The "why" behind generation Y amateur gamers' ongoing eSports gameplay intentions

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Abstract

Purpose – Technological advancements in games increased the popularity of online gaming. The rapid expansion of the eSports market may largely be attributed to the ever-increasing popularity amongst Generation Y amateur gamers. The primary objective of this study is to determine the factors influencing Generation Y amateur gamers' ongoing eSports gameplay intentions.

Design/methodology/approach – This study used the extended unified theory of acceptance as the theoretical framework. Data analysis included exploratory principal component analysis, confirmatory factor analysis and path analysis.

Findings – The results of the confirmatory factor analysis suggest that Generation Y amateur gamers' ongoing eSports gameplay intentions is an eight-factor model that is reliable, valid and has acceptable model fit. The results of the path analysis indicate that habit, price-value, flow, effort expectancy and facilitating conditions have a statistically significant positive influence on amateur gamers' ongoing eSports gameplay intentions, whilst social influence and hedonic motivation have a negative but non-significant influence on those intentions.

Research limitations/implications – The sample was formed using only amateur eSports gamers. In this regard, the opportunity exists to research professional eSports gamers. This study only focussed on Generation Y members between 18 and 36 years old. As a result, there is an opportunity for researchers to research the different generations of South African eSports gamers to determine whether there are any differences or similarities between generational segments.

Practical implications – The results of this study clearly indicate that flow, together with habit are salient contributors to ongoing gameplay intentions amongst amateur eSports gamers in South Africa. A reasonable assumption that can be made here is that flow is also instrumental in encouraging habitual gaming, which increases the importance of flow in overall ongoing gameplay intentions. This suggests that R&D expenditure should be directed at enhancing user engagement by building increased levels of flow into eSports games.

Social implications – eSports game developers can also achieve a desired state of flow by creating daily challenges that reward players when the players achieve specific objectives, which will encourage gamers to enter a state of flow when provided with challenges to complete. However, these in-game challenges should have a variety of levels regarding difficulty, ranging from beginner, intermediate and advanced levels so as not to exceed the effort expectancy of different groups of players. Game developers should provide regularly updated challenges to gamers to ensure that eSports games remain enjoyable and does not become predictable.

Originality/value – Given the nascence of research on eSports behaviour, the results of this study provide a novel addition to the knowledge pool, particularly in terms of amateur eSports behavioural intentions. Interestingly, hedonic motivation and social influence were non-significant negative predictors of Generation Y

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amateur gamers' ongoing eSports gameplay intentions. The recommendations provide various marketing strategies and opportunities for eSports business expansion.

1. Introduction

The technological advancements over the last decade have led to significant advancements in data analytics, media, wearable devices, stadium and fan engagement, sponsorship and eSports (electronic sports) (World Economic Forum, 2018). eSports are described as organised video gaming where participants compete on various virtual platforms (Candela and Jakee, 2018) and have grown in popularity in recent years (Gawrysiak *et al.*, 2020). The significant growth experienced within the eSports domain may be attributed to the progression in computer-mediated media and information technology, where novel technology uses have been incorporated into video games (Sjöblom and Hamari, 2017). The eSports industry is continuously flourishing, with competitive gaming as a professional sport and a viable career option for participants enjoying the many rewards the sport offers (Faust *et al.*, 2013; Funk *et al.*, 2018). In this regard, eSports have become a vital and popular aspect of video gaming communities, particularly amongst adolescents and young adults (Bányai *et al.*, 2019). Accordingly, eSports have emerged as one of the most rapidly developing forms of new media, inspired by the increased prevalence of online gaming and broadcasting technologies amongst the younger generations (Warr, 2014). In addition, the social and participation restrictions of normal sports created during the COVID-19 pandemic lockdown implemented by governments worldwide largely decimated the possibilities for live sporting events due to the postponement or cancellation of events and the discontinuation of various forms of sporting events (Lehnert *et al.*, 2020). The effect of these COVID-19 restrictions on traditional sports provided a platform for eSports' exponential growth in popularity, where live streaming of video games and online participation in competitions continued regardless of the pandemics' physical restrictions (Goldman and Hedlund, 2020).

The amateur eSports market has experienced significant growth worldwide, with the pandemic and global lockdowns playing a substantial role in expanding the amateur eSports market (Panhans *et al.*, 2021). In this regard, amateur gamers' interest and participation in eSports have contributed to the rapid expansion of the eSports market (Gough, 2020). Accordingly, the younger generations who grew up playing video games are expected to mature in this market, leading to further growth in the amateur eSports market in terms of amateur players' interest and participation (Newzoo, 2021). The significant and rapidly expanding user base contributes to this dramatic growth in the amateur eSports market, with amateur gamers more willing to spend money to participate in eSports games (Panhans *et al.*, 2021). Generation Y is the largest consumer group of eSports gaming (Bányai *et al.*, 2019). Generation Y encompasses individuals born between 1986 and 2005 (Markert, 2004). As a consumer segment, adult Generation Y members account for a noteworthy size of the world's current population of 7.9 billion people, with individuals aged 18–36 years in 2021 accounting for 38% of that figure (Clement, 2021; Worldometer, 2021). Much of this generation's interest in eSports may be ascribed to their digital astuteness, which is a product of the fact that they were raised in a digitally connected world (Dickey and Lewis, 2010). Generation Y constitutes most of the global eSports gamers, including amateur gamers, so it is an opportunistic segment to investigate for future market expansion by eSports' developers, manufacturers and retailers (Gough, 2020). Considering the aforementioned opportunities, this study

focusses on the potential factors influencing adult Generation Y amateur eSports gamers' ongoing gameplay intentions within the South African context. The salience of engaging in this line of research is substantiated by Bányai et al. (2019), who posit that within the South African market, Generation Y is the most likely market segment to engage in eSports gaming, which reiterates their potential as a current and ongoing target market for stakeholders in the eSports sector.

2. Background and research problem
The domain of eSports gaming is universally perceived as currently being the world's fastest-growing sport (Hagan, 2021). While the eSports industry shares certain similarities and trends with traditional sports, it is also evident that the eSports market is unique in many ways (Zhang, 2020). With the rapid growth of the eSports industry over the last decade, several market players are seeking to identify strategic business opportunities in this potentially highly lucrative market (Lundberg and Smith, 2021). Businesses involved in or seeking to enter the eSports gaming market must develop and implement specific and clear business strategies to attract, grow and maintain a profitable consumer base (Martí-Parreño et al., 2017). Developing such business strategies necessitates a clear and in-depth understanding of the sector's current and potential future target markets (Newman et al., 2020). However, there is a paucity of research on amateur gamers' ongoing gameplay intentions, despite this being linked to the strategic imperative of creating and maintaining a loyal customer-user base in the industry (Willett, 2018). As indicated in the introduction, Generation Y gamers, including amateur gamers, currently constitute the largest and, therefore, most essential eSports market segment. This segment's ongoing engagement with eSports gaming is a strategic imperative to the competitive growth and sustainability of role players competing in this sector. This suggests a need to ascertain the factors that potentially influence Generation Y eSports gamers' ongoing gameplay intentions. The domain of eSports is a relatively new research field regarding sports consumer behaviour (Funk, 2017), and while existing theoretical models about behavioural intentions towards traditional sports may apply to eSports (Pizzo et al., 2018), there is a need to develop specific models predicting eSport gaming intentions, including amateur Generation Y gamers' ongoing gaming intentions. The development of such models will contribute to designing more effective eSports gaming business strategies targeting the salient Generation Y segment. Owing to a lack of research on eSports gameplay intentions, the topic may have to be viewed from the perspective of the consumption chain (Jang et al., 2021).

As such, the primary objective of this study was to determine the factors influencing Generation Y amateur gamers' ongoing eSports gameplay intentions. This included validating Generation Y amateur gamers' ongoing eSports gameplay intentions as an eight-factor model and determining whether Generation Y amateur gamers' ongoing eSports gameplay intentions are determined by their perceptions of the effort expectancy, social influence, facilitating conditions, hedonic motivation, price-value, habit and flow involved in eSports gameplay.

3. Theoretical framework
The choice of which business strategy to pursue largely depends on the industry's lifecycle stage, competitive structure and the business' relative strengths (Walker and Mullins, 2011). Paramount to any business strategy's success is a clear understanding of the business' current and potential target markets' needs, wants and desires. To this end, comprehending future and current target markets' behavioural intentions regarding planned use or continued use of the business' market offerings is essential (Schiffman et al., 2010).

Behavioural intentions refer to an individual's likelihood of engaging in a specific behaviour (Ajzen, 2011). The strategic importance of gauging and predicting a business' current and future target markets' consumption-related behavioural intentions has led to the development of several behavioural intention models, including the theory of reasoned action (Fishbein and Ajzen, 1975), the technology acceptance model (Davis *et al.*, 1989), the theory of planned behaviour (Ajzen, 1991), the innovation diffusion theory (Rogers, 1995), the unified theory of acceptance and use of technology (Venkatesh *et al.*, 2003) and the extended unified theory of acceptance and use of technology (Venkatesh *et al.*, 2012). The unified theory of acceptance and use of technology, which includes the dimensions of usage behaviour, behavioural intentions, performance expectancy, effort expectancy, social influence and facilitating conditions (Venkatesh *et al.*, 2003), was tailored to the consumer technology context with the inclusion of the additional dimensions of hedonic motivation, price-value and habit to create Venkatesh *et al.*'s (2012) extended unified theory of acceptance and use of technology (UTAUT2). Wong *et al.* (2021) indicate that this theory is amongst the most comprehensive models for predicting consumer behavioural intentions towards and usage of information technology. Jang and Byon (2020) add that this model as an important framework for understanding eSports gaming behavioural intentions.

Although the seven predictors of behavioural intentions in the UTAUT2 model are widely accepted, for the purpose of this study, performance expectancy was excluded, since amateur gamers continuously participate in eSports games and, as such, know the performance of the technology; that is, this dimension is unlikely to influence their ongoing gaming behavioural intentions. This reasoning is in line with that of Jang and Byon (2020). Instead, this dimension was replaced with the flow dimension, which is viewed as a more salient predictor of behavioural intentions in the domain of eSports behaviour (Jang and Byon, 2020; Faiola *et al.*, 2013; Shin and Shin, 2011).

With this in mind, the proposed measurement model in this study utilised the extended unified theory of acceptance and use of technology as its theoretical framework, with the exclusion of performance expectancy but the inclusion of an additional dimension, namely flow. Accordingly, the following hypothesis is stated.

> *Ha1.* Generation Y amateur gamers' ongoing eSports gameplay intentions is an eight-factor model that includes the latent factors of ongoing eSports gameplay intentions, effort expectancy, social influence, facilitating conditions, hedonic motivation, price-value, habit and flow.

The seven proposed predictors of Generation Y amateur gamers' ongoing eSports gameplay intentions are discussed in the following sections.

3.1 Effort expectancy

Effort expectancy is defined as the level of ease associated with using a system (Venkatesh *et al.*, 2003). According to Jang and Byon (2021), effort expectancy measures how easily eSports games can be learnt and played competitively. When the adoption procedure becomes too complicated, individuals may relinquish their time and effort required to participate in adopting technology and, therefore, refrain from participating in eSports games (Jang and Byon, 2020). To this end, tutorials may help beginner players to adapt to new gaming environments (Jang and Byon, 2021). According to previous research, effort expectancy significantly influences eSports gameplay intentions (Jang *et al.*, 2021; Jang and Byon, 2020), including their ongoing eSports gameplay intentions (Marcelino *et al.*, 2021). Therefore, the following hypothesis concerning effort expectancy is stated.

> *Ha2.* Generation Y amateur gamers' effort expectancy has a direct positive influence on their ongoing eSports gameplay intentions.

3.2 Social influence

The concept of social influence is defined as the influence that significant others have on a person's beliefs concerning utilising a new device, technology or system (Venkatesh *et al.*, 2003). Considering that eSports video games have become viral amongst today's young adult segment, Generation Y individuals are likely to encourage one another to participate in eSports games as a form of social inclusion and engagement (Lee and Schoenstedt, 2011). However, when eSports gaming is stigmatised as being an addictions and/or as an activity that takes time away from significant others, then the social influence may be negative; that is, significant others may not approve of Generation Y individuals' eSports gaming (Jang *et al.*, 2021). As a result, eSports consumers will be more interested in playing a particular eSports game if they can do so with their friends and family (Jang and Byon, 2020). While Macey *et al.* (2022) found social influence to be an insignificant predictor and even, in the case of Jang and Byon (2020) and Jang *et al.* (2021), a negative influence of eSports gameplay intentions, other studies report it as being a significant positive predictor thereof (Marcelino *et al.*, 2021; Choi and Kim, 2004). Therefore, the following hypothesis concerning social influence is stated.

Ha3. Generation Y amateur gamers' social influence has a direct positive influence on their ongoing eSports gameplay intentions.

3.3 Facilitating conditions

Facilitating conditions refer to the degree of confidence an individual has in the existence of an appropriate organisational and technical infrastructure to enable the use of a system (Venkatesh *et al.*, 2003). Facilitating conditions include aspects such as access to the Internet as well as a fast Internet speed. According to Venkatesh *et al.* (2012), the likelihood of a consumer utilising technology is higher if they have access to favourable facilitating conditions. While Jang and Byon (2020) elected to exclude this dimension from their study, Jenny *et al.* (2017, p. 6) observe that "technical issues may hinder some participants from regions of the world with less developed computing infrastructures from successfully engaging in Internet-based competition" such as eSports. In emerging economies such as South Africa where stunted eSports industry growth has been attributed to factors such as exorbitant data costs, high gaming equipment prices, limited access to stable Internet infrastructure, a lack of local servers and daily power outages (De Vries, 2022), facilitating conditions is likely to be a contributing factor to Generation Y amateur gamers' ongoing eSports gameplay intentions.

Therefore, the following hypothesis concerning facilitating conditions is stated.

Ha4. Generation Y amateur gamers' facilitating conditions have a direct positive influence on their ongoing eSports gameplay intentions.

3.4 Hedonic motivation

Hedonic motivation is defined as the enjoyment or pleasure derived from using technology (Brown and Venkatesh, 2005). Hedonic motivation includes a need for social relationships, which refers to the motivation of players to play games to gain social recognition (Weiss, 2011). The advent of eSports gaming events has dramatically transformed how many individuals entertain themselves from the comfort of their homes (Hewitt, 2014), since the growth of eSports is amongst the most promising forms of current entertainment (Southern, 2017). Most eSports consumers are fans who play eSports games voluntarily based on their interests, escapism and fun (Jang and Byon, 2020). Factors that contribute to hedonic motivation concerning digital games include ease of use, novelty, design aesthetic and challenge (Merikivi *et al.*, 2017). Previous research reports that hedonic motivation has

a significant positive impact on eSports gameplay intentions (Marcelino *et al.*, 2021; Jang and Byon, 2020; Shin and Shin, 2011; Hsiao and Chiou, 2012). However, Jang and Byon (2020) found that, in comparison to hedonic motivation, flow makes a far stronger contribution to predicting ongoing eSports gaming intentions. Within the context of eSports games, hedonic motivation may play a significant role in influencing gamers' gameplay intentions. Therefore, the following hypothesis concerning hedonic motivation is stated.

Ha5. Generation Y amateur gamers' hedonic motivation has a direct positive influence on their ongoing eSports gameplay intentions.

3.5 Price-value
Price-value refers to the consumer's willingness to exchange monetary cost for perceived benefits in eSports gameplay (Venkatesh *et al.*, 2012). This factor within the extended unified theory of acceptance and use of technology model indicates that eSports consumers will pay any price, if it is worth the price, regardless of how cheap or expensive the product or service is (Samuel, 2017). Samuel (2017), together with Jang and Byon (2020) suggest the use of the free-to-play model, whereby consumers can initially play eSports games free but will, in time, need to purchase in-game content in order to fully enjoy the game. When perceptions of price-value are positive, when the benefits of using a particular technology such as, in the case of this study, eSports games and equipment, are perceived to be greater than their monetary cost and this will have a positive influence on behavioural intention (Venkatesh *et al.*, 2012). Jang and Byon (2020) report price-value as being a significant positive predictor of eSports gameplay intentions. Therefore, the following hypothesis concerning price-value is stated.

Ha6. Generation Y amateur gamers' price-value perceptions have a direct positive influence on their ongoing eSports gameplay intentions.

3.6 Habit
A habit is defined as the degree to which people can perform certain behaviours automatically due to experience (Venkatesh *et al.*, 2012). eSports games often include in-game systems that provide consumers with daily or weekly challenges, which encourage consumers to play games on a more regular basis (Ballanger, 2018). As a result, when consumers frequently play eSports games, they may develop a habit of participating in eSports (Hamzan, 2020). Habit involves both prior use and automatic behaviour, where prior use is an important predictor of future technology use (Venkatesh *et al.*, 2012), in this case, ongoing eSports gaming intentions. In a study on social network games, Wohn (2012) concluded that habit is a strong predictor of consumer's behavioural intention regarding playing games on Facebook. While Jang and Byon (2020) found habit to be an insignificant predictor of eSports game play intentions, Jang *et al.* (2021) found it to be a significant and strong predictor of gameplay intentions amongst both high and low frequency eSports players. Therefore, the following hypothesis concerning habit is stated.

Ha7. Generation Y amateur gamers' habit has a direct positive influence on their ongoing eSports gameplay intentions.

3.7 Flow
While flow was not part of the extended unified theory of acceptance and use of technology (Venkatesh *et al.*, 2012), it is viewed as an essential aspect of gameplay (Faiola *et al.*, 2013) and, as such, following the example of Jang and Byon (2020), was included in this study. A state of flow is when a person is completely engaged in what he or she is doing, and feelings of completely engaged focus characterise it full participation and success while engaging in the

activity (Shin, 2010). eSports gamers experience flow when fully immersed in the gameplay, creating a feeling of being inside their chosen game's virtual world (Jang and Byon, 2021). The responsiveness of the feedback received in an eSports game along with the use images and sound to create a sense of vividness are likely to contribute to creating a telepresence experience; that is, a sense of being present in and moving seamlessly through the virtual location. This telepresence together with building a sufficient degree of available challenges into each gameplay level in order to focus players' attention on honing the skills required to move through a continuum of skill levels will contribute to creating a sense of flow (Faiola et al., 2013). Previous research studies report that flow is a significant positive predictor of virtual gameplay intentions (Lee et al., 2020; Liu et al., 2018; Shin and Shin, 2011), including eSports gameplay intentions (Jang and Byon, 2020). Therefore, the following hypothesis concerning flow is stated.

Ha8. Generation Y amateur gamers' flow has a direct positive influence on their ongoing eSports gameplay intentions.

4. Methodology
As the primary purpose of this study was to ascertain empirically the factors influencing Generation Y amateur gamers' ongoing eSports gameplay intentions in South Africa using previously validated scales, a descriptive research design was followed with a single cross-sectional sample.

4.1 Sampling
The sample size for this study was 350 Generation Y amateur eSports gamers. This sample size adheres to the guidelines for conducting exploratory principal component analysis and structural equation modelling. Exploratory principal component analysis requires a minimum of five data points per item (Malhotra, 2020). Structural equation modelling necessitates between 300 and 500 observations for models containing more than seven constructs, each with three or more indicators (Hair et al., 2010). In this study, scaled responses include 29 indicators divided into eight constructs. The 15 amateur eSport gamers known to the researcher were asked to share the electronic questionnaire on various social media platforms, where it was assumed that if each of the 15 gamers shared it with at least 23 other gamers, the target number of 350 participants for the study would be achieved. The final sample size achieved was 327 respondents. This research study adhered to the guidelines of the NWU Research Ethics Committee and the Declaration of Helsinki standards (ethics clearance number: NWU 00663–22-A4).

4.2 Data collection
Data collection was done by distributing the questionnaire on an online platform (Google Forms), where the researcher sent the questionnaire link via WhatsApp or email to 15 acquaintances who are amateur eSports gamers. After completing and submitting the online questionnaire, these acquaintances were requested to forward the link to other eSports gamers at their respective eSports clubs and/or organisations using WhatsApp and other social networking platforms. In this manner, the snowball sampling method was used to collect the required data. Those gamers who voluntarily clicked on the link and completed the questionnaire could submit their responses to the researcher anonymously. The online questionnaire included a landing page with a cover letter that stated the nature and objective of the research study, indicating that participation is voluntary and that their identities would remain anonymous. In addition, participants were informed that they could withdraw from

the study at any time if they wished to do so and that data would be used for research purposes (published). The online questionnaire landing page provided an informed consent statement, which participants had to click on to proceed with the questionnaire. The contact details of the researcher and his supervisors were also provided, and participants were informed that they could contact any of the researchers for more information on the study or to receive the results in aggregate format.

4.3 Instrument
To obtain the essential data for this research topic, a self-administered electronic questionnaire using Google Forms was used. To establish the factors influencing Generation Y amateur gamers' eSports gameplay intentions to participate within the South African context, the measuring instrument consisted of existing scales from previously published studies on technology acceptance and use within eSports. In this regard, effort expectancy, social influence, facilitating conditions and eSports gameplay intentions were measured using the scales from Venkatesh *et al.* (2012), adapted from Venkatesh *et al.* (2003). Habit was measured by the scale items from Venkatesh *et al.* (2012), adapted from Limayem and Hirt (2003), while hedonic motivation was measured using the scale from Venkatesh *et al.* (2012). The price-value scale of Venkatesh *et al.* (2012), which was adapted from Dodds (1991), was used to measure the perceptions of eSports game value, while flow was measured using the scale from Faiola *et al.* (2013), which was adapted from Csikszentmihalyi (1975).

Participants were required to complete a three-section questionnaire with screening questions. The purpose of the two screening questions was to determine whether participants were active eSports gamers (Do you currently play eSports games? Yes/No) and at an amateur level (What level of gamer do you consider yourself to be? Amateur/Professional). The first section was designed to gather demographic information from the participants. This demographic information was used for sample description purposes. The second section was designed to gather background information from participants regarding their eSports gaming participation to determine individual interests and engagement related to their preferred eSports genre, frequency, gaming device used; and the like the third section consisted of the 29-item scale, measuring eight constructs. In terms of the psychometric properties, Venkatesh *et al.* (2012) reported a Cronbach alpha of 0.91 for the effort expectancy scale (four items), an alpha of 0.82 for the social influence scale (three items), an alpha of 0.75 for the facilitating conditions scale (five items), an alpha of 0.86 for the hedonic motivation scale (four items), an alpha of 0.85 for the price-value scale (three items), an alpha of 0.82 for the habit scale (three items) and an alpha of 0.93 for the behavioural intentions scale (three items). Faiola *et al.* (2013) reported a Cronbach alpha of 0.88 for the flow scale (three items). All scaled responses were evaluated using a six-point Likert scale ranging from 1 = strongly disagree to 6 = strongly agree.

4.4 Data analysis
The collected data was analysed using the Social Sciences Statistical Package (SPSS) and Analysis of Moment Structures (AMOS), Versions 27.0 for Windows. The statistical approaches used on the empirical dataset included exploratory principal component analysis, confirmatory factor analysis, including reliability, validity and model fit measures and path analysis.

5. Results and discussion
5.1 Sample description
This section describes the 327 participants' highest qualification, originating province, gender and age. Table 1 presents an outline of the sample description of participants in this study.

Gender	%	Age	%	Province	%
Male	81.3	18	7.6	Gauteng	37.0
Female	18.4	19	9.5	Free State	28.7
Non-binary	0.3	20	13.5	Northern Cape	12.5
		21	5.8	Kwazulu-Natal	7.6
Highest qualification	*%*	22	7.0	Western Cape	6.4
Matric certificate	41.0	23	9.8	Eastern Cape	3.4
Degree	30.0	24	10.1	Limpopo	2.4
Diploma	19.0	25	9.5	North-West	0.9
Post-graduate	9.0	26	7.6	Mpumalanga	0.9
		27	6.1		
		28	2.8		
		29	4.3		
		30	2.4		
		31	0.9		
		32	0.6		
		33	0.9		
		34	1.5		
		35	0.0		
		36	0.0		

Source(s): Created by authors

Table 1.
Sample description of generation Y amateur gamers

As shown in Table 1, a significant proportion of participants were male (81.3%) compared to female participants (18.4%). Of the participants, 0.3% chose the non-binary option. The majority of respondents were between the ages of 18 and 27 (86.5%), with a large number indicating their age as 20 years (13.5%). A total of 13.4% of the sample were between 28 and 34 years, with no participants aged 35 and 36 years. In this study, all nine provinces of South Africa were represented, with the majority of participants (37%) being from Gauteng. Furthermore, the majority of the sample (41.3%) comprised participants who obtained a matric certificate and the second largest portion of the sample (30%) comprised participants with a university degree. In addition, 19.3% of participants had a diploma, and 8.6% had a post-graduate qualification, while 0.9% of participants reported other types of qualifications, such as a red seal certification and one participant indicated having no qualifications.

5.2 eSports gamers' usage behaviour
Table 2 outlines eSports gamers' usage behaviour in this study.

As shown in Table 2, 48.8% of participants indicated enjoyment was their primary motivation for playing eSports games. This is followed by social opportunities (19.5%), excitement (13.5%), relaxation (7.3%) and sport (9.8%), while 1.5% reported other types of motivations, such as boredom and competitiveness. Most participants (30.3%) indicated the first-person shooter type game as their favourite eSports game genre, followed by multiplayer online battle arena (20.8%). In addition, 15.9% of participants selected the real-time strategy as their favourite eSports game genre. The sport game genre accounted for 14.7% of the participants' favourite genre, while role-playing (5.5%), action-adventure (4.3%) and puzzlers and party games (3.7%) followed. Simulation (2.1%) and survival and horror (2.1%) represented a relatively small percentage of the participants' favourite genres, while 0.6% reported other types of eSports game genres such as rocket league and strategy as their favourites. Furthermore, 38.8% of participants played eSports games three to six times a week, 19.3% once a week, followed by 18.3% of participants who indicated that they play eSports games daily. A total of 16.8% of participants showed that they play eSports games

Motivation for playing eSports games	%	Favourite eSports gaming genre	%	Frequency of eSports gameplay	%
Enjoyment	48.8	First-person shooter	30.3	Everyday	18.3
Social opportunities	19.5	Multiplayer online battle arena	20.8	3 to 6 times a week	38.8
Excitement	13.5	Real-time strategy	15.9	Twice a week	6.7
Relaxation	7.3	Sport	14.7	Once a week	19.3
Sport	9.8	Role-playing	5.5	Once a month or less	16.8
Other	1.5	Action-adventure	4.3		
		Puzzlers and party games	3.7	**Experience**	%
Preferred gaming device	%	Simulation	2.1	<1 years	9.8
Gaming console	50.8	Survival and horror	2.1	2–3 years	19.6
PC	33.0	Other	0.6	4–5 years	20.2
Laptop	8.0			6–7 years	17.4
Smartphone	6.1			8–9 years	13.8
Tablet	2.1			10–11 years	9.2
				12 years	1.2
				>12 years	8.9

Table 2.
eSports gamers' usage behaviour

Source(s): Created by authors

once a month or less, while 6.7% of participants played eSports games twice a week. The majority of participants (50.8%) prefer to play eSports games on a gaming console, followed by a personal computer (PC) (33%). A further 8% of participants reported that a laptop was their preferred gaming device, while 6.1% indicated that they preferred a smartphone and 2.1% preferred a tablet. The majority of participants indicated that they have been playing eSports games for four to five years (20.2%), followed closely by those who have been playing for two to three years (19.6%). Of the participants, 17.4% indicated that they have been playing for six to seven years, 13.8% for eight to nine years, 9.8% for one year or less and 9.2% for 10–11 years. Only 1.2% indicated that they had been playing for 12 years, while 8.9% indicated that they had been playing for more than 12 years.

5.3 Exploratory component analysis
Analysis of the 29 scaled-response items in Section C commenced with exploratory principal components analysis using varimax rotation to check for any items that cross-loaded or loaded onto factors contrary to the theory. The dataset was assessed to check the factorability of the data using the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity, where a KMO index value of 0.60 and above, in conjunction with a significant Bartlett's test of sphericity, is viewed as appropriate (Hair *et al.*, 2010). The results of both tests were satisfactory [KMO = 0.876, chi-square Bartlett's test = 5749.583 (df = 406), $p = 0.000 < 0.05$], confirming the suitability of the data for principal components analysis. Table 3 presents the results of the exploratory principal component analysis.

The results presented in Table 3 show that eight factors with eigenvalues greater than 1.00 were extracted, which accounted for 75.17% of the total variance. These eight factors are in line with the underlying theory, with facilitating conditions explaining the highest percentage of variance (31.16%), followed by hedonic motivation (9.52%), effort expectancy (7.72%), flow (6.73%), social influence (6.36%), price-value (5.78%), habit (3.98%) and eSports gameplay intentions (3.92%). All rotated factor loadings are greater than 0.5, indicating their statistical and practical significance. In addition, all communalities' values are greater than 0.5, indicating that all components' items are well aligned (Hair *et al.*, 2010).

Items	Factors 1	2	3	4	5	6	7	8	Communalities
C1		0.795							0.697
C2		0.845							0.774
C3		0.845							0.773
C4		0.815							0.749
C5							0.747		0.745
C6							0.847		0.846
C7							0.835		0.824
C8						0.810			0.773
C9						0.846			0.844
C10						0.828			0.806
C11			0.771						0.700
C12			0.819						0.743
C13			0.825						0.789
C14			0.752						0.685
C15					0.844				0.775
C16					0.878				0.823
C17					0.854				0.781
C18				0.706					0.605
C19				0.822					0.783
C20				0.840					0.800
C21				0.752					0.669
C22	0.751								0.636
C23	0.839								0.754
C24	0.847								0.795
C25	0.807								0.738
C26	0.781								0.704
C27								0.776	0.702
C28								0.783	0.777
C29								0.736	0.710
Eigenvalues	9.04	2.76	2.24	1.95	1.85	1.68	1.15	1.14	
Percentage of variance	31.16	9.52	7.72	6.73	6.36	5.78	3.98	3.92	
Cumulative percentage variance	31.16	40.68	48.40	55.13	61.49	67.27	70.65	75.17	

Source(s): Created by authors

Table 3.
Exploratory principal component analysis

5.4 Confirmatory factor analysis

Given the eight factors extracted in the exploratory principle component analysis, confirmatory factor analysis was conducted on an eight-factor measurement model that includes the latent factors of ongoing eSports gameplay intentions, effort expectancy, social influence, facilitating conditions, hedonic motivation, price-value, habit and flow. For model identification purposes, the first loading onto each of the eight latent factors was fixed at 1.0 (Byrne, 2010), which resulted in 435 distinct sample moments and 86 distinct parameters, which equate to 349 degrees of freedom (DF) for an over-identified model and a chi-square value of 616.376 with a probability level of 0.000. While a significant chi-square suggests poor model fit, this fit index is known to be susceptible to large sample sizes, such as the one used in this study. As a result, additional model fit indices were used, which included the IFI, TLI, CFI, SRMR and RMSEA. The returned measurement model estimates are reported in Table 4. These estimates include the standardised loading estimates, the R^2 values, the Cronbach alphas (a), CR values, AVE values and the squared root of the AVE values ($\sqrt{\text{AVE}}$).

Latent factors	Standardised loading estimates	R^2	a	CR	AVE	$\sqrt{}$AVE
Hedonic motivation (F1)	0.737	0.543	0.881	0.881	0.650	0.81
	0.808	0.652				
	0.843	0.711				
	0.834	0.695				
Habit (F2)	0.809	0.654	0.878	0.880	0.709	0.84
	0.858	0.736				
	0.858	0.736				
Price-value (F3)	0.794	0.631	0.873	0.875	0.701	0.84
	0.890	0.792				
	0.825	0.680				
Effort expectancy (F4)	0.763	0.582	0.871	0.873	0.633	0.80
	0.784	0.614				
	0.864	0.746				
	0.767	0.588				
Social influence (F5)	0.805	0.647	0.864	0.865	0.681	0.83
	0.863	0.745				
	0.806	0.650				
Flow (F6)	0.689	0.475	0.860	0.865	0.618	0.79
	0.836	0.699				
	0.861	0.741				
	0.745	0.556				
Facilitating conditions (F7)	0.718	0.516	0.902	0.903	0.651	0.81
	0.812	0.660				
	0.865	0.747				
	0.828	0.685				
	0.803	0.645				
Ongoing eSports gameplay intentions (F8)	0.701	0.491	0.808	0.810	0.588	0.77
	0.826	0.682				
	0.769	0.592				
Correlations	F1<-> F2 0.200	F1<-> F3 0.355	F1<-> F4 0.326	F1<-> F5 0.064	F1<-> F6 0.393	F1<-> F7 0.365
	F1<->F8 0.295	F2<-> F3 0.512	F2<-> F4 0.471	F2<-> F5 0.351	F2<-> F6 0.424	F2<-> F7 0.329
	F2<-> F8 0.562	F3<-> F4 0.319	F3<-> F5 0.280	F3<-> F6 0.362	F3<-> F7 0.357	F3<-> F8 0.500
	F4<-> F5 0.303	F4<-> F6 0.435	F4<-> F7 0.440	F4<-> F8 0.502	F5<-> F6 0.330	F5<-> F7 0.210
	F5<-> F8 0.252	F6<-> F7 0.411	F6<-> F8 0.498	F7<-> F8 0.467		

Source(s): Created by authors

Table 4.
Measurement model estimates

As reported in Table 4 the Cronbach alpha and CR values of all eight latent factors exceeded 0.80, demonstrating their internal consistency and composite reliability. The AVE values were equal to or exceed 0.50, and the standardised loading estimates exceeded 0.50, thereby meeting the requirements for the convergent validity. In addition, all of the correlation coefficients were lower than the square root of the AVEs, which indicates discriminant validity (Fornell and Larcker, 1981). Concerning the model fit indices calculated by AMOS,

an acceptable model fit was also demonstrated with a SRMR of 0.0438 and RMSEA of 0.048 both being below 0.08, and an IFI of 0.952, a TLI of 0.944 and a CFI of 0.952 all being above 0.90 (Malhotra, 2020). Therefore, the confirmatory factor analysis suggests acceptable levels of reliability, convergent and discriminant validity, as well as a satisfactory fitting of the model. As such, Ho1 is rejected and its alternative, Ha1, concluded; that is, Generation Y amateur gamers' ongoing eSports gameplay intentions are an eight-factor model that includes the latent factors of ongoing eSports gameplay intentions, effort expectancy, social influence, facilitating conditions, hedonic motivation, price-value, habit and flow.

5.5 Path analysis

Based on the validated measurement model and in accordance with the remaining formulated hypotheses, a structural model was specified that theorised that Generation Y amateur gamers' ongoing eSports gameplay intentions are determined by their perceptions of the effort expectancy, social influence, facilitating conditions, hedonic motivation, price-value, habit and flow involved in eSports gameplay. The paths estimated by AMOS are presented in Table 5.

In terms of the results of the path analysis reported in Table 5, at the $p \leq 0.01$ level, facilitating conditions (F7) ($\beta = 0.170$, $p = 0.007 \leq 0.01$), effort expectancy (F4) ($\beta = 0.179$, $p = 0.009 \leq 0.01$), flow (F6) 0.192, $p = 0.005 \leq 0.01$), price-value (F3) ($\beta = 0.201$, $p = 0.003 \leq 0.01$) and habit (F2) ($\beta = 0.257$, $p = 0.000 \leq 0.01$) were all significant positive predictors of Generation Y amateur gamers' ongoing eSports gameplay intentions. Hedonic motivation (F1) ($\beta = -0.021$, $p = 0.731 > 0.01$) and social influence (F5) ($\beta = -0.046$, $p = 0.433 > 0.01$) had a non-significant negative influence on Generation Y amateur gamers' ongoing eSports gameplay intentions. Therefore, while there is insufficient evidence to reject the null hypotheses Ho3 and Ho5, the null hypotheses Ho2, Ho4, Ho6, Ho7 and Ho8 are rejected and their alternatives, Ha2, Ha4, Ha6, Ha7 and Ha8 concluded.

The results of the path analysis are illustrated in Figure 1.

As depicted in Figure 1, with a squared multiple correlation coefficient (R^2) of 0.492, facilitating conditions, hedonic motivation, effort expectancy, flow, social influence, price-value and habit explain 49% of the variance in Generation Y amateur gamers' ongoing eSports gameplay intentions. Regarding the model fit indices, this structural model exhibits acceptable model fit, with a SRMR of 0.0371, RMSEA of 0.048, IFI of 0.952, a TLI of 0.944 and a CFI of 0.952.

Paths	Un-standardised β	Standardised β	SE	p
Facilitating conditions→ Ongoing eSports gameplay intentions	0.150	0.170	0.056	0.007
Hedonic motivation → Ongoing eSports gameplay intentions	−0.021	−0.021	0.060	0.731
Effort expectancy → Ongoing eSports gameplay intentions	0.157	0.179	0.061	0.009
Flow → Ongoing eSports gameplay intentions	0.182	0.192	0.066	0.005
Social influence → Ongoing eSports gameplay intentions	−0.035	−0.046	0.044	0.433
Price-value→ Ongoing eSports gameplay intentions	0.134	0.201	0.046	0.003
Habit→ Ongoing eSports gameplay intentions	0.163	0.257	0.046	0.000

Note(s): β: beta coefficient; SE: standardised error p: two-tailed statistical significance
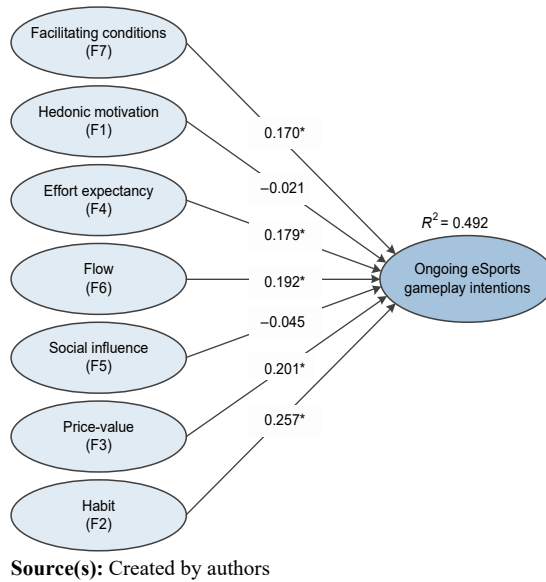**Source(s):** Created by authors

Table 5.
Path analysis estimates

Figure 1.
Structural model

Source(s): Created by authors

6. Discussion

This study sought to ascertain the factors influencing Generation Y amateur gamers' ongoing eSports gameplay intentions by validating an eight-factor model and determining the influence of effort expectancy, social influence, facilitating conditions, hedonic motivation, price-value, habit and flow on Generation Y amateur gamers' ongoing eSports gameplay intentions. In line with the underlying theory, eight factors were extracted in the exploratory principle component analysis. The results of the confirmatory factor analysis suggest that Generation Y amateur gamers' ongoing eSports gameplay intentions is an eight-factor model that is valid, reliable and exhibits good model fit. The results of the path analysis indicate that effort expectancy, flow, price-value and habit are significant positive predictors of Generation Y amateur gamers' ongoing eSports gameplay intentions. These findings echo those of Jang and Byon (2020). Much like the original extended unified theory of acceptance and use of technology Venkatesh *et al.* (2012), facilitating conditions was a significant positive predictor of Generation Y amateur gamers' ongoing eSports gameplay intentions in this study. This lends support to Jenny *et al.* (2017, p. 6) assertion that Internet and computing infrastructures in less developed economies may influence digital competitions such as eSports. Similar to the findings of Jang and Byon (2020) and Jang *et al.* (2021), this study concluded that social influence is a non-significant negative predictor of Generation Y amateur gamers' ongoing eSports gameplay intentions. Jang *et al.* (2021) reason that this may be because eSports gaming is often stigmatised as being an addictions and/or as an activity that takes time away from significant others. In contrast to several studies (Marcelino *et al.*, 2021; Jang and Byon, 2020; Shin and Shin, 2011; Hsiao and Chiou, 2012), hedonic motivation was also a non-significant negative predictor of Generation Y amateur gamers' ongoing eSports gameplay intentions. Jang and Byon (2020) found that, in comparison to flow, hedonic motivation makes a far weaker contribution to predicting ongoing eSports gaming intentions. In the current study it may be that elements of flow, namely telepresence, challenge and focussed attention, are such that they completely override hedonic motivation; that is, play becomes less about pleasure and more about becoming accomplished in the virtual world.

7. Theoretical and practical implications

Theoretically, this study contributes to the literature by confirming the versatility of the extended unified theory of acceptance and use of technology in predicting behavioural intentions, including continued behavioural intentions towards a variety of digital systems and platforms. In line with the work of Jang and Byon (2020), the study expands the extended unified theory of acceptance and use of technology by including the dimension of flow. Telepresence, challenge plus focussed attention and the resulting sense of flow may serve to increase the prediction power of the extended unified theory of acceptance and use of technology not only in the eSports gaming realm but also in other digital settings and platforms. Despite the continued growth in popularity of eSports gaming, academic research into eSports is in its nascence. As such, this study contributes to the knowledge pool on eSports, specifically within the amateur eSports domain by providing practical insight into the most influential factors contributing to Generation Y eSports gamers' ongoing gaming intentions. The study also expands on Jang and Byon's (2020) study by reintroducing the facilitating conditions dimension into the unified theory of acceptance and use of technology, thereby making the theory more applicable to understanding eSports gaming intentions in emerging and developing economies. Furthermore, the study contributes to the literature on the consumer behaviour patterns of the significantly sized Generation Y market segment.

In terms of the practical implications of this study, the results of this study clearly indicate that flow, together with habit are salient contributors to ongoing gameplay intentions amongst amateur eSports gamers in South Africa. A reasonable assumption that can be made here is that flow is also instrumental in encouraging habitual gaming, which increases the importance of flow in overall ongoing gameplay intentions. This suggests that R&D expenditure should be directed at enhancing user engagement by building increased levels of flow into eSports games. A flow state can be achieved when individuals challenge themselves with what they enjoy doing. This includes creating a telepresence experience by providing responsive feedback and using images and sound to create a sense of vividness that creates a feeling of being present in and moving seamlessly through the virtual location. Moreover, a sufficient degree of available challenges needs to be built into each gameplay level in order to focus players' attention on developing the skills required to move through a continuum of skill levels.

eSports game developers can also achieve a desired state of flow by creating daily challenges that reward players when they achieve specific objectives, which will encourage gamers to enter a state of flow when provided with challenges to complete. However, these in-game challenges should have a variety of levels regarding difficulty, ranging from beginner, intermediate and advanced levels so as not to exceed the effort expectancy of different groups of players. Game developers should provide regularly updated challenges to gamers to ensure that eSports games remain enjoyable and does not become predictable. Flow, in turn, implies that engaging in eSports gameplay that is pleasurable, seamless and challenging will motivate amateur gamers to repeat an action, which can result in it becoming a habit for amateur eSports gamers, since habitual play is reliant on flow. Given that habitual play is reliant on flow, the opportunity exists for eSports organisations to encourage amateur eSports gamers to keep participating in eSports gameplay. This should be done in such a way that it becomes a part of amateur gamers' daily routine to participate in eSports games. Including daily and weekly challenges may also contribute to encouraging habitual eSports gaming amongst amateur players.

Of course, decisions concerning such R&D expenditure should be made with due consideration of the price-value proposition; that is, such expenditure should not push the cost of the games above the price point of this market segment. As eSports are an expensive activity to engage in, especially when purchasing gaming devices, it is imperative to ensure that it remains affordable for existing amateur eSports players, as well as individuals

considering starting to play eSports games. Business organisations in the eSports sector should implement free-to-play models in eSports games in order to increase their market share by attracting new amateur players, as well as encouraging existing amateur gamers to purchase different eSports games. In accordance with this strategy, eSports organisations should provide easy access for amateur gamers to download eSports games free of charge. Even though gamers are able to access these games on a free basis, they will eventually need to purchase in-game content in order to advance through the various gameplay levels and enjoy them to their fullest extent. To this end, developers of eSports games should strive to design their games in a manner that encourages players to make frequent purchases of in-game content, which can be achieved by introducing new content on a regular basis. Such new content is also likely to increase the level of flow as it presents new challenges. To ensure that amateur gamers are not restricted to participating on only one gaming device, the free-to-play model should be available on a variety of gaming devices, including mobile devices, gaming consoles and personal computers. eSports organisations that employ the free-to-play model are likely to gain a competitive advantage as their consumers will not be required to pay any additional fees to play the game, but only if they choose to purchase in-game content. Furthermore, eSports organisations can ask a lower price for the in-game content than their competitors and, in return, generate higher volumes of sales, which will increase their market share and possibly attract new potential gamers.

In view of the fact that each eSports game has its own interface, virtual backdrop and rules, players need to learn new skills whenever they begin playing a new eSports game. As a consequence, it is not surprising that individuals may refrain from participating in eSports games when the adoption process proves to be too difficult and time-consuming. In order for eSports organisations to maintain or increase their market share, especially when introducing new games and/or targeting new amateur players, they need to provide eSports game tutorials that provide adequate training relevant to the different levels of play. If these players do not believe they are receiving adequate training via such tutorials, or if they feel that they are not progressing in the games at the rate they would like, they might refrain from participating in eSports gameplay. The process of becoming a skilled player can take considerable time and effort; therefore, eSports game developers should make the process of learning about the game and gameplay in general as enjoyable as possible for amateur gamers by decreasing the effort expectancy. The developers of eSports games should provide optional tutorial videos for different levels of games to assist amateur gamers who are struggling to learn how to play eSports games on their own. Therefore, developers of eSports games should design their games in a way that enables amateur gamers to learn any necessary movements easily through the use of optional tutorials. Incorporating optional tutorials into eSports games may increase the number of amateur players entering the eSports domain and assist eSports organisations in expanding their market share. It goes without saying that decreasing effort expectancy should not be done at the cost of flow. Rather, a delicate balance needs to be achieved between the level of effort expectancy and the level of challenge in the game.

Facilitating conditions were found to be an important contributor to amateur players' ongoing eSports gaming intentions. These facilitating conditions pertain not only to Internet speed, data costs and gaming hardware, but also to the knowledge required to play such games and the help available should gameplay difficulties arise. A business strategy aimed at providing access to a larger audience may be suitable here. eSports organisations can implement this strategy by partnering with large communication companies to provide amateur gamers with more favourable facilitating conditions in the form of data rewards for reaching different levels of play. Another possible way of implementing such a strategy is to make eSports games compatible across a range of devices and operating systems, including mobile devices, tablets, consoles and personal computers. eSports organisations can further

improve the facilitating conditions of amateur gamers by providing online support to players for reaching different levels of gameplay. Online support can be provided in the form of establishing online gaming communities. A gaming community refers to a group of individuals who assemble around a specific game they enjoy and who share tips and advice with one another regarding gameplay (Roy, 2021). As such, game developers and eSports organisations can create external websites to facilitate the development of gaming communities through which players can communicate with one another and exchange advice and inspiration with one another. Players who have difficulty completing certain levels or challenges will be able to seek assistance from others in order to complete them. Therefore, it is important for eSports organisations to develop gaming communities as they can attract new players and strongly influence their decision to purchase eSports games, which is relevant to increasing the market share of eSports organisations.

8. Limitations and future research

This study determined the factors influencing Generation Y amateur gamers' ongoing eSports gameplay intentions in South Africa. As with other studies, this study has certain limitations that suggest several areas for future research. In this study, a single cross-sectional approach was employed and, therefore, the results of this study lack the precision and value of a longitudinal study. Moreover, the study applied non-probability sampling, which means that care should be exercised in interpreting the results in terms of the target population. The sample was formed using only amateur eSports gamers. In this regard, the opportunity exists to research professional eSports gamers. As this study only focussed on amateur eSports gamers who are currently participating in eSports, it provides researchers with a unique opportunity to research individuals not currently participating in eSports who are part of Generation Y to determine whether a gap exists in the market to attract gamers who no longer participate in eSports games.

This study only focussed on Generation Y members. As a result, there is an opportunity for researchers to research the different generations of South African eSports gamers to determine whether there are any differences or similarities between generational segments. The results from such studies will enable eSports organisations to adjust their strategies accordingly. Given the competitive nature of normal sports and the link to eSports, there is an opportunity for researchers to include competition as an additional construct to evaluate the influence on both amateur and professional eSports gamers' ongoing gameplay intentions. Moreover, the study was only conducted on individuals residing in South Africa. An international study including participants from both developed and developing countries may provide important insights into amateur players' ongoing eSports gaming intentions.

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