

ENHANCING SPECTATOR ENGAGEMENT IN E-SPORTS EVENTS

Manit Satitsamitpong¹, Kittipong Napontun², Prarawan Senachai^{3,*},
Samkhumphra Tovar⁴ and Supaporn Daengmeesee⁵

Abstract

This study investigates and measures factors related to the involvement of spectators in e-sports events using a Structural Equation Model (SEM) coupled with a Necessary Condition Analysis (NCA). The researchers conducted the study within a framework of push and pull factors. The findings indicate that both push and pull factors impact commitment, and that commitment has an impact on engagement. The practical implication of this is that management should emphasize pull factors, such as improving the quality of events, strategies for enhancing event attractiveness at the community level, managing event rewards, considering pricing strategies, utilizing promotions, and selecting suitable venues. Regarding the theoretical implications, the significance of three factors, push, pull, and commitment, are underscored as necessary conditions for engagement in this context. This research provides valuable in-depth insights for e-sports event managers to develop strategies which increase interest and participation among spectators, thereby enhancing the overall experience and growth of the industry.

Keywords: E-sports event, Push and pull factors, Engagement, and Commitment

1. INTRODUCTION

Throughout human history, sports have played a vital role in every culture as a means of health and well-being (Jonasson & Thiborg, 2010). However, a decade of technological development and evolution has built a sport online (Ma et al., 2013) by integrating gaming, computing, media, and sports events (Abanazir, 2019). Thus, computer gaming or electronic sport (E-sport) has been created, and it has become a more popular worldwide sport because

¹ Dr. Manit Satitsamitpong is a lecturer in the Master of Digital Business Transformation Program at Thammasat University, Thailand. He holds a bachelor's degree in Computer Science and Engineering from the University of Pennsylvania, an MBA from the University of Illinois, and an MS in Information Technology Management from Georgia Institute of Technology. He received his Doctoral degree in Global Information and Telecommunication Studies at Waseda University, Japan. His research interests are in economics and policy issues on digital technology utilization in developing nations as well as in business and technical issues on the impact of digital technology within an organizational context.

² Kittipong Napontunis currently working as an assistant researcher in the Consumer Insights in Sports or Service-Related Business Research Unit, Chulalongkorn University. Email: Kittipong.n51@gmail.com

^{3,*} Dr. Prarawan Senachai (corresponding author), is a lecturer in the Department of Marketing at the Faculty of Business Administration and Accountancy at Khon Kaen University in Thailand. She earned a Bachelor and Master of Communication Arts from Bangkok University in Thailand in 1997 and 2001. She obtained her Doctoral degree in Marketing Communication from the Faculty of Arts and Design at the University of Canberra, Australia. Her research interests include Communications & Media, Customer Relationship Management, Service Marketing, and research related to the field of marketing. Email: prarse@kku.ac.th

⁴ Samkhumphra Tovar is currently studying at the bachelor's degree in Department of Sports Management, Chulalongkorn University, Thailand.

⁵ Supaporn Daengmeesee is currently studying at the bachelor's degree in Department of Sports Management, Chulalongkorn University, Thailand.

of its entertainment and innovative features (Ma et al., 2013). E-sports experienced a significant growth during the COVID-19 pandemic, where people found themselves with increased leisure time and a heightened interest in home-based entertainment activities. This trend led to the widespread popularity of e-sports worldwide (Franks et al., 2022; Haupt et al., 2021). Additionally, individuals have shown increased dedication to following e-sports competitions (Yinuo & Runzhen, 2022). Global companies also support e-sports as a marketing activity by arranging e-sports events to focus consumer attention on their products/services without time limitations or geographical boundaries (Jonasson & Thiborg, 2010), resulting in a significant surge in viewership and support for e-sports events within a short timeframe (Yinuo & Runzhen, 2022). In the future, e-sports may be included in the Olympic games (Abanazir, 2019).

In Thailand, the Ministry of Tourism and Sports actively promotes and supports the development of the e-sports industry in various sectors, including athletes, businesses, and the general public (Girdwichai et al., 2022). Thus, it can be concluded that e-sports currently hold substantial significance in the Thai landscape. With the increasing popularity, particularly following the COVID-19 pandemic, the number of e-sports competitions has significantly risen, ranging from community to national levels (Statista, 2023). The shift towards offline events allows spectators to engage with their favorite e-sports teams or athletes, experience the atmosphere within the events, and have the opportunity to receive rewards from activities within events (Cumming et al., 2022; McCauley et al., 2020). Additionally, these events serve as opportunities for related businesses, such as e-sports merchandise retailers, internet service providers, and others, to advertise their brands as event sponsors (Aguiló-Lemoine et al., 2020; Carrillat & d'Astous, 2012). However, in the role of event organizers, achieving success remains challenging, particularly in attracting a large audience (Carvalho et al., 2021; Fotiadis, 2020). One of the critical questions is how the organizers can satisfy the target audience and receive positive feedback to pursue future sponsorships (Donlan & Crowther, 2014).

Many researchers believe that spectator engagement is a critical factor for the success of event organizers. Not only does it help in gathering a large audience, but it also contributes to maintaining relationships with spectators (Kumar & Reinartz, 2016; Napontun et al., 2023; Pansari & Kumar, 2017). Compared to traditional sports events (such as football, basketball, baseball, and rugby), organizing e-sports competitions can facilitate spectator engagement more easily because the majority of e-sports activities take place in the online realm (Karadakis & Painchaud, 2022; Wattanapisit et al., 2020). However, existing literature on spectator engagement in current e-sports competitions is limited. Researchers still lack empirical evidence that explains how to foster spectator engagement in e-sports events. Therefore, studying spectator engagement in e-sports competitions is a critical research topic to fill this gap.

This study aims to investigate and measure the factors related to spectator engagement within e-sports competitions using the push and pull factors framework (Dann, 1977; Lee et al., 2013; Qian, Wang, et al., 2020). It utilizes a structural equation modeling (SEM) approach to examine the structural relationships between push and pull factors and engagement. Additionally, necessary condition analysis (NCA) will be employed to identify the essential components required to achieve the expected outcomes. The general use of SEM emphasizes variables that significantly impact dependent variables but may not necessarily consider every item that influences the dependent variable. This limitation can affect the study's ability to draw comprehensive and in-depth conclusions when relying solely on SEM (Richter et al., 2020). Therefore, integrating NCA with SEM in this research enhances the capability to provide more nuanced and comprehensive findings. Finally, the results of this study contribute to expanding knowledge regarding spectator engagement in e-sports competitions and serve as a guide for event organizers to improve the efficiency of their e-sports competitions.

Following this section, a review of the literature on the background of e-sports, push and pull framework, commitment and engagement, is provided, along with a set of proposed

hypotheses. Section 3 explains the study's research methodology and is followed by the study's results and an overall discussion regarding the study, including a set of strategies presented for organizers and marketers. The final section concludes the paper and notes the study's contributions and limitations.

2. LITERATURE REVIEW

2.1 A Brief of E-sport

E-sports began in the early 1990s, and became popular by increasing the number of players (Jonasson & Thiborg, 2010), participants, spectators, and organizers, as well as increasing media coverage (Cunningham et al., 2018). As e-sports grows, the number of games in which competitions are held has increased and is still increasing (Jonasson & Thiborg, 2010). E-sport is delimited in time and space (Jonasson & Thiborg, 2010) and can be played between individuals or teams (Jonasson & Thiborg, 2010; Kim & Kim, 2020). The best e-sport participants can make money for a living (Jonasson & Thiborg, 2010). Meanwhile, e-sport fans experience happiness (Kim & Kim, 2020). Thus, e-sport events have been sponsored by global companies as an online marketing venue to focus consumer attention on their products and services without time limitations or geographical boundaries (Jonasson & Thiborg, 2010) in a short timeframe (Yinuo & Runzhen, 2022).

2.2 Push and pull factors framework

Motivation is a crucial variable in understanding behavior, a key component in the decision-making process, and a significant predictor of consumer behavior (Ben-Shaul & Reichel, 2018; Snepenger et al., 2006). Motivation has always been an essential topic in sports consumer behavior research as it is conducive to our understanding of event design and game experience, including the decision-making processes of the customers and spectators (Pu et al., 2022). Thus, studying the motivation towards participation in e-sports events is crucial.

Within the theories related to motivation, the framework of push and pull factors is widely accepted (Zhang et al., 2018). This framework was first introduced in the research field of tourism and hospitality by Dann (1977) and consists of two main forces: push and pull factors (Dann, 1977), and internal and external factors, which are related to (Kim et al., 2003; Prayag & Ryan, 2011). The push and pull framework is widely acknowledged as a practical and user-friendly framework for examining consumer behavior, especially travelers (Kim, 2008; Kim & Lee, 2002; Prayag & Hosany, 2014).

The push and pull factor framework has gained widespread acceptance in the tourism and service literature and is often employed to investigate travel motivations (Caber & Albayrak, 2016; Seyanont, 2017). Its applications can be used to explain how firms can accomplish goals and complete projects in the logistics, engineering, R&D, and production literature (Zhang et al., 2018). Some researchers have extended its applicability to explain consumer behavior in the context of attending various events, such as sports competitions (Mouratidis & Doumi, 2021) and watching e-sports events on streaming platforms (Qian, Wang, et al., 2020).

Researchers can apply the empirical guidelines on construct specification to justify the correct construct specification, implied in the push and pull framework (Nimako & Ntim, 2013) to study the involvement of spectators in e-sports events (Qian, Wang, et al., 2020). Furthermore, the push and pull framework can provide motivation sets and measurement scales to study sports consumer behavior (Pu et al., 2022), consumers' needs and wants, inherent motives, and an evaluation of the attributes of e-sports media products and services, including e-sports consumption (Qian, Wang, et al., 2020). It is imperative to integrate this holistic

framework into the inquiry of e-sports events (Qian, Wang, et al., 2020). Therefore, the push and pull factor framework was chosen as the foundation for constructing the research framework in this study. With the critical role of push and pull factors, their distinct effect on a spectator's decision-making process will be identified.

2.2.1 Push factors

Push factors are internal factors originating within an individual, creating needs or urges that stimulate specific actions. Generally, push factors are associated with personal interests or intrinsic desires (Kim et al., 2003; Prayag & Ryan, 2011). In the context of attending e-sports events, push factors refer to the intrapersonal or interpersonal elements (hedonic or internal) that influence the consumer's decision to consume e-sports (Qian, Wang, et al., 2020). Push factors may include opportunities for social interaction, entertainment nature, skill development and application, knowledge about games (Brown et al., 2018; Pizzo et al., 2018; Qian, Wang, et al., 2020), and competitive nature (Qian, Wang, et al., 2020).

2.2.2 Pull factors

Pull factors originate outside the individual; they stimulate individuals' interest or responses to certain things and are often associated with needs or efforts from the external environment (Kim et al., 2003; Prayag & Ryan, 2011). The concept of pull factors suggests that the construct is an effect construct, where positive factors can cause customers to be attracted to another service provider (Nimako & Ntim, 2013). In the context of attending e-sports events, pull factors may include the performance efficiency of the competition, participating competitors, activities or prizes within the event, among others (Qian, Wang, et al., 2020; Qian, Zhang, et al., 2020). Therefore, positive factors can cause attraction (Nimako & Ntim, 2013).

Researchers in the field of sports management have pointed out that push and pull factors are positively related to commitment (Qian, Wang, et al., 2020; Zhang & Byon, 2017). In theoretical terms, push factors are initiators that generate interest, while pull factors are enduring factors that lead individuals to follow and engage in the long term (Caber & Albayrak, 2016). The positive relationship between these two factors and commitment aids in a deeper understanding of consumer behavior and preferences. Considering the pivotal role of these structures, the following hypotheses can be formulated:

H1: Push factors have a positive influence on commitment.

H2: Pull factors have a positive influence on commitment.

2.3 Commitment

The notion of commitment is vital in building the relationship between a business and its customers (Tabrani et al., 2018). Morgan and Hunt (1994) defined commitment as an exchange partner who has confidence in the relationship with another and puts the maximum effort into maintaining it. Commitment is a psychological characteristic that leads individuals to have intentions and dedication in setting goals or carrying out tasks systematically and consistently (Klein et al., 2012; Wiener, 1982). It arises from various factors, such as personal interest, and personal preferences (Adams & Jones, 1997). Commitment to e-sports competition is crucial given the relatively high turnover rate of e-sports games and the importance of interpersonal influence among e-sports fans (Qian, Zhang, et al., 2020). In other words, commitment impacts the behavior of athletes, sports fans, and participants in related activities (Becker, 1960; Wattanapisit et al., 2020). Marketing literature widely acknowledges the significant role of commitment as a crucial relational structure that influences behaviors such as enhancing motivation, purchase intentions, and engaging in self-directed purchasing behavior (Inoue et al., 2017; Polas et al., 2022; Rehman et al., 2019). Likewise, past research

has supported the positive relationship between commitment and engagement, as one of the keys to success for organizers (Kumar & Reinartz, 2016; Pansari & Kumar, 2017; Qian, Wang, et al., 2020; van Tonder & Petzer, 2018). Considering the pivotal role of these structures, the following hypothesis was formulated:

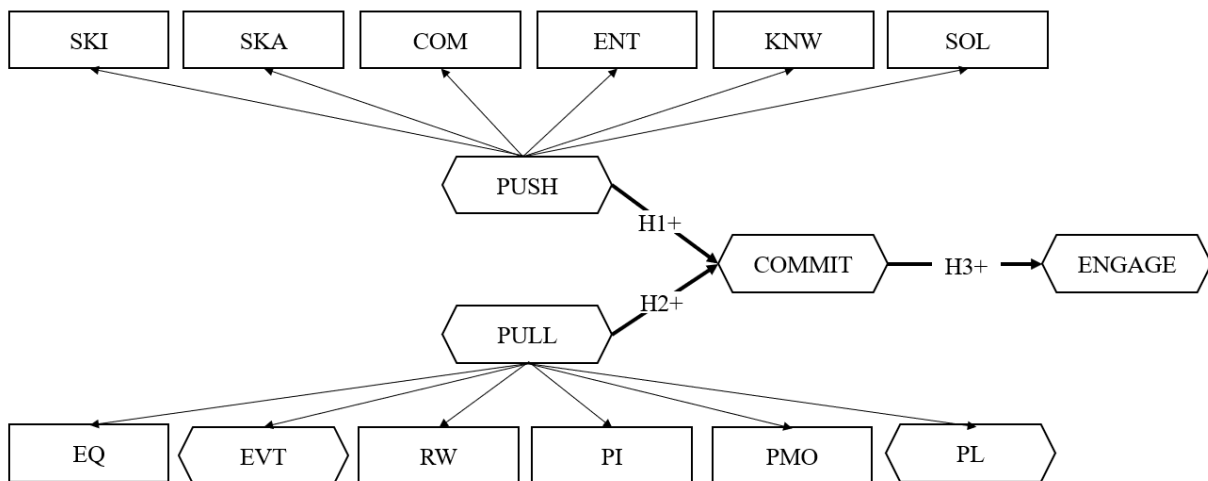
H3: Commitment positively influences engagement.

2.4 Engagement

Customer engagement is essential in marketing metrics (Verhoef et al., 2010). It significantly affects buying intentions (Gupta & Kim, 2010) and higher satisfaction among consumers (Dovaliene et al., 2015). Engagement is the value that customers contribute to a company, extending beyond the scope of mere transactions or purchases (Kumar et al., 2010; Verhoef et al., 2010). It represents the psychological and behavioral relationship between customers and companies, emphasizing involvement in various psychological and behavioral aspects (Kumar & Reinartz, 2016; Pansari & Kumar, 2017), such as word-of-mouth, staying informed (Dhasan & Kowathanakul, 2021; Napontun et al., 2023; Senachai et al., 2023; van Doorn et al., 2010), customer-to-customer interactions (So et al., 2014), and customer feedback (Abbas et al., 2018), which help companies to generate cash flow (Verhoef et al., 2010). In events, customer engagement is considered a critical success factor for attracting many attendees and maintaining relationships with them (Kumar & Reinartz, 2016; Napontun et al., 2023; Pansari & Kumar, 2017). Therefore, the organizational goal is to maximize customer engagement to extract maximum value throughout their lifecycle (Christofi et al., 2020).

Over the past decades, extensive research has focused on conceptualizing and measuring engagement (Hollebeek et al., 2022), considering various dimensions and perspectives such as customer engagement, employee engagement, and user engagement (Bitrián et al., 2021; Kumar et al., 2010; Kumar & Reinartz, 2016). Engagement is multidimensional and can be studied from various angles, including knowledge, understanding,

Figure 1 Conceptual Framework



Note. SKI = skill improvement, SKA = skill appreciation, COM = competitive nature, ENT = entertaining nature, KNW = game knowledge, SOL = socialization opportunity, EQ= event quality, EVT = event attractiveness, RW = rewards, PI = price, PMO = promotion, PL = place, COMMIT = commitment, ENGAGE = engagement

emotions, behaviors, and social aspects (Islam & Rahman, 2016; Ng et al., 2020). Nevertheless, many researchers support that behavioral engagement is a significant expression of customer engagement as it encompasses knowledge, understanding, and emotions (Alvarez-Milán et al., 2018; Heinonen, 2018). Thus, this research focuses on behavioral engagement, which goes beyond purchasing behavior, including word-of-mouth communication (WOM), providing information for event management development, and other aspects.

Based on the literature review, three hypotheses have been formulated and a conceptual framework developed for the research, as illustrated in Figure 1.

3. RESEARCH METHODOLOGY

3.1 Sample and Data Collection Method

This study was conducted in Thailand, targeting a sample group consisting of individuals aged 18 and above who expressed interest in participating in e-sports events. E-sports are popular among millennials and Generation Z (Holden et al., 2020). Therefore, Generation Z were selected as the main focus demographic for this study, covering individuals born between 1994 and 2010 according to Randstad's (2016) classification. However, recognizing the ambiguity in defining generations, the study specifically targeted those with experience and interest in attending e-sports events as spectators. Consequently, individuals slightly older than Generation Z but still engaged in e-sports event participation as spectators were included in the sample group. An online survey was distributed to individuals interested in e-sports, asking them whether they held experience and interest in participating in e-sports events as spectators. If they possessed such experience or interest, they were asked to respond to questions regarding push and pull factors influencing event attendees and their engagement (e.g., word-of-mouth, support for future events, and contributions to event development). The period of data collection was from 29 January 2024 to 12 February 2024. The survey, which took approximately 5-10 minutes, garnered responses from 266 individuals. Of these, 56 participants intentionally provided misleading responses, possibly distorting the research outcomes. Consequently, the complete and valid responses for analysis totaled 210 individuals. The researchers determined the sample size based on the recommendation of Tye-Din et al. (2010) which states that the sample size should exceed 200 individuals. Therefore, the sample size used in this study was considered appropriate for analysis.

3.2 Data Collection Tools

The survey was divided into six sections. Section 1 included questions about the respondents' relationship with e-sports, such as their preferred game types, and weekly gaming duration. Section 2 consisted of questions about push factors, while Section 3 covered pull factors. Section 4 focused on commitment to event participation, and the indicators in Sections 2-4 were adapted from the research of Qian, Wang, et al. (2020) to better align with the studied context. Section 5 contained engagement questions adapted from van Doorn et al. (2010). All indicators were assessed using a Likert scale (1 = least, 6 = most; 1 = strongly disagree, 6 = strongly agree) (Harland et al., 2015; Leung, 2011). Lastly, Section 6 comprised demographic information, such as gender, age, monthly income, and other relevant details.

3.3 Data Analysis

Generalized Structured Component Analysis (GSCA) was employed for structural equation modeling in this study, using GSCA Pro 1.2.1 software (Napontun et al., 2023;

Napontun & Pimchainoi, 2023; Napontun & Senachai, 2023; Rungroueng & Monpanthong, 2023), developed by Hwang et al. (2023).

The convergent validity was assessed through the factor loadings of each variable, with values higher than 0.7 considered satisfactory. The average variance extracted (AVE) should exceed 0.50, while composite reliability (CR) should be higher than 0.7. Statistical results meeting these criteria suggest convergent validity (Benitez et al., 2020; Hair et al., 2020; Manosuthi et al., 2021).

Discriminant validity was evaluated using the Heterotrait-Monotrait Ratio of Correlations (HTMT), with values below 0.85 indicating excellent discriminant validity and below 0.9 considered acceptable. Meeting these recommended thresholds in the statistical results indicates discriminant validity (Henseler et al., 2015). Furthermore, when both convergent and discriminant validity criteria are satisfied, it suggests construct validity of the measurement instruments (Benitez et al., 2020; Hair et al., 2020; Manosuthi et al., 2021).

Model fit indices were assessed using the Standardized Root Mean Square Residual (SRMR), which should be below 0.08, and the Goodness of Fit Index (GFI), which should exceed 0.9 (Benitez et al., 2020; Hair et al., 2020; Manosuthi et al., 2021)..

For the Necessary Condition Analysis (NCA), the algorithm developed by Thiem and Dusa (2012) was employed to investigate the necessary conditions for achieving the study outcomes (Wattanacharoensil et al., 2023). Testing the predictive accuracy of the final-stage model aimed to demonstrate that the model could predict the dependent variable (engagement). The linear scores obtained from the Structural Equation Model (SEM) with reference to the components, were utilized to conduct the Necessary Condition Analysis (NCA). The structure consisted of three elements: push factors, pull factors, and commitment. These predictor variables were examined to determine if they were necessary conditions for engagement in esports competitions, following the recommendations of Han et al. (2019). Components with a consistency value exceeding 0.85 were deemed essential for the occurrence of the dependent variable (engagement).

4. RESULTS

4.1 Descriptive Analysis Results

Table 1 Characteristics of the Sample Population

Respondent Profile	Category	Frequency (n)	Percentage (%)
Gender	Male	142	67.6
	Female	68	32.4
Age	18 - 20 years	34	16.2
	20-25 years	167	79.5
	26-35 years	7	3.3
	Over 35 years	2	1
Education	High school diploma	11	5.2
	Bachelor's degree	190	90.5
	Master's degree	3	1.4
	Not specified	6	2.9
Average monthly income	0-5,000 Baht	84	40
	5,001-10,000 Baht	77	36.6

Table 1 (Continued)

Respondent Profile	Category	Frequency (n)	Percentage (%)
Preferred game types	10,001-15,000 Baht	35	16.6
	15,001-20,000 Baht	8	3.9
	More than 20,000 Baht	6	2.9
	MOBA	92	43.8
	FPS	44	20.9
	MMORPG	38	18.1
	Battle Royale	18	8.6
	Combat	8	3.8
	Strategy	8	3.8
	Other	2	1
Time spent playing games per week	Less than 10 hours per week	96	45.7
	10-20 hours per week	70	33.3
	More than 20 hours per week	44	21

From the survey results of 210 e-sports players, as presented in Table 1, it was observed that 32.4% identified as female, while 67.6% identified as male. Most respondents fell within the age range of 20-25 years, constituting 79.5% of the sample. Regarding educational attainment, 90% of respondents had completed a bachelor's degree. Regarding monthly income, 40% earn up to 5,000 Baht, 36.6% earn 5,001-10,000 Baht, 16.6% earn 10,001-15,000 Baht, 3.9% earn 15,001-20,000 Baht, and 2.9% earn more than 20,000 Baht. The preferred game genres among respondents were predominantly MOBA (Multiplayer Online Battle Arena) games, accounting for 43.8%. Other popular game genres included FPS (First-person Shooter) games at 20.9%, MMORPG (Massive Multiplayer Online Role-Playing Games) at 18.1%, Battle Royale at 8.6%, and Combat and Strategy games, each at 3.8%. Games falling under the category of 'other' represent 1% of preferences. Regarding weekly gaming duration, the majority (45.7%) spent less than 10 hours per week on gaming.

4.2 Results of Construct Validity and Model Fit Indices

The analysis results are presented in Table 2. The factor loadings of each variable ranged from .790 to .876. The average variance extracted (AVE) ranged from .667 to .730, and the composite reliability (CR) ranged from .818 to .861. The results of the convergent validity assessment indicate that the survey exhibits convergent validity (Benitez et al., 2020; Hair et al., 2020; Manosuthi et al., 2021).

For the assessment of discriminant validity using the Heterotrait-Monotrait Ratio of Correlations (HTMT) presented in Table 3, HTMT values ranged from .646 to .880, demonstrating discriminant validity according to the established criteria (Henseler et al., 2015). The overall findings suggest that the survey possesses construct validity due to the presence of both convergent and discriminant validity.

Furthermore, the model fit indices, presented in the latter part of Table 2, reveal a Standardized Root Mean Square Residual (SRMR) value of .054 and a Goodness of Fit Index (GFI) of .981. These results from the model fit indices demonstrate the overall fit of the model (Benitez et al., 2020; Hair et al., 2020; Manosuthi et al., 2021).

Table 2 Results of Convergent Validity and Model Fit Indices

Measurement Items	Mean	SD	W	λ
Skill improvement (SK)				
If you participate in watching e-sports events that you enjoy, it can contribute to the development and improvement of your skills.	4.067	1.329	1.000	1.000
Skill appreciation (SKA)				
If you attend the event, you will likely enjoy witnessing new and unique playing styles in e-sports competitions.	4.743	1.028	1.000	1.000
Competitive nature (COM)				
If you have attended the event, you would likely enjoy watching intense competitions.	4.933	1.062	1.000	1.000
Entertaining nature (ENT)				
If you attend the event, you will find entertainment in attending e-sports events	4.652	1.086	1.000	1.000
If you attend the event, you will find entertainment in attending e-sports events.	4.652	1.086	1.000	1.000
Game knowledge (KNW)				
You feel a lot of fun when watching competitions in the game you play or are familiar with.	4.990	1.028	1.000	1.000
Socialization opportunity (SOL)				
If you attend the event, you expect to get to know people within the event who come to watch the e-sports event competition.	4.148	1.438	1.000	1.000
Event quality (EQ)				
How much importance do you place on the performance of the competition display, such as no screen stuttering during the competition?	4.929	1.187	1.000	1.000
Event attractiveness (EVT) AVE = .730 Rho = .844				
How much importance do you give to the reputation of the event and the prize money of the competition, such as national-level competitions, world-level competitions, etc.?	4.567	1.116	.625	.876
How much importance or interest do you give to the teams or competitors participating in the competition?	4.671	1.269	.544	.832
Rewards (RW)				
How much importance or interest do you give to the activities/prizes provided for the audience, such as participating in activities at booths within the event and receiving souvenirs?	4.600	1.192	1.000	1.000
Price (PI)				
How much importance or interest do you give to the ticket price/price of products sold exclusively within the event?	4.748	1.162	1.000	1.000

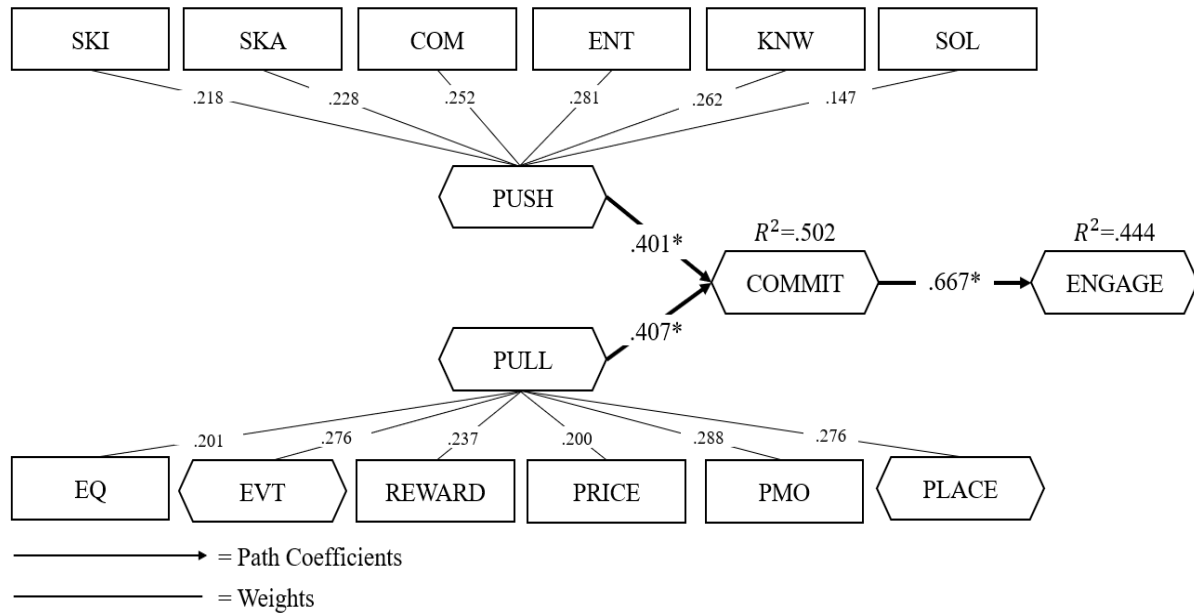
Table 2 (Continued)

Measurement Items	Mean	SD	W	λ
Promotion (PMO)				
How much influence do special offers from the event have on your decision to attend, such as early bird ticket prices, souvenir gifts from advance ticket purchases, or discounted products available exclusively at the event?	4.567	1.146	1.000	1.000
Place (PL) AVE = .691 Rho = .818				
How much does the venue for the competition influence your decision to attend the event, including the convenience of transportation to the venue?	5.090	1.058	.605	.834
How much does the ticket distribution channel/convenience in purchasing tickets influence your decision to attend the event?	4.648	1.207	.597	.829
Commitment (COMMIT) AVE = .667 Rho = .857				
From the above question, how much do you think these factors contribute to your strong commitment or intention to attend the event?	4.671	1.043	.432	.774
If there is an e-sports event in the future, how likely are you to attend the event?	4.319	1.12	.377	.852
How willing are you to sacrifice personal time and make an effort to participate in or attend the competition?	4.067	1.197	.419	.822
Engagement (ENGAGE) AVE = .674 Rho = .861				
Based on your experience attending e-sports events, would you recommend your friends to join the event?	4.676	1.095	.409	.790
After attending the e-sports event, would you be willing to participate in the development of future event management, such as providing feedback through surveys?	4.200	1.272	.380	.836
You actively engage online, such as liking, sharing, or commenting on social media posts related to e-sports events.	4.229	1.318	.430	.835
SRMR = .054 GFI=.981				

Note. SD = Standard Deviation, W=Weights, and λ = Estimated Factor Loadings

Table 3 Results of Discriminant Validity

Event attractiveness ↔ Place	0.646
Event attractiveness ↔ Place	0.826
Event attractiveness ↔ Place	0.616
Place ↔ Commitment	0.711
Place ↔ Engagement	0.586
Commitment ↔ Engagement	0.880

Figure 2 Path Diagram of the Tested Hypotheses

Note. * = .05 Significance level, SKI = skill improvement, SKA = skill appreciation, COM = competitive nature, ENT = entertaining nature, KNW = game knowledge, SOL = socialization opportunity, EQ = event quality, EVT = event attractiveness, REWARD = rewards, PRICE = price, PMO = promotion, PLACE = place, COMMIT = commitment, ENGAGE = engagement

4.3 Hypothesis Testing Results

The results of the hypothesis testing, as depicted in Table 4 and Figure 2, reveal significant support for Hypothesis 1, which asserts the positive influence of push factors on commitment. Similarly, Hypothesis 2, suggesting the positive impact of pull factors on commitment, also attains statistical significance. Moreover, Hypothesis 3, positing the positive influence of commitment on engagement, is substantiated with statistical significance. Additionally, it was discovered that push and pull factors together can predict 50.2% of the variance in commitment. Commitment, in turn, is able to predict 44.4% of the variance in engagement.

Table 4 Estimates of Path Coefficients

Hypothesis	Estimate	SE	95% CI	Result
H:1 Push → Commitment	.401*	0.085	[.276; .596]	Support
H:2 Pull → Commitment	.407*	0.098	[.198; .569]	Support
H:3 Commitment → Engagement	.667*	0.038	[.597; .75]	Support

4.4 Results of NCA

The NCA analysis conducted to identify the necessary conditions for engagement in Table 5 reveals that NCA discloses that all three motivators, namely push factors, pull factors, and commitment, exhibit consistency, with values of .984, .962, and .915, respectively. Additionally, their coverage values are .856, .847, and .904, respectively. In summary, all three factors were identified as necessary conditions for the occurrence of engagement (Han et al., 2019).

Table 5 Results of NCA

Predictor condition	Consistency	Coverage
Push	.948	.856
Pull	.962	.847
Commitment	.915	.904

5. DISCUSSION

The study's findings, derived from SEM, indicate that both push and pull factors significantly influence commitment, aligning with previous research (Fu, 2011; Qian, Wang, et al., 2020; Zhang & Byon, 2017). Additionally, the study discovers that commitment significantly influences engagement, consistent with previous research (Parihar & Dawra, 2020; Qian, Wang, et al., 2020; van Tonder & Petzer, 2018). Thus, in the context of e-sports competitions, both push and pull factors are crucial for event organizers.

Due to the fact that SEM generally focuses on independent variables which exert a significant impact on the dependent variables, it may not comprehensively encompass every factor influencing each dependent variable. NCA effectively addresses this limitation, indentifying push factors, pull factors, and commitment, as pivotal conditions for engagement within the study's context. This underscores the critical importance of these three factors in elucidating engagement behaviors specific to this particular context. The findings emphasize that understanding and considering these factors is essential for a comprehensive exploration of the dynamics influencing engagement in the studied scenario. Past e-sports research has failed to recognize the dual impact of push and pull factors (Qian, Wang, et al., 2020). The study's results regarding the push and pull factors towards e-sports highlight how appropriate these factors are in the management of events. The components of push factors, including skill improvement, skill appreciation, competitive nature, entertaining nature, game knowledge, and socialization opportunity, are all internal driving forces within spectators. These components are primarily related to individual interests and preferences (Kim et al., 2003; Prayag & Ryan, 2011). Therefore, push factors often emerge from the spectators themselves (Dayour & Adam, 2022; Prayag & Ryan, 2011). If spectators possess sufficient intrinsic push factors within themselves, it can lead to their commitment to engaging behavior (Zhang & Byon, 2017). However, influencing the intrinsic push factors within spectators is challenging for organizers because the root causes of push factors tend to vary at the individual level (Dayour & Adam, 2022). The creation of push factors may be seriously investigated with an alternative approach to research design and data analyses.

Meanwhile pull factors are more easily controllable (Qian, Wang, et al., 2020), including event quality, event attractiveness, rewards, price, promotion, and place. Event quality, refers to the quality of production which can significantly enhance the overall spectator experience if deemed to be high, making the event more appealing and engaging. Event attractiveness has several contributing factors, including the significance of the competition, the prize money at stake, and the reputation and caliber of participating teams and athletes. These elements contribute to building anticipation and excitement among spectators. The presence of renowned competitors and substantial prize money increases spectators' anticipation and enthusiasm. Rewards, such as special item-related activities and incentives offered to attendees, can serve as pull factors. These may encompass exclusive merchandise or other perks that enhance the overall value proposition for spectators. Price incorporates both the cost of admission and merchandise prices, which play a crucial role in attracting spectators. Affordable pricing makes the event more accessible to a broader audience, while perceived value for money encourages attendance and participation in related activities. Promotion

includes strategic marketing efforts tailored to the target audience, which can create a buzz and excitement around the event, motivating more individuals to attend. Place refers to the event venue and distribution channels and is crucial in influencing spectator turnout. A convenient and well-equipped venue, efficient access and good logistics enhance the spectator experience, encouraging attendance.

These factors are within the organizers' control. Thus, if pull factors are positive, they can cause spectator attraction (Nimako & Ntim, 2013). Additionally, the study found that pull factors have a more significant impact on commitment than push factors, similar to Qian, Wang, et al. (2020). Therefore, the components and effect of pull factors should be better understood theoretically as a formative construct and a combination of indicators or factors (Nimako & Ntim, 2013) that give rise to commitment and engagement. Commitment to e-sports competition is crucial (Qian, Zhang, et al., 2020). Thus, it is suggested that focusing more on pull factors to create commitment from spectators by managing and controlling pull factors might lead to the success of e-sports events. Ensuring an interesting competition, providing a valuable experience for viewers/spectators, and effectively managing pull factors can contribute to increased viewer commitment to engagement.

E-sports events are an idiosyncratic spectator entertainment characterized by interactivity, active participation, technology dependence, and mobility (Qian, Wang, et al., 2020, p.5). Thus, the push and pull factors in e-sports and their distinct effect should be better understood to warrant success.

6. CONCLUSION AND IMPLICATIONS

This study aims to investigate and measure the factors associated with viewers' engagement within e-sports competitions, employing the push and pull factors framework. NCA assists in gaining a profound understanding of the essential conditions required. The NCA analysis results reveal that push factors, pull factors, and commitment, are indispensable for spectator engagement. This underscores the critical nature of all three factors in fostering participatory behavior within the context of e-sports competitions.

6.1 Practical Implications

In practical terms, this study emphasizes pull factors as they are more controllable by event organizers than push factors.

Based on the study findings regarding event quality, the researchers recommend event organizers to utilize high-resolution display screens, appropriate lighting, and high-quality sound systems. These elements are suggested because they can create an engaging experience, enhance sensory enjoyment, and cultivate a positive atmosphere within the event, ultimately captivating and exciting the spectators (Kong & Chang, 2016).

Regarding event attractiveness, controlling factors such as the significance of the competition, prize money, participating teams, and athletes may be challenging for community-level competitions that do not have a sufficiently large budget for high prize payouts. Attracting renowned teams to participate becomes difficult due to limited financial resources. However, the researchers suggest an alternative approach by inviting several well-known athletes or influencers to join the event as invited guests. This strategy, utilizing a smaller budget than asking them to compete, is recommended as it can significantly enhance the overall appeal of the competition and draw a larger audience (Berne-Manero & Marzo-Navarro, 2020).

Regarding rewards, the researchers suggest incorporating activities within the event that are interesting, creative, and offer special prizes that are difficult to obtain or exclusively

available. These elements are intended to attract spectators' interest and stimulate increased engagement (Gorlier & Michel, 2020).

On the pricing aspect, organizers should set prices that align with the value spectators receive. If organizers set higher admission prices, they should ensure the event delivers an experience worthy of the cost, considering that spectators' expectations correlate with the amount they pay (Johnson et al., 1995).

In terms of promotion, researchers recommend implementing discount promotions such as early bird pricing, group discounts, and other incentives. Offering these discounts can create a buzz of interest and stimulate ticket sales. Furthermore, providing such discounts not only serves as a means to attract spectators but also contributes to overall satisfaction and positive impressions. This positive experience may lead spectators to recommend the event to others (Currie, 2010; Luonila et al., 2016).

Specific to place, selecting a suitable and convenient venue for spectators is crucial. The researchers recommend organizers choose a venue that can accommodate a suitable number of spectators and is easily accessible (Michellini et al., 2017).

6.2 Theoretical implications

Firstly, this initial study expands knowledge on the organization of e-sports events, given the escalating frequency of offline e-sports competitions. Despite the continuous growth of such events, related research remains limited. This study extends knowledge by examining the engagement behaviors of spectators, considered a crucial factor for event success. Spectator engagement behavior was explored through the conceptual framework of push and pull factors. The study successfully developed and validated a comprehensive model for assessing and understanding spectator engagement behavior in the context of online e-sports competitions. The findings from this study, which can be broadly summarized, pave the way for further exploration in the literature on the engagement behaviors of individuals interested in e-sports.

Secondly, the scope of the push and pull factor conceptual framework was expanded to explain the engagement behaviors of spectators in e-sports competitions. The study presents empirical evidence that both factors are crucial in fostering enthusiasm and demonstrating engagement behaviors among spectators. Furthermore, this study thoroughly explains each component of both factors in the context studied. Additionally, based on the study results, NCA found that push factors, pull factors, and commitment, are essential conditions for engagement in the context of the study. This underscores the significance of these three factors in explaining engagement behaviors in this context.

7. LIMITATIONS AND FUTURE RESEARCH

This literature has some limitations. Firstly, most questionnaire respondents in the sample group were aged 20-25 years, 20-25 years, belonging to Gen Z, and male. This introduces a bias towards this specific demographic, so future research should aim for a more balanced and representative sample, considering various age groups and both genders, to avoid potential bias and enhance the generalizability of the results. The researchers also recommend exploring studies within age groups different from this, such as Gen Y, to provide a more comprehensive summary of the research findings.

Secondly, both studies found that push and pull factors and commitment are necessary for participation in the studied context. However, compared to pull factors, this study did not investigate the sources of push factors, which are challenging for event organizers to control. Therefore, it is suggested that future research explore the origins of push factors in the context

of e-sports viewership, providing a more comprehensive understanding of spectator engagement behavior and offering practical insights for event organizers in e-sports competitions.

Lastly, recognizing trust and commitment is vital in building long-term consumer relationships (Chai et al., 2015; Morgan & Hunt, 1994). Trust and commitment can influence a successful or failed relationship between a business and a customer (Gounaris, 2005). Therefore, future research should explore spectator trust as a mediating variable in the engagement relationship. Studying the impact of spectator expectations, satisfaction, and close relationships, may be of great interest.

REFERENCES

- Abanazir, C. (2019). E-sport and the EU: the view from the English Bridge Union. *The International Sports Law Journal*, 18(3-4), 102-113.
- Abbas, M., Gao, Y., & Shah, S. S. H. (2018). CSR and customer outcomes: The mediating role of customer engagement. *Sustainability*, 10(11), 4243.
- Adams, J. M., & Jones, W. H. (1997). The conceptualization of marital commitment: An integrative analysis. *Journal of Personality and Social Psychology*, 72(5), 1177-1196. <https://doi.org/10.1037/0022-3514.72.5.1177>
- Aguiló-Lemoine, À. E., Rejón-Guardia, F., & García-Sastre, M. A. (2020). Congruence Effects on the Effectiveness of Sponsorship of Sport Event Websites: An Experimental Approach. *Sustainability*, 12(19), 8173. <https://www.mdpi.com/2071-1050/12/19/8173>
- Alvarez-Milán, A., Felix, R., Rauschnabel, P. A., & Hinsch, C. (2018). Strategic customer engagement marketing: A decision making framework. *Journal of Business Research*, 92, 61-70. <https://doi.org/https://doi.org/10.1016/j.jbusres.2018.07.017>
- Becker, H. S. (1960). Notes on the Concept of Commitment. *American Journal of Sociology*, 66(1), 32-40. <https://doi.org/10.1086/222820>
- Ben-Shaul, M., & Reichel, A. (2018). Motives, Modes of Participation, and Loyalty Intentions of Facebook Tourism Brand Page Consumers. *Journal of Travel Research*, 57(4), 453-471. <https://doi.org/10.1177/0047287517704087>
- Benitez, J., Henseler, J., Castillo, A., & Schuberth, F. (2020). How to perform and report an impactful analysis using partial least squares: Guidelines for confirmatory and explanatory IS research. *Information & Management*, 57(2), 103168. <https://doi.org/https://doi.org/10.1016/j.im.2019.05.003>
- Berne-Manero, C., & Marzo-Navarro, M. (2020). Exploring How Influencer and Relationship Marketing Serve Corporate Sustainability. *Sustainability*, 12(11), 4392. <https://www.mdpi.com/2071-1050/12/11/4392>
- Bitrián, P., Buil, I., & Catalán, S. (2021). Enhancing user engagement: The role of gamification in mobile apps. *Journal of Business Research*, 132, 170-185. <https://doi.org/https://doi.org/10.1016/j.jbusres.2021.04.028>
- Brown, K. A., Billings, A. C., Murphy, B., & Pusan, L. (2018). Intersections of Fandom in the Age of Interactive Media: eSports Fandom as a Predictor of Traditional Sport Fandom. *Communication & Sport*, 6(4), 418-435. <https://doi.org/10.1177/2167479517727286>
- Caber, M., & Albayrak, T. (2016). Push or pull? Identifying rock climbing tourists' motivations. *Tourism Management*, 55, 74-84. <https://doi.org/https://doi.org/10.1016/j.tourman.2016.02.003>
- Carrillat, F. A., & d'Astous, A. (2012). The sponsorship-advertising interface: is less better for sponsors? *European Journal of Marketing*, 46(3/4), 562-574. <https://doi.org/10.1108/03090561211202611>
- Carvalho, A., Fernandes, J., & Moreira, V. (2021, 2021//). The Importance of Cultural Events for the Promotion of the Territory: The Case Study of the Medieval Fair in Torre de

- Moncorvo. *Advances in Tourism, Technology and Systems*, Singapore.
- Chai, J. C. Y., Malhotra, N. K., & Dash, S. (2015). The impact of relational bonding on intention and loyalty: The mediating role of the commitment foci in service relationships. *Journal of Hospitality and Tourism Technology*, 6(3), 203-227.
- Christofi, M., Vrontis, D., Leonidou, E., & Thrassou, A. (2020). Customer engagement through choice in cause-related marketing. *International Marketing Review*, 37(4), 621-650. <https://doi.org/10.1108/IMR-04-2018-0133>
- Cumming, D. J.-J., Gibbs, M., & Smith, W. (2022). Constructing Authentic Spectatorship at an Esports Bar. *Journal of Contemporary Ethnography*, 51(2), 257-288. <https://doi.org/10.1177/08912416211031661>
- Cunningham, G. B., Fairley, S., Ferkins, L., Kerwin, S., Lock, D., Shaw, S., & Wicker, P. (2018). eSport: Construct specifications and implications for sport management. *Sport management review*, 21(1), 1-6.
- Currie, G. (2010). Quick and Effective Solution to Rail Overcrowding: Free Early Bird Ticket Experience in Melbourne, Australia. *Transportation Research Record*, 2146(1), 35-42. <https://doi.org/10.3141/2146-05>
- Dann, G. M. S. (1977). Anomie, ego-enhancement and tourism. *Annals of Tourism Research*, 4(4), 184-194. [https://doi.org/https://doi.org/10.1016/0160-7383\(77\)90037-8](https://doi.org/https://doi.org/10.1016/0160-7383(77)90037-8)
- Dayour, F., & Adam, I. (2022). Entrepreneurial motivations among COVID-19 induced redundant employees in the hospitality and tourism industry. *Journal of Human Resources in Hospitality & Tourism*, 21(1), 130-155. <https://doi.org/10.1080/15332845.2022.2015239>
- Dhasan, D., & Kowathanakul, S. (2021). The impact of service quality, promotions and customer engagement in determining customer loyalty in the Thai mobile network industry. *ABAC Journal*, 41(1), 209-240.
- Donlan, L., & Crowther, P. (2014). Leveraging sponsorship to achieve consumer relationship objectives through the creation of 'marketing spaces': An exploratory study. *Journal of Marketing Communications*, 20(4), 291-306. <https://doi.org/10.1080/13527266.2012.684068>
- Dovaliene, A., Masiulyte, A., & Piligrimiene, Z. (2015). The relations between customer engagement, perceived value and satisfaction: the case of mobile applications. *Procedia-Social and Behavioral Sciences*, 213, 659-664.
- Fotiadis, A. (2020). Sports Management, Project Management, and Sports Event Management. In A. Fotiadis & C. Vassiliadis (Eds.), *Principles and Practices of Small-Scale Sport Event Management* (pp. 1-19). IGI Global. <https://doi.org/10.4018/978-1-7998-4757-1.ch001>
- Franks, R. R., King, D., Bodine, W., Chisari, E., Heller, A., Jamal, F. t., Luksch, J., Quinn, K., Singh, R., & Solomon, M. (2022). AOASM Position Statement on Esports, Active Video Gaming, and the Role of the Sports Medicine Physician. *Clin J Sport Med*, 32(3), e221-e229. <https://doi.org/10.1097/jsm.0000000000001034>
- Fu, J.-R. (2011). Understanding career commitment of IT professionals: Perspectives of push-pull-mooring framework and investment model. *International Journal of Information Management*, 31(3), 279-293. <https://doi.org/https://doi.org/10.1016/j.ijinfomgt.2010.08.008>
- Girdwichai, P., Mahawaleerat, S., Eaimrittikrai, C., Cheungsirakulvit, T., & Boontavee, S. (2022). Trend and growth of E-sports after the epidemic situation of COVID-19: E-sports business trends in the future. *The Journal of Pacific Institute of Management Science (Humanities and Social Science)*, 8(2), 273-279. <https://so05.tci-thaijo.org/index.php/pacific/article/view/263314>
- Gorlier, T., & Michel, G. (2020). How special rewards in loyalty programs enrich consumer–

- brand relationships: The role of self-expansion. *Psychology & Marketing*, 37(4), 588-603. <https://doi.org/https://doi.org/10.1002/mar.21328>
- Gounaris, S. P. (2005). Trust and commitment influences on customer retention: insights from business-to-business services. *Journal of Business Research*, 58(2), 126-140.
- Gupta, S., & Kim, H. W. (2010). Value-driven Internet shopping: The mental accounting theory perspective. *Psychology & marketing*, 27(1), 13-35.
- Hair, J. F., Howard, M. C., & Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of Business Research*, 109, 101-110. <https://doi.org/https://doi.org/10.1016/j.jbusres.2019.11.069>
- Han, H., Al-Ansi, A., Olya, H. G. T., & Kim, W. (2019). Exploring halal-friendly destination attributes in South Korea: Perceptions and behaviors of Muslim travelers toward a non-Muslim destination. *Tourism Management*, 71, 151-164. <https://doi.org/https://doi.org/10.1016/j.tourman.2018.10.010>
- Harland, N. J., Dawkin, M. J., & Martin, D. (2015). Relative utility of a visual analogue scale vs a six-point Likert scale in the measurement of global subject outcome in patients with low back pain receiving physiotherapy. *Physiotherapy*, 101(1), 50-54. <https://doi.org/https://doi.org/10.1016/j.physio.2014.06.004>
- Haupt, S., Wolf, A., & Heidenreich, H. (2021). Energy expenditure during eSports-. *Dtsch. Z. Sportmed*, 72, 36-40.
- Heinonen, K. (2018). Positive and negative valence influencing consumer engagement. *Journal of Service Theory and Practice*, 28(2), 147-169. <https://doi.org/10.1108/JSTP-02-2016-0020>
- 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. <https://doi.org/10.1007/s11747-014-0403-8>
- Holden, J. T., Edelman, M., & Baker III, T. A. (2020). A short treatise on esports and the law: How America regulates its next national pastime. *U. Ill. L. Rev.*, 509.
- Hollebeek, L. D., Sharma, T. G., Pandey, R., Sanyal, P., & Clark, M. K. (2022). Fifteen years of customer engagement research: a bibliometric and network analysis. *Journal of Product & Brand Management*, 31(2), 293-309. <https://doi.org/10.1108/JPBM-01-2021-3301>
- Hwang, H., Cho, G., & Choo, H. (2023). GSCA Pro for Windows User's Manual.
- Inoue, Y., Funk, D. C., & McDonald, H. (2017). Predicting behavioral loyalty through corporate social responsibility: The mediating role of involvement and commitment. *Journal of Business Research*, 75, 46-56. <https://doi.org/https://doi.org/10.1016/j.jbusres.2017.02.005>
- Islam, J. U., & Rahman, Z. (2016). The transpiring journey of customer engagement research in marketing. *Management Decision*, 54(8), 2008-2034. <https://doi.org/10.1108/MD-01-2016-0028>
- Johnson, M. D., Anderson, E. W., & Fornell, C. (1995). Rational and Adaptive Performance Expectations in a Customer Satisfaction Framework. *Journal of Consumer Research*, 21(4), 695-707. <https://doi.org/10.1086/209428>
- Jonasson, K., & Thiborg, J. (2010). Electronic sport and its impact on future sport. *Sport in society*, 13(2), 287-299.
- Karadakis, K., & Painchaud, M. M. (2022). Esport Knowledge, Skills, and Abilities: Perspectives from Subject Matter Experts. *Athens Journal of Sports*, 9(2), 79-100.
- Kim, J., & Kim, M. (2020). Spectator e-sport and well-being through live streaming services. *Technology in Society*, 63, 101401.
- Kim, K. (2008). Analysis of Structural Equation Model for the Student Pleasure Travel Market: Motivation, Involvement, Satisfaction, and Destination Loyalty. *Journal of Travel &*

- Tourism Marketing*, 24(4), 297-313. <https://doi.org/10.1080/10548400802156802>
- Kim, S.-S., & Lee, C.-K. (2002). Push and Pull Relationships. *Annals of Tourism Research*, 29(1), 257-260. [https://doi.org/10.1016/S0160-7383\(01\)00043-3](https://doi.org/10.1016/S0160-7383(01)00043-3)
- Kim, S. S., Lee, C.-K., & Klenosky, D. B. (2003). The influence of push and pull factors at Korean national parks. *Tourism Management*, 24(2), 169-180. [https://doi.org/10.1016/S0261-5177\(02\)00059-6](https://doi.org/10.1016/S0261-5177(02)00059-6)
- Klein, H. J., Molloy, J. C., & Brinsfield, C. T. (2012). Reconceptualizing Workplace Commitment to Redress a Stretched Construct: Revisiting Assumptions and Removing Confounds. *Academy of Management Review*, 37(1), 130-151. <https://doi.org/10.5465/amr.2010.0018>
- Kong, W. H., & Chang, T.-Z. (2016). Souvenir Shopping, Tourist Motivation, and Travel Experience. *Journal of Quality Assurance in Hospitality & Tourism*, 17(2), 163-177. <https://doi.org/10.1080/1528008X.2015.1115242>
- Kumar, V., Aksoy, L., Donkers, B., Venkatesan, R., Wiesel, T., & Tillmanns, S. (2010). Undervalued or Overvalued Customers: Capturing Total Customer Engagement Value. *Journal of Service Research*, 13(3), 297-310. <https://doi.org/10.1177/1094670510375602>
- Kumar, V., & Reinartz, W. (2016). Creating Enduring Customer Value. *Journal of Marketing*, 80(6), 36-68. <https://doi.org/10.1509/jm.15.0414>
- Lee, S., Seo, W. J., & Green, B. C. (2013). Understanding why people play fantasy sport: development of the Fantasy Sport Motivation Inventory (FanSMI). *European Sport Management Quarterly*, 13(2), 166-199. <https://doi.org/10.1080/16184742.2012.752855>
- Leung, S.-O. (2011). A Comparison of Psychometric Properties and Normality in 4-, 5-, 6-, and 11-Point Likert Scales. *Journal of Social Service Research*, 37(4), 412-421. <https://doi.org/10.1080/01488376.2011.580697>
- Luonila, M., Suomi, K., & Johansson, M. (2016). Creating a stir: the role of word of mouth in reputation management in the context of festivals. *Scandinavian Journal of Hospitality and Tourism*, 16(4), 461-483. <https://doi.org/10.1080/15022250.2015.1113646>
- Ma, H., Wu, Y., & Wu, X. (2013). Research on essential difference of e-sport and online game. *Informatics and management science V*,
- Manosuthi, N., Lee, J.-S., & Han, H. (2021). An Innovative Application of Composite-Based Structural Equation Modeling in Hospitality Research With Empirical Example. *Cornell Hospitality Quarterly*, 62(1), 139-156. <https://doi.org/10.1177/1938965520951751>
- McCauley, B., Tierney, K., & Tokbaeva, D. (2020). Shaping a Regional Offline eSports Market: Understanding How Jönköping, the 'City of DreamHack', Takes URL to IRL. *International Journal on Media Management*, 22(1), 30-48. <https://doi.org/10.1080/14241277.2020.1731513>
- Michellini, L., Iasevoli, G., & Theodoraki, E. (2017). Event venue satisfaction and its impact on sponsorship outcomes. *Event management*, 21(3), 319-331. <https://doi.org/10.3727/152599517X14942648527536>
- Morgan, R. M., & Hunt, S. D. (1994). The commitment-trust theory of relationship marketing. *Journal of marketing*, 58(3), 20-38.
- Mouratidis, K., & Doumi, M. (2021). The Effects of PUSH and PULL Factors on Spectators' Satisfaction Attitudes. A Mediation Analysis of Perceived Satisfaction from a Small-Scale Sport's Event. In V. Katsoni & C. van Zyl, *Culture and Tourism in a Smart, Globalized, and Sustainable World Cham*.
- Napontun, K., Lertwachara, K., Gulthawatvichai, T., Chutipongdech, T., Wattanawaraporn, R., Chuenpreecha, D., & Senachai, P. (2023). Captivating Spectators: Exploring the

- Influence of Marketing Mix Elements on Sports Event Engagement. *ABAC Journal*, 43(3), 286-306. <https://doi.org/10.59865/abacj.2023.43>
- Napontun, K., & Pimchainoi, K. (2023). The Influence of Marketing Promotion Tools on Customer Satisfaction and Repurchase Intention: A Study on TikTok Marketing Platform. *Service, Leisure, Sport, Tourism & Education*, 1(2), 1-25. <https://so09.tci-thaijo.org/index.php/BTSMM/article/view/1315>
- Napontun, K., & Senachai, P. (2023). Identifying Factors Influencing Consumers Not to Skip TrueView Advertising on YouTube. *ABAC Journal*, 43(1), 85-102. <https://doi.org/10.14456/abacj.2023.6>
- Ng, S. C., Sweeney, J. C., & Plewa, C. (2020). Customer Engagement: A Systematic Review and Future Research Priorities. *Australasian Marketing Journal*, 28(4), 235-252. <https://doi.org/10.1016/j.ausmj.2020.05.004>
- Nimako, S. G., & Ntim, B. A. (2013). Construct specification and misspecification within the application of push-pull-mooring theory of switching behaviour. *Journal of Business and Management Sciences*, 1(5), 83-95.
- Pansari, A., & Kumar, V. (2017). Customer engagement: the construct, antecedents, and consequences. *Journal of the Academy of Marketing Science*, 45(3), 294-311. <https://doi.org/10.1007/s11747-016-0485-6>
- Parihar, P., & Dawra, J. (2020). The role of customer engagement in travel services. *Journal of Product & Brand Management*, 29(7), 899-911.
- Pizzo, A., Baker, B., Na, S., Lee, M., Kim, D., & Funk, D. (2018). eSport vs sport: a comparison of spectator motives. *Faculty/Researcher Works*. <https://doi.org/10.34944/dspace/7093>
- Polas, M. R. H., Tabash, M. I., Afshar Jahanshahi, A., & Ahamed, B. (2022). Consumers' sustainable online purchase behaviour during COVID-19 pandemic: the role of relational benefit and site commitment. *foresight*, 24(3/4), 476-503. <https://doi.org/10.1108/FS-01-2021-0012>
- Prayag, G., & Hosany, S. (2014). When Middle East meets West: Understanding the motives and perceptions of young tourists from United Arab Emirates. *Tourism Management*, 40, 35-45. <https://doi.org/https://doi.org/10.1016/j.tourman.2013.05.003>
- Prayag, G., & Ryan, C. (2011). The relationship between the 'push' and 'pull' factors of a tourist destination: the role of nationality – an analytical qualitative research approach. *Current Issues in Tourism*, 14(2), 121-143. <https://doi.org/10.1080/13683501003623802>
- Pu, H., Xiao, S., & Kota, R. W. (2022). Virtual games meet physical playground: exploring and measuring motivations for live esports event attendance. *Sport in society*, 25(10), 1886-1908.
- Qian, T. Y., Wang, J. J., & Zhang, J. J. (2020). Push and Pull Factors in E-Sports Livestreaming: A Partial Least Squares Structural Equation Modeling Approach. *International Journal of Sport Communication*, 13(4), 621-642. <https://doi.org/10.1123/ijsc.2020-0001>
- Qian, T. Y., Zhang, J. J., Wang, J. J., & Hulland, J. (2020). Beyond the Game: Dimensions of Esports Online Spectator Demand. *Communication & Sport*, 8(6), 825-851. <https://doi.org/10.1177/2167479519839436>
- Randstad, U. (2016). Gen Z and Millennials Collide at Work. *accessed February*, 25, 2021.
- Rehman, S. U., Bhatti, A., Mohamed, R., & Ayoup, H. (2019). The moderating role of trust and commitment between consumer purchase intention and online shopping behavior in the context of Pakistan. *Journal of Global Entrepreneurship Research*, 9(1), 43. <https://doi.org/10.1186/s40497-019-0166-2>
- Richter, N. F., Schubring, S., Hauff, S., Ringle, C. M., & Sarstedt, M. (2020). When predictors of outcomes are necessary: guidelines for the combined use of PLS-SEM and NCA. *Industrial Management & Data Systems*, 120(12), 2243-2267. <https://doi.org/10.1108/IMDS-11-2019-0638>

- Rungroueng, T., & Monpanthong, P. (2023). A Confirmation of Elemental Factor Toward Perceived Port Quality. *ABAC Journal*, 43(4), 113-134.
- Senachai, P., Julagasigorn, P., & Chumwichan, S. (2023). The Role of Retail Mix Elements in Enhancing Customer Engagement: Evidence from Thai Fast-Moving Consumer Goods Retail Sector. *ABAC Journal*, 43(2), 106-124. <https://doi.org/10.14456/abacj.2023.18>
- Seyanont, A. (2017). Travel motivation and intention to revisit of European senior tourists to Thailand. *Universal Journal of Management*, 5(8), 365-372.
- Snepenger, D., King, J., Marshall, E., & Uysal, M. (2006). Modeling Iso-Ahola's Motivation Theory in the Tourism Context. *Journal of Travel Research*, 45(2), 140-149. <https://doi.org/10.1177/0047287506291592>
- So, K. K. F., King, C., & Sparks, B. (2014). Customer engagement with tourism brands: Scale development and validation. *Journal of Hospitality & Tourism Research*, 38(3), 304-329.
- Statista. (2023). *Esports - Thailand*. <https://www.statista.com/outlook/amo/esports/thailand>
- Tabrani, M., Amin, M., & Nizam, A. (2018). Trust, commitment, customer intimacy and customer loyalty in Islamic banking relationships. *International Journal of Bank Marketing*, 36(5), 823-848.
- Thiem, A., & Dusa, A. (2012). *Qualitative comparative analysis with R: A user's guide* (Vol. 5). Springer Science & Business Media.
- 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. <https://doi.org/10.1177/1094670510375599>
- van Tonder, E., & Petzer, D. J. (2018). The interrelationships between relationship marketing constructs and customer engagement dimensions. *The Service Industries Journal*, 38(13-14), 948-973. <https://doi.org/10.1080/02642069.2018.1425398>
- Verhoef, P. C., Reinartz, W. J., & Krafft, M. (2010). Customer engagement as a new perspective in customer management. *Journal of Service Research*, 13(3), 247-252.
- Wattanacharoensil, W., Lee, J.-S., Fakfare, P., & Manosuthi, N. (2023). The multi-method approach to analyzing motivations and perceived travel risks: impacts on domestic tourists' adaptive behaviors and tourism destination advocacy. *Journal of Travel & Tourism Marketing*, 40(2), 109-130. <https://doi.org/10.1080/10548408.2023.2215266>
- Wattanapisit, A., Wattanapisit, S., & Wongsiri, S. (2020). Public Health Perspectives on eSports. *Public Health Reports*, 135(3), 295-298. <https://doi.org/10.1177/0033354920912718>
- Wiener, Y. (1982). Commitment in Organizations: A Normative View. *Academy of Management Review*, 7(3), 418-428. <https://doi.org/10.5465/amr.1982.4285349>
- Yinuo, Z., & Runzhen, L. (2022, 2022/03/26). Economic Sources behind the Esports Industry. Proceedings of the 2022 7th International Conference on Financial Innovation and Economic Development (ICFIED 2022),
- Zhang, M., Ren, C., Wang, G. A., & He, Z. (2018). The impact of channel integration on consumer responses in omni-channel retailing: The mediating effect of consumer empowerment. *Electronic commerce research and applications*, 28, 181-193.
- Zhang, Y., & Byon, K. K. (2017). Push and pull factors associated with the CTTSL game events between on-site and online consumers. *International Journal of Sports Marketing and Sponsorship*, 18(1), 48-69. <https://doi.org/10.1108/IJSMS-04-2016-0007>