., because they rely heavily on it, to make their gaming experience more joyful (Balakrishnan & Griffiths, 2018; Orelj & Torfason, 2022). Prior studies illustrated that satisfied customers also develop emotional and affective feelings towards products and services (Li et al., 2024). In the eSports gaming domain, eSports online games follow various strategies (e.g., virtual teams, virtual celebrities, and badges) that arouse gamers' affective and emotional game interaction. Most eSports gamers are involved in the online gaming world to satisfy their social need by developing enduring relationships (Hussain et al., 2024; Hussain, Hollebeek, et al., 2025). After the growth of social gaming elements, game developers emphasized mainly on behavioral engagement of the players through different ways, like gaming partners, virtual friends, sharing ideas, helping others in the game, and providing in-game feedback (Liao et al., 2020; Meng et al., 2015).

Precedent research postulated that customer satisfaction is fundamental for customer engagement and is developed through customer satisfaction/emotional relationship with the product (Yen et al., 2020). Abror et al. (2020) investigated the direct and indirect effects of customer engagement on customer loyalty and satisfaction, and revealed that higher engagement develops higher satisfaction with resultant consequences, including electronic word-of-mouth and users' continuous intention of product usage. Similarly, Lance et al. (1989) and Teeroovengadum et al. (2023) indicated towards the bottom-up spill-over satisfaction model, describing the spillover effect of satisfaction on subjective well-being. Therefore, the mediating roles of eSports gamers' engagement states (i.e., cognitive, affective, and behavioral) between gamer satisfaction and their subjective well-being need to be explored to gain insights into their relationship. Hence, the following proposed hypotheses are:

H7. Gamers' eSports cognitive engagement mediates the association relating to game satisfaction and subjective well-being.

H8. Gamers' eSports affective engagement mediates the association relating to game satisfaction and subjective well-being.

H9. Gamers' eSports behavioral engagement mediates the association relating to game satisfaction and subjective well-being.

4. Methodology

4.1. Study instrument, sample, and data collection procedure

This study adopted a quantitative approach and empirically investigates the proposed modeled relationship. The questionnaire was used for collecting data, which consisted of two stages. The first stage comprises the participant's socio-demographic (i.e., gender, age, and education) and psychographic profiles (i.e., frequency of video-game play, type of game played, place of game playing, and common platforms). The second stage contains items related to our constructs - affective, cognitive, and behavioral-engagement (Abbasi et al., 2019; Abbasi et al., 2021) along with customer satisfaction and subjective well-being. Affective, cognitive, and behavioral-engagement are taken as second (higher) order formative factors, and each of them has two first-order-reflective-factors (i.e., absorption/conscious attention in the case of cognitive engagement).

The items gauging conscious attention and absorption were adapted from the studies of (Abbasi et al., 2019; Abbasi et al., 2021), having a sample statement "*I like knowing more about the video game*". Items measuring dedication and enthusiasm as a first-order reflective constructs of affective engagement were also adapted from the above-cited authors, along with the sample item of "*This video-game inspires me*", "I

spend a lot of my discretionary time playing this video-game". A behavioral engagement having two first-order-reflective-factors, i.e., social connection and interaction, was measured by deploying items from (Abbasi et al., 2019; Abbasi et al., 2021) with a sample item of each construct: "*I love playing this video game with my friends*", "I enjoy playing this video game with other like-minded video-game players". Items measuring customer satisfaction were modified from (Shi & Liao, 2017) with a sample item of *"I am satisfied with my eSports gaming consumption experience,"* and subjective well-being was gauged by deploying a 4-items scale from (Abbasi et al., 2021) with a sample item of "*Playing this video-game makes me feel happy*". A five-point Likert scale (i.e., 1 = strongly disagree to 5 = strongly agree) was assessed to measure our items (Vagias, 2006). Table 1 shows the respondents' socio-demographic and psychographic profiles.

To empirically test the study's model, this investigation opted for the cross-sectional survey design to collect data from Malaysian eSports gamers. The strategy was utilized to collect data in a single session and is thought to be more effective than the longitudinal approach (Gay et al., 2011). Using the randomizer tool, we chose three different Malaysian universities. The randomizer tool was used to generate a random list of universities, from which we selected the three highest-ranked colleges based on our input. We picked potential eSports players at each Malaysian institution, including University Sains Malaysia (USM), University Technology Petronas (UTP), and University Utara Malaysia, using purposive sampling (Campbell et al., 2020). Professional eSports gamers often continue their university education alongside their gaming careers. This is why we connected with them at universities. Moreover, many universities host eSports tournaments where these gamers participate, competing for prize money.

Participants enrolled in the university's undergraduate and foundational programs, aged 18 to 25, were carefully selected for their active participation in eSports gaming, with at least one game each week, as shown in Table 1. The specific age range (18–25) was chosen since they are the most technologically adept generation in society (Abbasi, Alqahtani, et al., 2023), and eSports typically capture Generation Z gamers. The majority of persons in this age group desire to pursue professional eSports gaming as a job rather than as a hobby or recreational activity (Scholz & Vyugina, 2019).

We visited the selected universities to obtain a calendar of continuing sessions, particularly in the tourism and management programs at USM and the management and information systems programs at UUM and UTP. We asked the lecturer to grant us fifteen minutes to collect data before the session concluded. After gaining permission, we explained the research goal and posed various filter questions from the students, such as "How many people here play eSports games?" and "How many people here play eSports games at least once a week?" in addition to alternatives for daily and occasional weekly play (see Table 1). Individuals who replied affirmatively and met the requirement of playing at least once a week were eligible to participate in the research and were given the full survey.

To determine the minimum sample size for data collection, we used G*Power software Faul et al. (2007) with the specified input parameters: α err prob. = 5 %, power = 95 %, effect size = 0.15, and no. of predictors = 3. The minimum required sample size was 119 for the PLS-SEM technique, but we collected more to generalize our findings. A total of 360 questionnaires were distributed, with 328 responses returned. After carefully reviewing 328 surveys, we deleted 38 responses due to inaccuracies and inadequate information, such as respondents answering in a straight, diagonal, zigzag, or any other specific pattern (Abbasi et al., 2021; Hair Jr et al., 2016). As a result, the study's ultimate sample size was 290. Table 1 provides a comprehensive overview of eSports gamers' profiles.

Table 1
eSports gamers' profile.

Gender	**%**
Male	35
Female	65
Age	
18 to 20 years	41
21 to 25 years	59
Education	
Foundation-Level	30
Undergraduate	70
Device (multi-response coding)	
Personal-Computer	48
Dedicated Gaming-Consoles	8
Smartphone	78
Wireless-Device	6
eSports-Gaming-Brands (multi-response coding)	
League-of-legends	45
Dota2	47
Counter-Strike 1.6	60
Call-of-Duty-MW3	32
Heroe- of-Newerth	23
Counter-Strike-Source	21
Call-of-duty black ops	26
Streetfighter	34
Counter-Strike global offensive	49
FIFA-Series	39
Gaming-Place (multi-response coding)	
Home	91
Friend's place	10
Cybercafe	10
Gaming-Frequency	
Everyday	19
A few times per week	52
Once a week	29
Gaming-Activity	
1 to 4 h	86
5 to 8 h	10
9 to 12 h	2
> 12 h	2

5. Data analysis and results

We employed partial least squares path modeling (PLS-PM), a variance-based structural- equation-modeling approach (Sarstedt et al., 2021). PLS-PM was chosen for this investigation for a variety of reasons. First, PLS-PM is deemed an acceptable technique for prediction-focused investigations (e.g., prediction of satisfaction, cognitive, affective, and behavioral engagement on gamer's subjective well-being). Second, PLS-PM is a suitable empirical method for evaluating and quantifying complicated structural correlations between components, (i.e., direct/indirect relationships) (Yang et al., 2021). Third, PLS-PM is appropriate for research works involving reflective and formative constructs, such as the current study. SmartPLS 4 software was utilized for the PLS-PM to test the study model and analyze the relationships between our constructs.

Our analysis took place in two phases. In phase one, we applied PLS-PM. PLS-PM analyses further involve two steps including the validation of measurement model and structural model. Once researchers have validated the measurement model, they can move to conclude the proposed hypotheses in structural model assessment (Hair et al., 2019). In the phase two, we used fsQCA software (Ragin, 2008). The fsQCA acts as a configurational approach that assimilates and relies on logical principles along with a fuzzy set through qualitative-comparative analysis (QCA). The application of fsQCA adds value to unearth the intricate and complicated associations among the study factors. Due to its usefulness, it has been widely applied in topics like entrepreneurship, marketing and tourism, big-data analysis, finance, and healthcare (Seyfi et al., 2024). The process of fsQCA analysis consists of three stages starting from data calibration, followed by sufficiency analyses, and leading to the necessary conditions analysis (NCA).

5.1. Findings from the symmetrical analysis: evaluation of measurement-model-1st order reflective constructs

The study framework shown in (Fig. 1) exhibited that the study model contains three second-order formative constructs, i.e., cognitive, affective, and behavioral customer engagement, each of them having two-first-order reflective constructs. The first-two order reflective constructs of cognitive engagement are (conscious attention and absorption), affective engagement (enthusiasm and dedication), and behavioral engagement (social connection and interaction) as first-order reflective constructs (Abbasi et al., 2019; Abbasi et al., 2021) Affective, cognitive, and behavioral-engagement are taken as mediating factors between customer satisfaction and subjective well-being in this study. Based on the study framework, we evaluate the reliability/validity of our first-order-reflective factors.

5.2. Construct reliability

To validate our lower-order model, the authors started with the usual practice of investigating reliability. In this research, we relied on composite reliability (CR). To achieve a satisfactory CR score, we used the threshold suggested by Hair et al. (2019), i.e. CR $\geq$ 0.7. The findings in Table 2 confirm that all the studied factors have accomplished satisfactory reliability scores.

5.3. Convergent validity

Similarly, once the construct is reliable, the next step enables us to investigate convergent validity. We examined convergent validity was via factor-loadings (λ) and average-variance-extracted (AVE). As suggested by Hair et al. (2019) convergent validity of a construct will be achieved if the factor loading of a variable is more than 0.6 and the AVE value is more than or equal to 0.5. Table 2 suggests that our lower model constituting several constructs has been validated.

5.4. Discriminant validity

Two criteria for determining discriminant validity are cross-loadings and Fornell and Larcker criterion. Recent criticisms of each of these tests prompted Henseler et al. (2015), suggesting to employ hetrotrait-monotrait (HTMT) ratios to establish discriminant validity. Table 3 displays that all of the HTMT values were less than the most restricted criteria of 0.85, indicating that the study constructs have achieved discriminant validity.

5.5. Evaluation of the measurement-model- 2nd order formative constructs

We adopted a two-stage approach by Becker et al. (2012) to generate second-order-formative-construct (i.e., affective, cognitive, and behavioral) dimensions. Firstly, first-order-reflective factors of latent-variable scores were estimated and used as indicators for modeling the second-order-formative factors. Secondly, for examining second-order-formative-factors validity, we measure variance-inflation-factors or (VIFs) whose value should be below 5 or 3.3 (Sarstedt et al., 2019). Along with VIF, we have evaluated the significance levels and indicator weights of all our second-order formative constructs to consider their reliability and validity (Hair et al., 2017; Sarstedt et al., 2019). Table 4 demonstrates that VIF scores of all second-order-constructs are below 5, indicating no issue of multicollinearity. Additionally, indicator weights/significance levels of second-order-constructs are also exhibited in Table 4.

5.6. Evaluation of structural-model

After the evaluation of measurement-model, we tested the proposed

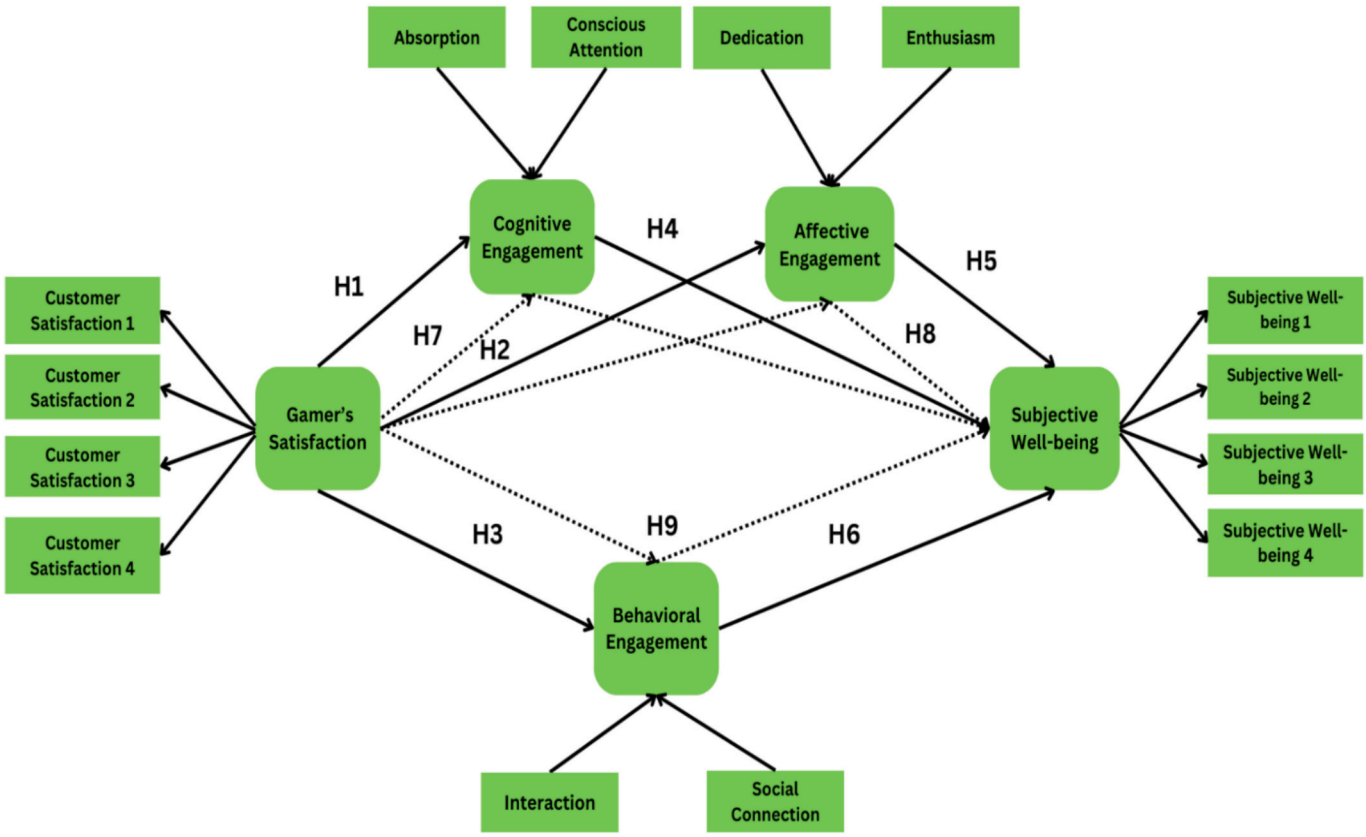


Fig. 1. Conceptual framework of the study.

Table 2
Estimating the reflective measurement model.

Main Constructs	*Construct Items*	*Λ*	*CR*	*AVE*
Consumer satisfaction	Consumersatisfaction1	0.758	0.861	0.554
	Consumersatisfaction2	0.804		
	Consumersatisfaction3	0.673		
	Consumersatisfaction4	0.730		
	Consumersatisfaction5	0.750		
Conscious attention	Consciousattention2	0.783	0.924	0.671
	Consciousattention3	0.804		
	Consciousattention4	0.884		
	Consciousattention5	0.836		
	Consciousattention6	0.816		
	Consciousattention7	0.787		
Absorption	Absorption1	0.700	0.878	0.593
	Absorption2	0.654		
	Absorption3	0.831		
	Absorption5	0.838		
	Absorption6	0.810		
Dedication	Dedication2	0.854	0.907	0.662
	Dedication3	0.821		
	Dedication4	0.848		
	Dedication5	0.794		
	Dedication7	0.746		
Enthusiasm	Enthusiasm1	0.831	0.903	0.652
	Enthusiasm2	0.835		
	Enthusiasm3	0.868		
	Enthusiasm5	0.726		
	Enthusiasm6	0.767		
Social connection	Socialconnection1	0.897	0.927	0.809
	Socialconnection2	0.921		
	Socialconnection3	0.879		
Interaction	Interaction1	0.493	0.894	0.635
	Interaction2	0.851		
	Interaction3	0.877		
	Interaction4	0.900		
	Interaction5	0.794		
Subjective-wellbeing	Subjectivewellbeing1	0.895	0.916	0.733
	Subjectivewellbeing2	0.846		
	Subjectivewellbeing3	0.835		
	Subjectivewellbeing4	0.846		

Note: λ: factor loadings; CR: Composite Reliability; AVE: Average Variance Extracted.

hypothesis by performing bootstrapping 5000 samples to investigate path-coefficient, t-value, effect size, and *p*-value (Jeon et al., 2019). Table 5 illustrates that customer satisfaction has a positive association with cognitive, affective, and behavioral engagement. Thus, leading to the acceptance of H1, H2, and H3. Similarly, cognitive and effective engagement is also positively related to gamers' subjective well-being, resulting in the acceptance of H4 and H5. Behavioral engagement is positively related to subjective well-being, but the effect size is very low, i.e., 0.01, which is smaller than the weak effect size, i.e., 0.02 (Hair et al., 2019) hence, resulting in the rejection of H6. We have also calculated the R^2 (variance explained by exogenous variable on the endogenous variable) and Q^2 values (assessment of predictive-accuracy) for the dependent variable, i.e., subjective well-being, showing the explanatory and predictive nature of the study model (see Table 5).

5.7. Assessment of the mediating effect

The current study has taken cognitive, affective, and behavioral engagement states as mediating constructs between customer satisfaction and subjective well-being. The segmentation mediation method has been adopted in this study and mediation analysis was performed by checking mediating effects (H7, H8, and H9) through the indirect effect approach suggested by (Preacher & Hayes, 2008). Results reveal that cognitive, affective, and behavioral engagement has a significant indirect effect on customer satisfaction and subjective well-being. Therefore H7, H8, and H9 are accepted as exhibited in Table 6.

5.8. Findings from asymmetrical analysis-sufficiency analysis

For subjective well-being, the sufficiency analyses in fsQCA

Table 4
Validity-tests-second-order formative constructs.

Second-Order Formative Constructs	Items	Indicator Weights	T Statistics (|O/STDEV|)	*P* Values	VIF
Cognitive Engagement	Absorption	0.443	4.046	0	1.429
	Conscious Attention	0.686	7.228	0	1.429
Affective Engagement	Dedication	0.682	8.3	0	1.792
	Enthusiasm	0.407	4.448	0	1.792
Behavioral Engagement	Interaction	0.78	9.375	0	1.471
	Social Connection	0.324	3.097	0.001	1.471

Table 5
Structural model assessment.

Hypothesis	β	T-statistics	*P*-values	f^2	R^2	Q^2
H1: Customer Satisfaction - > Cognitive Engagement	0.326	5.4	0	0.12		
H2: Customer Satisfaction - > Affective Engagement	0.41	7.646	0	0.20		
H3: Customer Satisfaction - > Bahavioral Engagement	0.401	7.113	0	0.19	0.107	0.073
H4: Cognitive Engagement - > Subjective Wellbeing	0.168	2.353	0.009	0.02	0.168	0.133
H5: Affective Engagement - > Subjective Wellbeing	0.42	5.693	0	0.10	0.161	0.117
H6: Bahavioral Engagement - > Subjective Wellbeing	0.122	1.779	0.038	0.01	0.427	0.307

Note: β Path-coefficient; f^2: effect size; Q^2: Predictive Relevance.

Table 3
Discriminant validity (HTMT) analysis.

	Ab	*Cs_att*	*Dedi*	*Enth*	*Inter*	*Satis*	*SocConn*	*SW*
Absorption								
Cs_attention	0.613							
Dedication	0.647	0.800						
Enthusiasm	0.651	0.723	0.765					
Interaction	0.444	0.702	0.712	0.724				
Satisfaction	0.220	0.363	0.437	0.375	0.445			
Social_connection	0.342	0.532	0.503	0.463	0.639	0.316		
Subjective-Well-being	0.554	0.573	0.682	0.638	0.550	0.304	0.468	

Table 6
Assessment of the mediating effect.

Indirect Effects	B	Standard Deviation	T-Statistics	P-Values	CI_{LL}	CI_{UL}
H7: Customer Satisfaction -> Cognitive -> Subjective Well-being	0.055	0.027	2.06	0.02	0.015	0.101
H8: Customer Satisfaction -> Affective -> Subjective Well-being	0.172	0.038	4.49	0	0.114	0.241
H9: Customer Satisfaction -> Behavioral -> Subjective Well-being	0.049	0.029	1.674	0.047	0.002	0.098

Note: β: Path-coefficient; CI_{LL}: Confidence Interval Lower Limit-5 %; CI_{UL}: Confidence Interval Upper Limit-95 %.

unearthed some causal configurations; please see Table 7 for details. Based on an estimate of a complicated combination of four conditions leading to subjective well-being as an outcome, fsQCA results show that the configurations were enough to anticipate high- and low-study outcomes (Table 7). fsQCA found four solutions. This study uses Boolean algorithm intermediate solutions (Table 7). We used two criteria to evaluate the configurations, i.e., coverage and consistency, with minimum values of 0.8 and 0.2, respectively. Both these criteria are similar to correlation and path coefficient as per net effect modeling (Ali et al., 2023). Each intermediate solution used coverage and consistency, with satisfactory upper-limit values (i.e., > 0.2 and 0.8) for coefficient-of-determination and correlation correspondingly (Ragin, 2008). Thus, overall solution-consistency (0.909) shows how the four causal-route factors add to a higher degree of subjective well-being. The total solution coverage (0.836) reflects the likelihood that the four causal recipes may predict high subjective well-being. Combinations connected by "*" are appropriate for the suggested conclusion, whereas ""implies that the fuzzy set requirement was lacking (negative).

According to fsQCA's causal recipes, a user's subjective well-being can be caused by the lack or presence of a certain set of factors. Table 7 reveals four causal recipes to envisage a highly desired result, meaning high subjective well-being, the mix of the proper cognitive, emotional, behavioral, and satisfaction aspects to create a specific response. Users would have a higher outcome when they perceive greater CE and AE (see also, Model 1). In Model 2, the presence of BE and the lack of AE and CE result in increased subjective well-being. Model 3 illustrates that users get greater outcomes when CE and *SATISFACTION* are present, and AE is absent. Model 4 shows that CE, AE, *SATISFACTION*, and the lack of BE produce greater recommended results.

Findings from asymmetrical analyses are consistent with the symmetrical findings, which lay greater emphasis on the incorporation of factors like CE, AE, BE, and *SATISFACTION* to develop users' subjective well-being. The asymmetrical analyses correlate with symmetrical findings where all conditions (CE, AE, BE, and *SATISFACTION*), either their presence or absence, contribute towards the outcome. Contrary to symmetrical-based results, causal-route models leading to low subjective well-being were not matched in asymmetrical analyses (Pappas & Woodside, 2021). Table 7 provides three results-based causes of low subjective well-being (Coverage: 0.657; Consistency: 0.886). These three causal recipes lead to low subjective well-being: Model 1 linked low subjective well-being to the lack of CE, AE, and BE. Without CE and AE and with *SATISFACTION*, users had low subjective well-being (see Model 2 in Table 7). Low subjective well-being can be induced by CE and AE and the absence of *SATISFACTION*, according to the third and last model. It is worth mentioning that the fsQCA findings have profound insights into the current study context and facilitate in discovering the core conditions that are required for low well-being i.e. absence of CE, AE and BE. Also, three out of four recipes are considered as sufficient and necessary for high well-being (configurations 1, 3, and 4).

Table 7
Sufficiency analysis.

	Recipes for High WELLBEING			
Causal Conditions	1	2	3	4
Satisfaction				
Cognitive Engagement		×		
Affective Engagement		×	×	
Behavioral Engagement		×		×
Raw Coverage	0.782	0.380	0.397	0.700
Unique coverage	0.410	0.014	0.003	0.396
Consistency	0.952	0.885	0.919	0.967
Overall Coverage	*0.836*			
Overall Consistency	*0.909*			

	Recipes for Low WELLBEING		
Causal Conditions	1	2	3
Satisfaction			
Cognitive Engagement	X	X	
Affective Engagement	X	X	
Behavioral Engagement	X		X
Raw Coverage	0.785	0.762	0.690
Unique coverage	0.051	0.055	0.047
Consistency	0.794	0.763	0.678
Overall Coverage	*0.657*		
Overall Consistency	*0.886*		

5.9. Necessary conditions analysis (NCA)

This study performed a necessary conditions assessment during the fsQCA review, which requires establishing the unique influence of each antecedent condition for the proposed findings. A causal condition is considered to be "necessary" if it is always present with the achieved outcome. It may be validated if the consistency scores of a required component surpass 0.90 (Dul, 2016; Ragin, 2008). Necessary conditions for enhancing subjective well-being were investigated for this study, and the findings in Table 8 exhibited that none of the examined conditions were required to achieve a greater degree of the desired outcome. However, affective engagement has high coverage, outlining its importance for practitioners.

6. Discussion and conclusion

This study intended to empirically investigate the interface of eSports gamers' satisfaction and its subsequent effect on their subjective well-being via the mediating roles of gamers' cognitive, affective, and behavioral engagement. Findings highlighted that satisfaction has a significant and positive association with eSports gamers' cognitive, affective, and behavioral engagement. Thus, confirming H1, H2, and H3. This study corroborates Liu et al. (2022) study, which proposed that

Table 8
Necessary conditions analysis (NCA).

Conditions	Consistency	Coverage
Ce	0.807	0.942
~ce	0.493	0.854
Ae	0.838	0.937
~ae	0.467	0.867
Be	0.784	0.923
~be	0.502	0.859
Satisfaction	0.762	0.907
~Satisfaction	0.539	0.910

future research needs to examine the potential positive influence of satisfaction on related consequences such as engagement. The study empirically validates results from the broaden-and-build-informed theory (Fredrickson, 2001; Fredrickson, 2004) and examines the interrelationships between the study constructs.

Further, the study results also validated that gamers' cognitive and affective engagement has a significant and positive association with users' subjective well-being. Hence, proving H4 and H5. The reason for this positive relationship is that game engagement can improve gamers' perceived values and benefits with the platform and can enhance their well-being. The study findings are coherent with Ogunmokun et al. (2021) and Abboud et al. (2023) research, which validated the link between customer engagement behavior and their psychological well-being. Additionally, our research revealed that the level of behavioral engagement with eSports gaming did not have any effect on the subjective well-being of players. Therefore, we reject hypothesis H6. This phenomenon may arise from the expectations of gamers when they encounter a mismatch in the skill levels of players in their group, or from the competitive pressure to win in eSports tournaments, or when playing games within a network of other players. Moreover, this insignificant impact lies in the fact that eSports participation alone is not sufficient to strengthen players' subjective well-being. Based on the broaden-and-build theory (Fredrickson, 2001), players' engagement leads to their subjective well-being when it elevates players' positive emotions for a particular action and facilitates them in building lasting psychological, emotional, and social resources. In contrast, behavioral engagement in the eSports context is characterized by players' repeated and performance-oriented behaviors like extended playing hours and excessive participation in competitive environments, which may yield short-term hedonic gratification (such as enjoyment and thrill) but may not necessarily foster building the long-term or utilitarian resources necessary for enduring well-being. The study results align with the existing eSports studies of Abbasi, Khan, et al. (2023), who found an insignificant impact of high engagement peripheral game elements on players' subjective well-being, and with Shan et al. (2023), who found extended gaming hours as negative predictors of gamers' psychological well-being.

Finally, the study result demonstrates support for the mediating relationship of gamers' engagement between gamers' satisfaction and their ensuing subjective well-being. Thus, supporting H7, H8, and H9. The study results are congruent with the results of prior studies, confirming the role of customer engagement in different contexts, including eSports gamers' videogame consumption behavior (Abbasi et al., 2021; Ting et al., 2021). The significant mediating effect of gamers' engagement facilitates the understanding that gamers' satisfaction with eSports games enhances their in-game participation, which successively leads to their goal attainment and life satisfaction. Players develop a gaming sense by willingly spending time and effort in the virtual gaming world and derive real-life meaning and lessons from it. The study findings further advocate the argument of the past studies, contemplating that eSports games should emphasize enhancing gamers' in-game satisfaction and motivate players to engage in game-related activities, which certainly will help in developing eSports gamers' well-being (Kim & Kim, 2022; Laato et al., 2022).

In the case of asymmetrical findings, also referred to as the causal recipes of fsQCA, the outcome variable, i.e., subjective well-being, may be influenced by the existence or lack of the investigated variables (i.e., gamers' satisfaction, cognitive, affective, and behavioral engagement). Table 7 illustrates that a gamer's subjective well-being can appear both to a high and low extent. In this study, four distinct causal recipes are predictive of high amounts of desired outcomes. When eSports gamers experience higher levels of CE and AE, they will experience higher subjective well-being (see Model 1). Subjective well-being is enhanced in the presence of BE (see Model 2). Model 3 exhibits that players will have a higher level of outcome when CE and *SATISFACTION* are present. Table 4 demonstrates that in the presence of CE, AE, and *SATISFACTION*, a higher level of outcome will be predicted.

In the same vein, Table 7 presents three different criteria that lead to a weak outcome. If CE, AE, and BE are absent, a lower level of outcome will occur (Model 1). Similarly, in the presence of *SATISFACTION*, low subjective well-being can be generated (Model 2). Model 3 exhibits that lower subjective well-being arises from the existence of CE and AE, and the lack of BE. These results generally align with our symmetrical findings, demonstrating the importance of the investigated constructs in developing gamers' subjective well-being. The findings of the study from both symmetrical (PLS-SEM) and asymmetrical (NCA) analysis provide useful insights and indicate that every condition (Satisfaction, AE, BE, and CE) affects the outcome variable in some manner, whether it is present or not. Collectively, these results demonstrate the importance of using a configurational method in conjunction with the PLS-SEM approach. Contrary to PLS-SEM analysis, which finds linear relationships among the study constructs, the fsQCA exhibits the diverse combinations of the study variables, i.e., engagement and satisfaction, that result in the same outcome, such as subjective well-being. This dual viewpoint strengthens the study's robustness and also demonstrates that in the eSports settings, there are multiple pathways leading to gamers' subjective well-being (Ke & Wagner, 2025).

Our findings indicate that SEM and fsQCA complement each other. SEM results reveal how each customer engagement dimension and customer satisfaction affect well-being in isolation, whereas fsQCA uncovers how well-being can emerge through different combinations of these factors. For instance, while SEM emphasizes the overall importance of engagement, fsQCA demonstrates that high well-being can be achieved when satisfaction is paired with affective engagement, or when satisfaction is paired with behavioral engagement, even in the absence of cognitive engagement. Furthermore, the pathways leading to low well-being are not simply the inverse of those leading to high well-being, underscoring the added value of fsQCA. Taken together, these findings provide a more comprehensive picture: SEM captures net effects, while fsQCA captures configurational structures, and their combination generates insights that neither method could deliver alone.

6.1. Theoretical implications

This research imparts key contributions to eSports marketing research. First, we contribute theoretically to eSports marketing, eSports-based gamer engagement, and subjective well-being literature (Bolun et al., 2024; Formosa et al., 2022; Hollebeek et al., 2022; Liu et al., 2022; Wang & Fan, 2024) by proposing and testing a conceptual framework to investigate the effects of gamer's satisfaction on cognitive-, affective-, and behavioral-engagement and consequent well-being. Thus, we answer Abbasi et al. (2022), Hollebeek et al. (2022), and Kim (2021) research by theoretically contributing to the latest marketing understanding in the eSports context. Further, we reply to recent systematic literature review works, including Chan et al. (2022) and Villani et al. (2018), which call for more investigation into eSports and engagement-related concepts. Following the broaden-and-build theory, we offer important insight into the role of gamer satisfaction in promoting their cognitive, affective, and behavioral engagement and resulting subjective well-being.

The second key research contribution has been to examine the role of cognitive, affective, and behavioral engagement as determinants of subjective well-being. Existing literature assessed the association relating to customers/gamers' engagement, satisfaction/participation intention (Ampofo et al., 2022; Molinillo et al., 2020; Priporas et al., 2020). However, to our best knowledge, no study has yet explored the effects of gamers' cognitive, affective, and behavioral engagement on subjective well-being within a single integrated theoretical model. Therefore, this study places new pathways by highlighting the broaden-and-build-theory of satisfaction/engagement research, which considers gamers' subjective well-being as a key insight in an eSports gaming context.

Third, our study has been associated with the multiple mediating roles of cognitive, affective, and behavioral engagement between eSports customers' satisfaction and subjective well-being. Whereas past research has claimed a direct effect of satisfaction on CE or well-being (Abror et al., 2020) but the empirical evaluation among the proposed factors remained uncertain (Hussain et al., 2023; Rather et al., 2023), especially in the eSports gaming context. Thus, we expand this extant knowledge by providing additional empirical evidence concerning the indirect influence of gamer satisfaction on subjective well-being via cognitive, affective, and behavioral engagement states, uncovering imperative mediating impact. Such findings advise that marketers should be able to promote gamer engagement and acquire competitive benefits (e.g., Pansari & Kumar, 2017).

Fourth, theoretical contribution has been associated with symmetric-based PLS to achieve prolific understanding and asymmetric-based fsQCA or NCA to identify necessary and sufficient conditions of our study constructs, such as satisfaction and engagement dimensions on a desired outcome, i.e., subjective well-being (Pappas & Woodside, 2021; Ragin, 2008). As confirmed by fsQCA findings, we identify six necessary conditions along with four sufficient combinations of factors to predict gamers' well-being, generating key implications.

Fifth, this study extends the perspective of the broaden-and-build-informed theory given by Fredrickson (2001) by applying it to the relevant context of the eSport gaming environment, especially by empirically investigating the role of eSports gamers' satisfaction with eSports games not only on eSports videogame engagement states (e.g., cognitive, affective, and behavioral) but also on predicting eSports customers' subjective well-being.

Finally, our study is also methodologically applicable to the field of consumer psychology by contributing to an expansion of the consumption of fsQCA. Whereas most previous consumer studies have relied on symmetrical methods (e.g., net effect modeling, regression, and SEM), these approaches often overlook the configurational and asymmetric nature of consumer decision-making. By employing fsQCA, we demonstrate that consumer well-being is predicted by different combinations of satisfaction and various dimensions of engagement. This allows us to capture the principles of causal asymmetry and equifinality. Such insights highlight the value of incorporating fsQCA into consumer psychology, especially when studying constructs such as satisfaction, engagement, and well-being, which are inherently multidimensional and interdependent. Our study, therefore, illustrates how configurational analysis can supplement SEM, offer a more nuanced understanding of consumer experiences, and expand the methodological toolkit available to consumer psychology researchers.

6.2. Practical implications

This study has many notable managerial implications. Our study enables eSports game developers and practitioners to understand different dynamics and attributes of the game industry, which further facilitates them in enhancing gamers' subjective well-being (Hu et al., 2024; Singh & Malik, 2024). The current research also helps game designers improve the overall eSports game design by emphasizing the gamer's satisfaction that generates gamer's engagement and further leads to their subjective well-being. For example, game designers may devote more resources and time towards developing more interesting and attractive eSports games that will satisfy the gamers and result in higher customer cognitive, affective, and behavioral engagement and gamer's subjective well-being. Moreover, advertisers and game manufacturers can gain significant advantages by strategically focusing on customer engagement. In light of the critically identified role of customer engagement in this study, we thus suggest practitioners adopt an experiential-branding approach for eSports games (Costa Pinto et al., 2015). For instance, they can develop highly detailed and customized games that let players immerse themselves in an accurately designed gaming environment, where they can make new friendships with other gamers, enjoy their favorite food while game playing, or explore new clues and hints about their rivals gaming strategy, which tend to encourage users game-related engagement and satisfaction (Abbasi et al., 2021). This in turn will stimulate their game engagement and ultimately lead to their subjective well-being.

Moreover, incentives such as in-game prizes or freebies, can also be used to draw player's attention and helps in retaining the gamers (Vyvey et al., 2018). Furthermore, Hollebeek et al. (2020) and Badrinarayanan et al. (2015) stated that eSports games can also be utilized as a means of imparting knowledge and life lessons such as conquering fears, first aid techniques, and job and school-relevant skills and abilities. Additionally, multi-player online gaming centers can deliberately employ this model to increase the player's base for particular games, which also facilitates the community involvement of the players. Our findings also indicated the opportunity to significantly increase eSports gaming revenue and player participation. For example, although male gamers dominate the gaming market, the popularity of games played on portable devices, such as smartphones, has led to an increase in the number of female gamers, creating new business opportunities for eSports game developers. Marketers are thus recommended to inspect the possible differences within the needs, demands, and preferences for game-related involvement/engagement between male and female consumers (Islam et al., 2020). Additionally, game manufacturers are recommended to place in-game commercial opportunities strategically across the entire game. Here, customers may buy game-related products to improve their gaming skills and enrich their overall gaming experience, which will increase their satisfaction and probably have an impact on their subjective well-being.

Finally, the fsQCA and PLS-SEM techniques used in this study give a broader picture of study variables to practitioners and game developers because these are complementary and widely employed techniques to increase the range of choices for decision-makers. The phenomenon will be overlooked if decision-makers are provided only a partial view. The variables examined in this study, impacting players' subjective well-being, align with findings from a symmetrical PLS-SEM model. Outcomes become more reliable with asymmetric models. The fsQCA results highlight combinations of causal relationships over individual effects, aiding understanding. Model 1 identifies CE and AE, model 2 highlights BE, model 3 emphasizes CE and satisfaction, and model 4 focuses on CE, AE, and satisfaction as key constructs predicting higher subjective well-being. Practitioners can use these insights for decision-making and developing solution-based eSports games.

6.3. Limitations and future work

The present study also has several limitations, despite the notable contributions. Firstly, although the study results have significance in the realm of eSports gaming, their applicability in other contexts and situations could be restricted. We thus encourage additional investigation of our suggested study framework in alternative contexts, which may subsequently be contrasted and compared with our results. Different additional game settings might be multiplayer online battle arena (MOBA) games, serious or virtual/augmented reality games, or alternative contexts such as service robots and offline games (Hollebeek et al., 2021).

Secondly, the generalizability of our study findings may be hindered by the fact that our findings are derived from a sample obtained within the Malaysian context. This implies that it is critical to reproduce this research in various cultural contexts and situations, as customers are mostly known to interact differently with brands based on their culture and economic conditions (Gupta et al., 2018; Hollebeek, 2018), and the results obtained may be contrasted with the findings of this study.

Thirdly, cross-sectional data used in this research indicates that our findings are predicated on the customer's self-reported marks made at a single moment in time. Thus, to gain insight into how gamers' satisfaction generates customer engagement that certainly enhances their

subjective well-being, we recommend conducting a longitudinal study in the future.

CRediT authorship contribution statement

Amir Zaib Abbasi: Writing – original draft, Validation, Software, Formal analysis, Conceptualization. **Muhammad Shahzeb Fayyaz:** Writing – original draft, Validation, Conceptualization. **Ghazanfar Ali Abbasi:** Writing – review & editing, Validation, Formal analysis. **Raouf Ahmad Rather:** Writing – review & editing, Validation, Data curation. **Ali Hussain:** Writing – review & editing, Methodology, Data curation.

Declaration of competing interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Data availability

Data will be made available on request.

References

Abbasi, A. Z., Alqahtani, N., Tsiotsou, R. H., Rehman, U., & Ting, D. H. (2023). ESports as playful consumption experiences: Examining the antecedents and consequences of game engagement. *Telematics and Informatics, 77*, Article 101937.

Abbasi, A. Z., Asif, M., Hollebeek, L. D., Islam, J. U., Ting, D. H., & Rehman, U. (2021). The effects of consumer esports videogame engagement on consumption behaviors. *The Journal of Product and Brand Management, 30*(8), 1194–1211.

Abbasi, A. Z., Khan, M. K., Naeem, F., Albashrawi, M., Ting, D. H., & Kumar, S. (2023). Gamers' subjective well-being: the role of peripheral and Core elements of eSporst videogame addiction. *Current Psychology, 42*(36), 32230–32243. https://doi.org/10.1007/s12144-022-04222-4

Abbasi, A. Z., Rehman, U., Fayyaz, M. S., Ting, D. H., Shah, M. U., & Fatima, R. (2022). Using the playful consumption experience model to uncover behavioral intention to play multiplayer online Battle arena (MOBA) games. *Data Technologies and Applications, 56*(2), 223–246.

Abbasi, A. Z., Ting, D. H., Hlavacs, H., Costa, L. V., & Veloso, A. I. (2019). An empirical validation of consumer video game engagement: A playful-consumption experience approach. *Entertainment Computing, 29*, 43–55.

Abbasi, A. Z., Ting, D. H., Hlavacs, H., Wilson, B., Albashrawi, M., & Dwivedi, Y. K. (2025). Unlocking playful dimensions: Developing and validating a scale for assessing video game-related hedonic experiences. *Journal of Innovation & Knowledge, 10*(4), Article 100753.

Abboud, L., Bruce, H. L., & Burton, J. (2023). I can't always get what I want: Low power, service customer (dis) engagement and wellbeing. *European Journal of Marketing, 57*(10), 2713–2736.

Abror, A., Patrisia, D., Engriani, Y., Evanita, S., Yasri, Y., & Dastgir, S. (2020). Service quality, religiosity, customer satisfaction, customer engagement and Islamic bank's customer loyalty. *Journal of Islamic Marketing, 11*(6), 1691–1705.

Akhtar, N., Siddiqi, U. I., Gugnani, R., Islam, T., & Attri, R. (2024). The potency of audiovisual attractiveness and influencer marketing: The road to customer behavioral engagement. *Journal of Retailing and Consumer Services, 79*, Article 103807.

Akoglu, H. E., & Özbek, O. (2021). The effect of brand experiences on brand loyalty through perceived quality and brand trust: a study on sports consumers. *Asia Pacific Journal of Marketing and Logistics, 34*(10), 2130–2148.

Ali, F., El-Manstrly, D., & Abbasi, G. A. (2023). Would you forgive me? From perceived justice and complaint handling to customer forgiveness and brand credibility-symmetrical and asymmetrical perspectives. *Journal of Business Research, 166*, Article 114138.

Ampofo, E. T., Owusu, J., Coffie, R. B., & Asiedu-Appiah, F. (2022). Work engagement, organizational embeddedness, and life satisfaction among frontline employees of star-rated hotels in Ghana. *Tourism and Hospitality Research, 22*(2), 226–240.

Badrinarayanan, V. A., Sierra, J. J., & Martin, K. M. (2015). A dual identification framework of online multiplayer video games: The case of massively multiplayer online role playing games (MMORPGs). *Journal of Business Research, 68*(5), 1045–1052.

Balakrishnan, J., & Griffiths, M. D. (2018). Loyalty towards online games, gaming addiction, and purchase intention towards online mobile in-game features. *Computers in Human Behavior, 87*, 238–246.

Bányai, F., Griffiths, M. D., Király, O., & Demetrovics, Z. (2019). The psychology of esports: A systematic literature review. *Journal of Gambling Studies, 35*, 351–365.

Barr, M., & Copeland-Stewart, A. (2022). Playing video games during the COVID-19 pandemic and effects on players' well-being. *Games and Culture, 17*(1), 122–139.

Becker, J.-M., Klein, K., & Wetzels, M. (2012). Hierarchical latent variable models in PLS-SEM: guidelines for using reflective-formative type models. *Long Range Planning, 45*(5–6), 359–394.

Boldi, A., Rapp, A., & Tirassa, M. (2022). Playing during a crisis: The impact of commercial video games on the reconfiguration of people's life during the COVID-19 pandemic. *Human-Computer Interaction*, 1–42.

Bolun, Z., Yan, Z., & Minghui, J. (2024). The configurational impact of e-commerce live streaming interactivity on consumer engagement behavior. *Asia Pacific Journal of Marketing and Logistics, 37*(3), 631–649.

Bowden, J. L.-H., Conduit, J., Hollebeek, L. D., Luoma-Aho, V., & Solem, B. A. (2017). Engagement valence duality and spillover effects in online brand communities. *Journal of Service Theory and Practice, 27*(4), 877–897.

Brodie, R. J., Hollebeek, L. D., Jurić, B., & Ilić, A. (2011). Customer engagement: Conceptual domain, fundamental propositions, and implications for research. *Journal of Service Research, 14*(3), 252–271.

Campbell, S., Greenwood, M., Prior, S., Shearer, T., Walkem, K., Young, S., … Walker, K. (2020). Purposive sampling: complex or simple? Research case examples. *Journal of Research in Nursing, 25*(8), 652–661.

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.

Cleveland, M., Iyer, R., & Babin, B. J. (2023). Social media usage, materialism and psychological well-being among immigrant consumers. *Journal of Business Research, 155*, Article 113419.

Costa Pinto, D., Reale, G., Segabinazzi, R., & Vargas Rossi, C. A. (2015). Online identity construction: How gamers redefine their identity in experiential communities. *Journal of Consumer Behaviour, 14*(6), 399–409.

Dul, J. (2016). Identifying single necessary conditions with NCA and fsQCA. *Journal of Business Research, 69*(4), 1516–1523.

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G* power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39*(2), 175–191.

Formosa, J., Johnson, D., Türkay, S., & Mandryk, R. L. (2022). Need satisfaction, passion and wellbeing effects of videogame play prior to and during the COVID-19 pandemic. *Computers in Human Behavior, 131*, Article 107232.

Fredrickson, B. L. (1998). What good are positive emotions? *Review of General Psychology, 2*(3), 300–319.

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist, 56*(3), 218.

Fredrickson, B. L. (2004). The broaden–and–build theory of positive emotions. *Philosophical Transactions of the Royal Society of London. Series B: Biological Sciences, 359*(1449), 1367–1377.

Gay, L. R., Mills, G. E., & Airasian, P. W. (2011). *Educational research: Competencies for analysis and applications* (Pearson Higher Ed).

George, J. H., & Ranjith, V. K. (2024). Exploring emotional ties: Insights into intrinsic motivations and casual gaming intentions. *Acta Psychologica, 251*, Article 104616.

Goldman, M. M., & Hedlund, D. P. (2020). Rebooting content: Broadcasting sport and esports to homes during COVID-19. *International Journal of Sport Communication, 13*(3), 370–380.

Guo, Z., Cahalane, M., & Carbonie, A. (2024). Online gaming with a purpose: Exploring positive personal development achieved through esports play. *Behaviour & Information Technology, 43*(1), 72–94.

Gupta, A. S., & Mukherjee, J. (2025). Exploring drivers of customer engagement with voice interface in E-retail. *International Journal of Retail & Distribution Management, 53*(4), 297–311.

Gupta, S., Pansari, A., & Kumar, V. (2018). Global customer engagement. *Journal of International Marketing, 26*(1), 4–29.

Hair, J., Hollingsworth, C. L., Randolph, A. B., & Chong, A. Y. L. (2017). An updated and expanded assessment of PLS-SEM in information systems research. *Industrial Management & Data Systems, 117*(3), 442–458.

Hair, J. F., Jr., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2016). A primer on partial least squares structural equation modeling (PLS-SEM). *Sage* (publications).

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review, 31*(1), 2–24.

Hamari, J., & Sjöblom, M. (2017). What is eSports and why do people watch it? *Internet Research, 27*(2), 211–232.

Hein, K., Conkey-Morrison, C., Burleigh, T. L., Poulus, D., & Stavropoulos, V. (2024). Examining how gamers connect with their avatars to assess their anxiety: A novel artificial intelligence approach. *Acta Psychologica, 246*, Article 104298.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science, 43*(1), 115–135.

Hollebeek, L. D. (2018). Individual-level cultural consumer engagement styles: Conceptualization, propositions and implications. *International Marketing Review, 35*(1), 42–71.

Hollebeek, L. D., Abbasi, A. Z., Schultz, C. D., Ting, D. H., & Sigurdsson, V. (2022). Hedonic consumption experience in videogaming: A multidimensional perspective. *Journal of Retailing and Consumer Services, 65*, Article 102892.

Hollebeek, L. D., Clark, M. K., Andreassen, T. W., Sigurdsson, V., & Smith, D. (2020). Virtual reality through the customer journey: Framework and propositions. *Journal of Retailing and Consumer Services, 55*, Article 102056.

Hollebeek, L. D., Clark, M. K., & Macky, K. (2021). Demystifying consumer digital cocreated value: Social presence theory-informed framework and propositions. *Recherche et Applications en Marketing (English Edition), 36*(4), 24–42.

Hollebeek, L. D., Glynn, M. S., & Brodie, R. J. (2014). Consumer brand engagement in social media: Conceptualization, scale development and validation. *Journal of Interactive Marketing, 28*(2), 149–165.

Hollebeek, L. D., & Macky, K. (2019). Digital content marketing's role in fostering consumer engagement, trust, and value: Framework, fundamental propositions, and implications. *Journal of Interactive Marketing, 45*(1), 27–41.
Hu, J., Ye, X., & Gu, S. (2024). The impact of subjective consumer knowledge on consumer behavioral loyalty through psychological involvement and perceived service quality: Sports clubs. *Asia Pacific Journal of Marketing and Logistics, 36*(8), 1988–2007.
Hussain, A., Abid, M. F., Shamim, A., Ting, D. H., & Toha, M. A. (2023). Videogames-as-a-service: How does in-game value co-creation enhance premium gaming co-creation experience for players? *Journal of Retailing and Consumer Services, 70*, Article 103128.
Hussain, A., Hollebeek, L. D., Marder, B., & Ting, D. H. (2025). In-game content purchase motivations (IGCPMs): Conceptualization, scale development, and validation. *Information & Management, 62*(7), Article 104207.
Hussain, A., Mirza, F., Sarker, M., & Ting, D. H. (2025). From play to pay: Exploring imaginal and emotional virtual item retail experiences in online game environment. *International Journal of Human–Computer Interaction, 41*(14), 8897–8911.
Hussain, A., Ting, D. H., & Marder, B. (2024). Why premium in freemium: A hedonic shopping motivation model in virtual game retailing. *Information Technology and People*.
Islam, J. U., Shahid, S., Rasool, A., Rahman, Z., Khan, I., & Rather, R. A. (2020). Impact of website attributes on customer engagement in banking: a solicitation of stimulus-organism-response theory. *International Journal of Bank Marketing, 38*(6), 1279–1303.
Jeon, H.-M., Ali, F., & Lee, S.-W. (2019). Determinants of consumers' intentions to use smartphones apps for flight ticket bookings. *The Service Industries Journal, 39*(5–6), 385–402.
Jiao, S., Wang, X., Ma, C., & Deng, Y. (2024). How does sports e-commerce influence consumer behavior through short video live broadcast platforms? Attachment theory perspective. *Asia Pacific Journal of Marketing and Logistics, 36*(7), 1557–1575.
Jo, H., & Shin, S.-A. (2024). Investigating viewer engagement in esports through motivation and attitudes toward metaverse and NFTs. *Scientific Reports, 14*(1), Article 19934.
Johnson, L. K., Nadler, R., Carswell, J., & Minda, J. P. (2021). Using the broaden-and-build theory to test a model of mindfulness, affect, and stress. *Mindfulness, 12*, 1696–1707.
Ke, X., & Wagner, C. (2025). Exploring relationships between video game experience and amateur Esports participation: A configurational approach. *International Journal of Human Computer Interaction*, 1–20.
Kim, J., & Kim, M. (2020). Spectator e-sport and well-being through live streaming services. *Technology in Society, 63*, Article 101401.
Kim, K., Kim, M., Han, J., Kim, D., & Lee, I. (2022). Does "we" matter for esports fans? Analyzing the mediating effects of the sense of fan community on team identification and fandom behaviors. *Physical Culture and Sport, 97*(1), 65–76.
Kim, M. (2021). Does playing a video game really result in improvements in psychological well-being in the era of COVID-19? *Journal of Retailing and Consumer Services, 61*, Article 102577.
Kim, M., & Kim, H.-M. (2022). What online game spectators want from their twitch streamers: Flow and well-being perspectives. *Journal of Retailing and Consumer Services, 66*, Article 102951.
Kim, M. J., & Hall, C. M. (2021). Do value-attitude-behavior and personality affect sustainability crowdfunding initiatives? *Journal of Environmental Management, 280*, Article 111827.
Kong, J. S.-L., Kwok, R. C.-W., Lai, G. C.-H., & Law, M. (2024). Motivational profile and knowledge creation in eSports: Examining the roles of mutualistic co-presence. *Internet Research*.
Laato, S., Islam, A. K. M. N., & Laine, T. H. (2022). Playing location-based games is associated with psychological well-being: an empirical study of Pokémon GO players. *Behaviour & Information Technology, 41*(9), 1888–1904.
Laffan, D. A., Greaney, J., Barton, H., & Kaye, L. K. (2016). The relationships between the structural video game characteristics, video game engagement and happiness among individuals who play video games. *Computers in Human Behavior, 65*, 544–549.
Lance, C. E., Lautenschlager, G. J., Sloan, C. E., & Varca, P. E. (1989). A comparison between bottom–up, top–down, and bidirectional models of relationships between global and life facet satisfaction. *Journal of Personality, 57*(3), 601–624.
Li, J., Wu, Y., & Hesketh, T. (2023). Internet use and cyberbullying: Impacts on psychosocial and psychosomatic wellbeing among Chinese adolescents. *Computers in Human Behavior, 138*, Article 107461.
Li, T., Cai, L., Liu, Y., Yuen, K. F., & Wang, X. (2024). From a functional service to an emotional 'saviour': A structural analysis of logistics values for in-home consumers. *Journal of Retailing and Consumer Services, 78*, Article 103696.
Liao, G.-Y., Huang, T.-L., Cheng, T. C. E., & Teng, C.-I. (2020). Impacts of media richness on network features and community commitment in online games. *Industrial Management & Data Systems, 120*(7), 1361–1381.
Limone, P., Ragni, B., & Toto, G. A. (2023). The epidemiology and effects of video game addiction: A systematic review and meta-analysis. *Acta Psychologica, 241*, Article 104047.
Liu, H., Tan, K. H., & Pawar, K. (2022). Predicting viewer gifting behavior in sports live streaming platforms: The impact of viewer perception and satisfaction. *Journal of Business Research, 144*, 599–613.
Lo, C. K. M., Chan, E. W. W., Ho, F. K., Yu, L., Chui, W. W. H., & Chan, K. L. (2025). Associations of emotional experience with gaming duration and risk of gaming disorder among adolescent gamers: An ecological momentary assessment study. *Addiction, 120*(9), 1853–1862. https://doi.org/10.1111/add.70088
Ma, L., Ou, W., & Lee, C. S. (2022). Investigating consumers' cognitive, emotional, and behavioral engagement in social media brand pages: A natural language processing approach. *Electronic Commerce Research and Applications, 54*, Article 101179.
Macey, J., & Hamari, J. (2018). Investigating relationships between video gaming, spectating esports, and gambling. *Computers in Human Behavior, 80*, 344–353.
Macey, J., Tyrväinen, V., Pirkkalainen, H., & Hamari, J. (2022). Does esports spectating influence game consumption? *Behaviour & Information Technology, 41*(1), 181–197.
Maduku, D. K., Rana, N. P., Mpinganjira, M., Thusi, P., Mkhize, N. H.-B., & Ledikwe, A. (2024). Do AI-powered digital assistants influence customer emotions, engagement and loyalty? An empirical investigation. *Asia Pacific Journal of Marketing and Logistics, 36*(11), 2849–2868.
Magdy, A., & Hassan, H. (2025). Foodstagramming unleashed: Examining the role of social media involvement in enhancing the creative food tourism experience. *Tourism and Hospitality Research*, Article 14673584241311295.
Malik, G., & Pradhan, D. (2025). How does gameful experience foster customer engagement and brand advocacy? Consumer insights into branding in e-tail. *Journal of Consumer Marketing, 42*(2), 205–222.
Mashkoor, M., & Muhammad, L. (2024). Being happy pays off! Positive affect shaping employee creativity in the hospitality industry through the Lens of broaden-and-build theory. *SAGE Open, 14*(2), Article 21582440241259691.
Mechelin, K. J., & Liu-Lastres, B. (2025). Exploring esport players' motivation, experiences, and well-being. *Leisure Studies, 44*(1), 140–154.
Meng, J., Williams, D., & Shen, C. (2015). Channels matter: Multimodal connectedness, types of co-players and social capital for multiplayer online Battle arena gamers. *Computers in Human Behavior, 52*, 190–199.
Mettler, J., Mills, D. J., & Heath, N. L. (2020). Problematic gaming and subjective well-being: How does mindfulness play a role? *International Journal of Mental Health and Addiction, 18*, 720–736.
Molinillo, S., Anaya-Sánchez, R., & Liebana-Cabanillas, F. (2020). Analyzing the effect of social support and community factors on customer engagement and its impact on loyalty behaviors toward social commerce websites. *Computers in Human Behavior, 108*, Article 105980.
Muruganantham, G., & Kumar, B. D. (2025). Gratification-driven customer engagement in AR mobile apps: shaping psychological ownership and behavioural intentions. *Journal of Marketing Communications*, 1–23.
Newman, J. I., Xue, H., Watanabe, N. M., Yan, G., & McLeod, C. M. (2022). Gaming gone viral: An analysis of the emerging esports narrative economy. *Communication & Sport, 10*(2), 241–270.
Ogunmokun, O. A., Unverdi-Creig, G. I., Said, H., Avci, T., & Eluwole, K. K. (2021). Consumer well-being through engagement and innovation in higher education: A conceptual model and research propositions. *Journal of Public Affairs, 21*(1), Article e2100.
Orelj, A., & Torfason, M. T. (2022). They didn't ask: Online innovation communities as a latent dynamic capability. *Technological Forecasting and Social Change, 180*, Article 121738.
Pang, S., Zhang, Z., & Wang, X. (2025). Well-being in gaming communities: the relationship between online gaming participation, social capital, and life satisfaction. *Current Psychology, 44*(7), 5734–5743. https://doi.org/10.1007/s12144-025-07575-8
Pansari, A., & Kumar, V. (2017). Customer engagement: The construct, antecedents, and consequences. *Journal of the Academy of Marketing Science, 45*(3), 294–311.
Pappas, I. O., & Woodside, A. G. (2021). Fuzzy-set qualitative comparative analysis (fsQCA): Guidelines for research practice in information systems and marketing. *International Journal of Information Management, 58*, Article 102310.
Paramita, W., Purnomo, B. R., Virgosita, R., & Wibowo, A. (2022). Small is beautiful: Insights from the broaden-and-build theory of positive emotions on layoff decision in micro and small enterprises. *Journal of Business Venturing Insights, 18*, Article e00331.
Pizzo, A. D., Su, Y., Scholz, T., Baker, B. J., Hamari, J., & Ndanga, L. (2022). Esports scholarship review: Synthesis, contributions, and future research. *Journal of Sport Management, 36*(3), 228–239.
Poulus, D. R., Bennett, K. J., Swann, C., Moyle, G. M., & Polman, R. C. (2023). The influence of an esports-adapted coping effectiveness training (E-CET) on resilience, mental health, and subjective performance among elite league of legends players: A pilot study. *Psychology of Sport and Exercise, 69*, Article 102510. https://doi.org/10.1016/j.psychsport.2023.102510
Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40*(3), 879–891.
Priporas, C.-V., Stylos, N., & Kamenidou, I. E. (2020). City image, city brand personality and generation Z residents' life satisfaction under economic crisis: Predictors of city-related social media engagement. *Journal of Business Research, 119*, 453–463.
Qian, T. Y., Matz, R., Luo, L., & Xu, C. (2022). Gamification for value creation and viewer engagement in gamified livestreaming services: The moderating role of gender in esports. *Journal of Business Research, 145*, 482–494.
Raggiotto, F., & Scarpi, D. (2022). It's not just a game: Virtual edgework and subjective well-being in E-sports. *Journal of Interactive Marketing, 58*(2–3), 185–197. https://doi.org/10.1177/10949968221127897
Raggiotto, F., & Scarpi, D. (2023). It's not just a game: Virtual edgework and subjective well-being in e-sports. *Journal of Interactive Marketing, 58*(2–3), 185–197.
Ragin, C. C. (2008). *Measurement versus calibration: A set-theoretic approach.*. https://doi.org/10.1093/oxfordhb/9780199286546.003.0008
Rather, R. A., Hollebeek, L. D., & Rasoolimanesh, S. M. (2022). First-time versus repeat tourism customer engagement, experience, and value cocreation: An empirical investigation. *Journal of Travel Research, 61*(3), 549–564.
Rather, R. A., Raisinghani, M., Gligor, D., Parrey, S. H., Russo, I., & Bozkurt, S. (2023). Examining tourist citizenship behaviors through affective, cognitive, behavioral

engagement and reputation: Symmetrical and asymmetrical approaches. *Journal of Retailing and Consumer Services, 75*, Article 103451.
Ribeiro, T., Almeida, V., Calapez, A., Matsuoka, H., & Yamashita, R. (2023). Esports and Olympic games: A cross-cultural exploration of the player support behaviour towards the Olympics. *International Journal of Sports Marketing and Sponsorship, 24*(4), 700–721.
Sarstedt, M., Hair, J. F., Jr., Cheah, J.-H., Becker, J.-M., & Ringle, C. M. (2019). How to specify, estimate, and validate higher-order constructs in PLS-SEM. *Australasian Marketing Journal; AMJ, 27*(3), 197–211.
Sarstedt, M., Ringle, C. M., & Hair, J. F. (2021). Partial least squares structural equation modeling. In *Handbook of market research* (pp. 587–632). Springer.
Scholz, T. M., & Vyugina, D. (2019). Looking into the future: What we are expecting from generation Z. In *Generations Z in Europe* (pp. 277–284). Emerald Publishing Limited.
Seyfi, S., Rasoolimanesh, S. M., Vafaei-Zadeh, A., & Esfandiar, K. (2024). Can tourist engagement enhance tourist behavioural intentions? A combination of PLS-SEM and fsQCA approaches. *Tourism Recreation Research, 49*(1), 63–74.
Shan, D., Dai, Z., Ge, F., Zhang, Y., Zheng, Y., Gao, X., & Han, J. (2023). The mediating role of positive attitudes on the relationship between Esports gaming hours and psychological well-being during the COVID-19 pandemic. *Cureus, 15*(3).
Shanley, P. (2020). Gaming usage up 75 percent amid coronavirus outbreak. *Verizon Reports*. https://www.hollywoodreporter.com/news/general-news/gaming-usage-up-75-percent-coronavirus-outbreak-verizon-reports-1285140/.
Shi, X., & Liao, Z. (2017). Online consumer review and group-buying participation: The mediating effects of consumer beliefs. *Telematics and Informatics, 34*(5), 605–617.
Shi, Y.-D., Feng, H.-X., Liu, J., & Ma, Y.-L. (2024). Mobile online game experience and community interaction: Mechanisms affecting user satisfaction. *Acta Psychologica, 251*, Article 104591.
Singh, P., & Malik, G. (2024). From trial to triumph! A longitudinal design eliciting social impact perspective for sustained usage of gamified fitness apps. *Asia Pacific Journal of Marketing and Logistics, 37*(2), 382–402.
Sjöblom, M., Macey, J., & Hamari, J. (2020). Digital athletics in analogue stadiums: Comparing gratifications for engagement between live attendance and online esports spectating. *Internet Research, 30*(3), 713–735.
So, K. K. F., Li, J., He, Y., & King, C. (2024). The role of customer engagement in sustaining subjective well-being after a travel experience: Findings from a three-wave study. *Journal of Travel Research, 63*(5), 1280–1303.
Sriwidharmanely, S., Sumiyana, S., Mustakini, J. H., & Nahartyo, E. (2022). Encouraging positive emotions to cope with technostress's adverse effects: insights into the broaden-and-build theory. *Behaviour & Information Technology, 41*(10), 2201–2214.
Statista. (2023). Number of video game users in the United States from 2018 to 2028. https://www.statista.com/forecasts/1277728/physical-or-digital-core-gamers-in-the-us.
Teeroovengadum, V., Ringle, C. M., Nunkoo, R., & Coates, H. (2023). Quality of higher education experience, satisfaction, and well-being: genuinely caring for our students-consumers. *Journal of Marketing for Higher Education*, 1–23.
Teng, C.-I., Huang, T.-L., Yang, Z.-H., Wu, W.-J., & Liao, G.-Y. (2022). How strategic, offensive, and defensive engagement impact gamers' need satisfaction, loyalty, and game usage. *International Journal of Information Management, 66*, Article 102515.
Ting, D. H., Abbasi, A. Z., & Ahmed, S. (2021). Examining the mediating role of social interactivity between customer engagement and brand loyalty. *Asia Pacific Journal of Marketing and Logistics, 33*(5), 1139–1158.
Today, I. T. (2025). Key Differences Between Gaming and Esports. https://innotechtoday.com/key-differences-between-gaming-and-esports/.
Türkay, S., Lin, A., Johnson, D., & Formosa, J. (2023). Self-determination theory approach to understanding the impact of videogames on wellbeing during COVID-19 restrictions. *Behaviour & Information Technology, 42*(11), 1720–1739.
Vagias, W. M. (2006). Likert-type scale response anchors. In *Clemson International Institute for Tourism & research development*. Department of Parks: Recreation and Tourism Management. Clemson University.
Van Doorn, J., Lemon, K. N., Mittal, V., Nass, S., Pick, D., Pirner, P., & Verhoef, P. C. (2010). Customer engagement behavior: Theoretical foundations and research directions. *Journal of Service Research, 13*(3), 253–266.
Villani, D., Carissoli, C., Triberti, S., Marchetti, A., Gilli, G., & Riva, G. (2018). Videogames for emotion regulation: a systematic review. *Games for Health Journal, 7*(2), 85–99.
Vyvey, T., Castellar, E. N., & Van Looy, J. (2018). Loaded with fun? The impact of enjoyment and cognitive load on brand retention in digital games. *Journal of Interactive Advertising, 18*(1), 72–82.
Wang, L., Sun, Y., & Luo, X. (2022). Game affordance, gamer orientation, and in-game purchases: A hedonic–instrumental framework. *Information Systems Journal, 32*(6), 1097–1125.
Wang, W., & Fan, J. (2024). Topic mining of real-time discussions: what catches the attention of live-streaming esports viewers? *European Sport Management Quarterly, 24*(2), 323–344.
Weingarden, H., Calleja, R. G., Greenberg, J. L., Snorrason, I., Matic, A., Quist, R., … Wilhelm, S. (2023). Characterizing observed and effective behavioral engagement with smartphone cognitive behavioral therapy for body dysmorphic disorder: A methods roadmap and use case. *Internet Interventions, 32*, Article 100615.
Xiang, Y., & Yuan, R. (2021). Why do people with high dispositional gratitude tend to experience high life satisfaction? A broaden-and-build theory perspective. *Journal of Happiness Studies, 22*(6), 2485–2498.
Xiong, J., & Li, F. (2024). How do live-streamers attract their consumers: Insights from a multi-group analysis. *Asia Pacific Journal of Marketing and Logistics*.
Yadav, J., Misra, M., Rana, N. P., Singh, K., & Goundar, S. (2022). Netizens' behavior towards a blockchain-based esports framework: a TPB and machine learning integrated approach. *International Journal of Sports Marketing and Sponsorship, 23*(4), 665–683.
Yang, H., Liang, C., Liang, Y., Yang, Y., Chi, P., Zeng, X., & Wu, Q. (2023). Association of Gratitude with Individual and Organizational Outcomes among Volunteers: An application of broaden-and-build theory of positive emotions. *SAGE Open, 13*(4), Article 21582440231210372.
Yang, S., Isa, S., Ramayah, T., & Abbasi, G. (2021). Predicting Chinese visitors' revisit intention through destination personality, destination image and destination self-congruity: A case study in Glasgow, UK. *European Journal of International Management*.
Yen, C.-H., Teng, H.-Y., & Tzeng, J.-C. (2020). Innovativeness and customer value co-creation behaviors: Mediating role of customer engagement. *International Journal of Hospitality Management, 88*, Article 102514.
Zhao, W., & Ma, R. (2025). Investigating the relationship between goal orientation, self-efficacy, positive emotionality, and affective engagement among Chinese students. *Acta Psychologica, 253*, Article 104735.