Playful-Consumption Experience and Consumer Videogame Engagement in the Lens of S-R Model: An Empirical Study

Amir Zaib Abbasi[1(✉)], Ding Hooi Ting[2], Helmut Hlavacs[3], Muhammad Shahzeb Fayyaz[2], and Bradley Wilson[4,5,6]

[1] Faculty of Management Sciences, Shaheed Zulfiqar Ali Bhutto Institute of Science and Technology (Szabist), Islamabad, Pakistan
aamir.zaib.abbasi@gmail.com
[2] Department of Management and Humanities, Universiti Teknologi PETRONAS, Bander Seri Iskander, 31750 Tronoh, Perak, Malaysia
[3] Research Group Entertainment Computing, University of Vienna, Vienna, Austria
[4] Facultad de Administración, Universidad de Los Andes, Bogota, Colombia
[5] School of Media and Communication, RMIT University, Melbourne, Australia
[6] Department of Services Management, University of Bayreuth, Bayreuth, Germany

Abstract. This study aims to empirically investigate a conceptual model that is nested in a behaviorism paradigm. The model posits that consumer videogame engagement is triggered through the playful-consumption experience of a digital game. To validate the model, this study collected data from 460 teen videogame users which were subsequently analyzed on using 442 valid cases. WarpPLS 5.0 was used to analyze the PLS-SEM analysis. The results of measurement model for playful-consumption experience and consumer videogame engagement were sound and revealed a higher-order formative construct. Moreover, the findings of the structural model showed that playful-consumption experience has a significant positive influence on consumer videogame engagement. This study is unique in the field of digital games and consumer behavior studies because the study has empirically investigated the impact of playful-consumption experience on predicting consumer videogame engagement.

Keywords: Behaviorism paradigm (S-R model) · Playful-consumption experience · Consumer videogame engagement and PLS-SEM approach

1 Introduction

The digital videogame has turned into one of the world's leading cultural industries [1] that has combined total spending on gaming contents and its' related products to $23.5 billion in 2015 [2]. According to Borderie and Michinov [3], digital videogame playing is now considered the most common activity for many individuals in their everyday lives. The act of playing a digital game has gained gigantic popularity, which in turn

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has attracted academic research with sub topics of digital games [4]. Takatalo et al. [5] have emphasized that digital game playing has the ability to provoke rich and personally related experiences for videogame players.

The extant literature in the field of videogames indicate that numerous theoretical definitions have been employed to define and examine the concept of experience in digital game-playing. For example, scholars [6–9] have used the definition of immersion to examine player's experience in a digital game. Jennett et al. [8], have utilized three different concepts such as flow, presence and cognitive absorption to define the construct of immersion to understand gaming experience. While Takatalo, et al. [5] have developed a psychological framework known as PIFF *(presence-involvement-flowframework)* to investigate user experiences in digital game-playing. Other scholars [10, 11] have developed *GameFlow* and *EGameFlow* model on the basis of flow theory to assess the level of player's enjoyment in digital gameplay. Fang et al. [12], have also developed an instrument to measure player's enjoyment in terms of player's cognitive, affective, and behavioral reactions in computer game-playing. In another study, Fang et al. [4] have used the essentials of flow theory to measure the flow related elements in computer game-playing. Some other researchers [13, 14] have used the concept of fun to study fun related experiences in digital game-playing.

In videogame studies, various scholars [15–18] have argued that engagement is another concept that has been used by many studies [6, 19–21] to assess player's subjective experience, which is also termed as game-engagement in digital game-playing [22]. Several studies have described the notion of engagement in different forms, for instance, flow [20], immersion [6, 7] while other researchers [19, 21] have related the concept of game-engagement with other theories such as presence, flow, absorption, immersion, and involvement.

However, many studies [15–18] have raised the issue that scholars [6, 7, 19–21] have used different theories interchangeably such as immersion, flow, absorption, involvement, and presence to express the state of engagement in digital game-playing. We find that these studies [19, 21] have only used specific psychological dimensions and failed to include behavioral dimensions in measuring the player's level of engagement in digital game-playing [22, 23]. Many authors [16, 17, 22] have further corroborate that none of these theories have defined the engagement state as an active participation with a digital game. However, Brockmyer et al. [19] have used the theory of immersion to refer to a mental state of being involved in game playing and that a player has some kind of awareness of the environment. Other authors [9, 24] have used presence theory to investigate the player's devotion in the videogame-generated world. Brockmyer et al. [19] have applied the concept of absorption to assess how a player's feelings, thoughts, and emotions are suspended whilst ignored in game-playing. In another study, Klasen et al. [25] have used flow theory to express a player's involvement in digital game-playing and ignored other matters. Abbasi et al. [15] have further discussed that few studies [5–11, 26] have also chosen similar theories to evaluate the digital gaming experience, especially the mental-related experiences in game-playing. However, academics have failed to include other experiences such as sensory and emotional factors. Moreover, these studies [15, 18] have also highlighted that scholars [8, 19, 21] have used similar theories to define the construct of immersion and game-engagement to measure the level of subjective experience and a player's

engagement in a digital game-playing. Hence, there is a dire need for a study in the field of digital game-playing that could explain the notion of engagement and experience utilizing separate yet relevant theoretical definitions in a more comprehensive manner.

This study first attempts to employ the definition of consumer videogame engagement accepted by [22, 23] to measure player's engagement with a digital game comprising both psychological and behavioral dimensions. Second, the study uses the definition of playful consumption experience given by [27] to measure player's experiences in terms of sensory, emotional, and imaginal experience in digital game-playing. Finally, research also intends this to propose and validate a conceptual model that predicts consumer videogame engagement through the level of playful-consumption experience of a digital game-playing.

The present study is the first in the field of digital game studies that applies the basic principles of the behaviorism paradigm to investigate the role of playful-consumption experience in predicting consumer videogame engagement.

2 Conceptual Model and Hypothesis Development

This study has applied the behaviorism approach to study the conceptual model. The behaviorism paradigm was originated by Watson [28] and established a stimulus-response model known as S-R [29]. The study by Bostan [30] also proposes that psychology should investigate a behavior that is observable and measurable. Garneli et al. [31] have illustrated that optimal learning occurs due to the degree of relevant stimuli and response. Heimlich and Ardoin [32] also argued about the behaviorism paradigm that individuals develop a behavior through their experiences relating to the association between the environmental stimuli and response. Therefore, we consider the S-R model of the behaviorism approach to be a suitable framework for the present study. In this paper, we conceptualize a digital game as an environmental stimulus (S) because a recent study defined a digital game as a computer-mediated environment that enables the individuals to gain the relevant experience of play [33]. Furthermore in this study, the experience of play is referred to the playful-consumption experience which is actually the part of the environmental stimulus means, a digital videogame playing. The playful-consumption experience of a digital videogame has a potential to create a response (R) for the videogame consumers as "consumer videogame engagement" [34].

The existing literature indicates that Abbasi and Abu Baker [34] have recently proposed a conceptual model to predict consumer videogame engagement through studying the impact of playful-consumption experience of a digital game-playing. In this research, the author's reviewed the following study [34] and found that their model lacks an empirical investigation of the proposed model.

However, the present study is different from the earlier study in two ways. First, it develops a conceptual model based on the behaviorism philosophy using the stimulus-response (S-R) model. S-R model provides a parsimonious description of environments

and behaviors. Hence, this study also conceptualizes the S-R model as the parsimonious description of environment also known as stimulus (S) as *"the playful-consumption experience of a digital videogame"* and behavior also termed as response (R) as *"consumer videogame engagement"*. Due to having the parsimonious relationship between the playful-consumption experience and consumer videogame engagement, we aim to propose and empirically validate the conceptual model as a higher-order construct as illustrated in Fig. 1, which describes that the level of playful-consumption experience as stimulus (S) impacts the response (R) being consumer videogame engagement.

Fig. 1. Proposed S-R model

2.1 Playful-Consumption Experience

According to Abbasi et al. [27] the notion of playful-consumption experience has been defined as *"an intrinsically, motivating, active, and self-based videogame playing activity that is executed for a player's own sake and pleasure"*, which in turn involves a player to get playful hedonic experiences (imaginal, emotional, and sensory). The authors [15, 35] have explained that imaginal experience is used to refer to the mental state of visualizing things. The imaginal experience is measured through escapism, fantasy, and role-projection [27, 36–38]. The term role-projection refers to a mental state activity in which people visualize themselves into a particular character [36]. Few scholars [36, 38] have also considered the notion of escapism to discuss the mental task of individuals in which they escape from unpleasant real world happenings. The concept of fantasy also refers to a mental activity in which they construct the fictional world [38]. While the emotional experience explains the affective state which is measured through three dimensions such as emotional involvement, arousal, and enjoyment [37–39]. According to Holsapple and Wu [40], the term enjoyment refers to an emotional state in which individuals attain a sort of pleasure or happiness. Wu and Holsapple [38] have stated that the term arousal is used to refer to a situation in which people become attentive, excited and active. On the other hand, the emotional involvement describes an emotional state in which individuals feel that they are carried off by the action [41, 42]. Lastly, Hirschman and Holbrook [37] have defined the sensory experience as *"the receipt of experience in multiple sensory modalities comprising the sense of touch, sight, and sound."*

However, earlier marketing scholars [34, 43–45] have discussed that experience derives from the interaction between a consumer and a product and such an experience further creates a subsequent response. Several other studies [43, 44, 46] have also stated that experience also involves consumers to engaging physically, emotionally, and cognitively. More recently, in the field of digital game studies, authors have proposed that playful-consumption experience of a digital game is very interactive and as such a co-creative experience, which in turn influences players' overall consumer videogame engagement [34] and its second-order constructs as well in the digital game-playing comprising cognitive, affective, and behavioral engagement [15]. Hence, this study proposes the following hypothesis.

H: 1 Playful-consumption experience positively impacts on consumer videogame engagement.

2.2 Consumer Videogame Engagement

According to [22, 23], the notion of consumer videogame engagement is defined as *"a psychological state that triggers due to two-way interactions between the consumer (videogame user) and a digital videogame product, which generates different level of consumer engagement states such as cognitive, affective and behavioral."* [47, 48] have defined the cognitive state of engagement as *a "set of mental activities*, the affective engagement as *the summative and enduring level of emotions",* and the behavioral engagement as *"encompassing the behavioral manifestations"* that a consumer experiences and involves in the focal object. Few studies have reported that the cognitive state of engagement is measured through conscious attention [49] and absorption [50]. Conscious attention refers to the level of attention that an individual has in interacting with the object [49].

Whereas, the absorption refers to a pleasant state in which individuals are completely concentrated and occupied [51]. The affective engagement comprises the enthusiasm [47–49] and dedication [50, 52, 53]. According to [50, 53], the term dedication is used to express the sense of belonging to an object. Whereas, the idea of enthusiasm expresses the individuals' strong level of enthusiastic and excitement feelings with respect to their engagement in the object [49, 51]. Behavioral engagement is another state of engagement in the construct of consumer videogame engagement that further encompasses and fulfills social connection [49] and interaction [50, 51]. Social connection furthers the development of the relationship based on the inclusion of other individuals who have common and mutual actions among each other [49]. While the notion of interaction represents individuals' participation with the product and other individuals, such an interaction always supersedes the purchase transaction [51].

3 Methodology

This study involved teenagers students aged 16–19 years who study in Malaysian universities. We sampled teen students because they are considered as potential subjects for investigating digital game-playing behavior [54] and the fact that digital game-playing is a very popular activity among teenagers [55]. We have captured the participants' information in Table 1.

Table 1. Respondents characteristics

Respondents profile	%
Gender	
Male	59.5
Female	40.5
Age (Years)	
15–16	.9
17–18	18.8
19	80.3
Ethnicity	
Malay	55.7
Chinese	36.2
Indian	8.1
Education	
Secondary School Student	8.1
Diploma/Foundation Student	43.7
New Undergraduate Student	48.2
Frequency of Video-game play	
Everyday	35.7
Once a week	20.6
A few times a week	43.7
Average daily hours of Video-game play	
1–4 h/Daily	71.5
Above 4–8 h/Daily	24.7
Above 8–12 h/Daily	2.3
More than 12 h/Daily	1.6
Answers were recorded in multiple response setting (percent of cases means each percentage is out of 100)	
Most common game's genre played by users	
Action	64.7
Adventure	61.1
Arcade	33.0
Shooter	53.6
Role-Playing	43.0
Fighting	48.9
Strategy	57.7
Sports Game	38.5
Racing	49.8
Casual	21.9
Children' Entertainment	12.0
Family Entertainment	17.4
Flight	13.8
Other video games/Genre	6.6

(*continued*)

Table 1. (*continued*)

Respondents profile	%
Most common plat form used by videogame players	
Personal computer	79.0
Dedicated gaming console	29.9
Smartphone	68.6
Wireless device	21.3
Dedicated handheld device	8.8
Others	0.2
Location of game playing	
Home	96.8
Friend's place	17.4
Cyber cafe	17.0
Others	4.8

The study applied a quantitative research approach, using a questionnaire to empirically test the research model (Fig. 1). The study questionnaire was based on two main parts. Part one comprised of respondents' information and their digital gaming consumption details. Part two involved the two main constructs such as playful-consumption experience and consumer videogame engagement. The items measuring the consumer videogame engagement were adopted from [22, 23]. On the other hand, the items measuring the playful-consumption experience were adopted from another study [27]. The five-point Likert scale starting from 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree was utilized.

A multistage sampling technique was applied to collect the study data. According to Acharya et al. [56], a multistage sampling involves the repetition of two key steps such as listing and sampling. Following the multistage technique, the study managed to randomly select two states in Malaysia, Perak (one public university and one college) and Selangor (one private and two public universities). In each selected institution, we first applied for permission to collect the data. Once the permission was granted, systematic sampling was used in each of the institutions. The data were collected in the presence of the class-instructor. To filter the respondents, questions on "do you play a digital game" and "are you a user of a digital game-playing" were asked. In total 555 questionnaires were distributed and 460 were collected with response rate of 82.9% and 442 questionnaires were usable.

PLS-SEM is a comprehensive multivariate statistical analysis approach that facilitates the evaluation of the both the measurement model and the structural model, and it also assists in theory building [57]. This study used the PLS-SEM approach as the variables involved in the study have both the reflective and formative constructs [57, 58]. WarpPLS version 5.0 by Kock [59] was used to analyze the PLS-SEM analysis. In the next section we present the results.

4 Results

4.1 Step One: Measurement Model Assessment

The proposed study model (Fig. 1), comprised two main third-order or higher-order formative constructs representing playful-consumption experience and consumer videogame engagement. Figure 2 further shows that playful-consumption experience comprises three second-order constructs (two second-order formative constructs *imaginal and emotional experience* and one second-order reflective construct *sensory experience*). Imaginal experience included *fantasy, escapism, and role-projection* and emotional experience comprised of *emotional involvement, arousal, and enjoyment* as first-order reflective constructs. Whereas, consumer videogame engagement involved three second-order formative constructs being *affective, cognitive and behavioral engagement*. Cognitive-engagement entailed *conscious attention and absorption*,

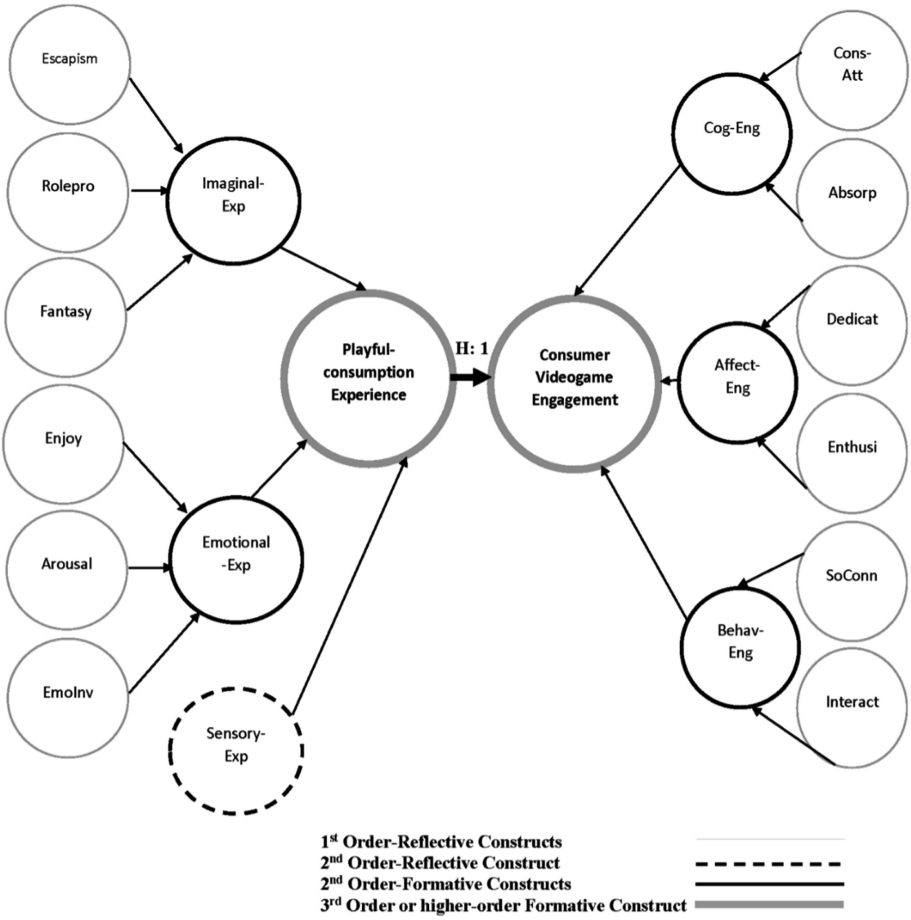

Fig. 2. A holistic view of the proposed model

affective-engagement comprised *dedication and enthusiasm*, while behavioral engagement consisted of *social connection and interaction*. To evaluate the reliability and validity of the measurement model, the study assessed first assessed all first-order and second-order reflective constructs separately, then we evaluated all second-order formative constructs and finally, we analyzed the main higher-order formative constructs.

4.2 Assessment of the Reflective Constructs

To evaluate the quality of the reflective constructs, Table 2 showed that all constructs met the suggested critical values [57, 58, 60]. Additionally, the full collinearity (FVIF) was also evaluated that refers to the vertical and lateral collinearity of one construct to other dimensions [61]. Tables 2, 4, and 5 reported that all constructs met the critical value (3.3) of FVIF [61].

Discriminant validity was also assessed for the reflective constructs. Table 3 revealed the results that the square root of the AVE (diagonal values) of each dimension is larger than its corresponding correlation coefficients. Hence it demonstrates that the constructs have achieved the adequate discriminant validity [62].

4.3 Assessment of Second-Order Formative Constructs

A two-stage technique recommended by Becker et al. [63] was used to create the second-order formative constructs, which is the default technique in WarpPLS. To assess the validity of formative constructs, the VIF should be assessed first, and it must be lower than (5) [57, 58] or (3.3) more restricted criteria by [61]. Next, these scholars [57, 58] also suggested to check the indicators' weights and their significance level to consider the validity and reliability of the formative constructs. Table 4 shows the result that the indicator weights of the second-order formative are statistically significant and VIF is also below the threshold value. Hence, the second-order formative constructs are valid.

4.4 Assessment of Third-Order/Higher-Order Formative Construct

The study again used the two-stage technique in WarpPLS 5.0 to create the higher-order formative construct. For evaluating higher-order formative construct of consumer videogame engagement and playful-consumption experience, we first assessed VIF that must be below (3.3) or (5) and second, we checked the significance of the indicator weights. Table 5 reported that the indicator weights of the formative constructs are statistically significant and their associated VIF is also less than the critical value. The results evidenced that both higher-order formative constructs are valid.

4.5 Step Two: Structural Model Assessment

To examine the structural model and hypothesis as in Fig. 2, the study used WarpPLS 5.0 to check two basic criteria such as the significance of path coefficient with effect size and T-value and the value of the R^2 coefficient for the endogenous construct.

Table 2. Measurement model: first-order constructs

Scale	Items	Loadings	Cronbach's alpha	CR	AVE	Full collinearity (FVIF)
Escapism	Playing a video-game gets me away from the reality	0.831	0.725	0.831	0.557	1.538
	Playing a video-game gets me away from the problems and pressures	0.798				
	Playing a video-game helps me escape from things that are unpleasant and worrying	0.540				
	Playing a video-game makes me feel like I am in a different world of reality	0.778				
Fantasy	Playing a video-game does not stimulate my imagination	0.703	0.713	0.841	0.640	1.445
	Playing a video-game helps me create daydreams	0.890				
	Playing a video-game helps me augment reality	0.796				
Role-projection	Playing a video-game enables me to project myself into a particular role	0.766	0.778	0.872	0.695	1.664
	Playing a video-game enables me to project myself into a particular task	0.905				
	Playing a video-game enables me to project myself into someone else	0.825				
Enjoyment	Playing a video-game is not really fun	0.722	0.862	0.907	0.711	1.466
	Playing a video-game provides me with a lot of enjoyment	0.878				
	Playing a video-game is enjoyable	0.874				
	I enjoy playing a video-game	0.889				

(*continued*)

Table 2. (*continued*)

Scale	Items	Loadings	Cronbach's alpha	CR	AVE	Full collinearity (FVIF)
Emotional involvement	When I am playing a video-game, I feel deeply about this video-game	0.843	0.723	0.845	0.645	1.666
	When I am playing a video-game, I get into this video-game	0.765				
	After I finish playing a video-game, I may carry the video-game playing experience with me for a while	0.799				
Arousal	Playing a video-game makes me inspired	0.829	0.776	0.870	0.691	1.888
	Playing a video-game makes me wide-awake	0.851				
	Playing a video-game makes me motivated	0.813				
Sensory experience	Playing a video-game influences my physical movement	0.675	0.839	0.882	0.555	1.789
	My body adapts sudden actions, as a reaction to certain situations in the video-game (e.g. tries to move my hand in the direction of gun I am pointing in the game etc.)	0.777				
	The peripheral video-gaming device (joy-stick, joy-pad, and other accessories) makes me actually feel the physical experience of the game	0.753				
	The video-game music stimulates my emotions to adapt and react accordingly (e.g. I play aggressively with aggressive music, I play calmly with soft music and react in fear to a horror music etc.)	0.743				
	The scenic beauty of the video-game is aesthetically appealing me	0.785				
	The visuals of the video-game fill my appetite for unique and different structure, shapes and design	0.734				

(*continued*)

Table 2. (*continued*)

Scale	Items	Loadings	Cronbach's alpha	CR	AVE	Full collinearity (FVIF)
Conscious Attention	I like to learn more about this video-game	0.745	0.869	0.902	0.607	2.449
	I notice information related to this video-game	0.801				
	I pay a lot of attention to anything about this video-game	0.856				
	I keep up with things related to this video-game	0.821				
	Anything related to this video-game grabs my attention	0.764				
	I concentrate on this video-game's story for a long time	0.673				
Absorption	When I am playing this video-game, I forget everything else around me	0.754	0.825	0.877	0.589	2.294
	Time flies when I am playing this video-game	0.710				
	When I am playing this video-game, I get carried away	0.809				
	When I am playing this video-game, I feel immersed	0.795				
	I feel happy, when I am playing this video-game intensely	0.767				
Dedication	This video-game inspires me	0.803	0.768	0.845	0.528	2.405
	I am enthusiastic about playing this video-game	0.492				
	I am proud of playing this video-game	0.748				
	I find this video-game full of meaning and purpose	0.787				
	I am excited when playing this video-game	0.757				
Enthusiasm	I spend a lot of my discretionary time playing this video-game	0.604	0.784	0.854	0.540	2.278
	I am heavily into playing this video-game	0.775				
	I am passionate about playing this video-game	0.793				
	I enjoy spending time playing this video-game	0.737				
	I try to fit playing this video-game into my schedule	0.751				

(*continued*)

Table 2. (*continued*)

Scale	Items	Loadings	Cronbach's alpha	CR	AVE	Full collinearity (FVIF)
Social connection	I love playing this video-game with my friends	0.833	0.804	0.885	0.719	1.538
	I enjoy playing this video-game more when I am with others	0.858				
	Playing this video-game is more fun when other people around me play it too	0.852				
Interaction	In general, I like to get involved in the discussions about this video-game playing	0.815	0.856	0.897	0.636	2.178
	I am someone who enjoys playing this video-game with others like-minded video-game players	0.711				
	I am someone who likes actively participating in the discussions about this video-game playing	0.854				
	In general, I thoroughly enjoy exchanging ideas on this video-game with other video-game players	0.818				
	I often participate in activities relating to this video-game	0.782				

Table 3. Correlation between discriminant validity and constructs and testing

Dimensions	Escape	Fantasy	Rolpro	Enjoy	EmoInv	Arous	SenExp	ConsAtt	Absorp	Dedicat	Enthusi	SocialC	Interac
Escape	0.746												
Fantasy	0.331	0.800											
Rolpro	0.437	0.376	0.834										
Enjoy	0.355	0.198	0.207	0.843									
EmoInv	0.365	0.476	0.314	0.318	0.803								
Arous	0.342	0.287	0.383	0.356	0.429	0.831							
SenExp	0.385	0.313	0.465	0.300	0.392	0.529	0.745						
ConsAtt	0.391	0.304	0.369	0.395	0.457	0.559	0.500	0.779					
Absorp	0.469	0.314	0.460	0.361	0.426	0.435	0.520	0.602	0.768				
Dedicat	0.378	0.261	0.325	0.459	0.447	0.578	0.429	0.668	0.550	0.727			
Enthusi	0.305	0.204	0.388	0.271	0.407	0.441	0.467	0.597	0.624	0.573	0.735		
SocialC	0.213	0.189	0.111	0.359	0.309	0.316	0.307	0.387	0.369	0.369	0.410	0.848	
Interac	0.267	0.286	0.389	0.225	0.395	0.435	0.423	0.566	0.548	0.534	0.617	0.495	0.797

The square roots of average variances extracted (AVEs) shown on diagonal with bold numbers.

Table 4. Evaluation of formative measurement model on the second-order constructs

Constructs	Items	Scale type	Weights	Significance	Full collinearity	VIF
Imaginal experience		Formative			1.7	
	Escapism		0.437	<0.001		1.287
	Fantasy		0.413	<0.001		1.214
	Role-projection		0.453	<0.001		1.336
Emotional experience		Formative			2.19	
	Enjoyment		0.413	<0.001		1.19
	Emotional Involvement		0.444	<0.001		1.275
	Arousal		0.457	<0.001		1.312
Cognitive engagement		Formative			3.148	
	Conscious Attention		0.559	<0.001		1.569
	Absorption		0.559	<0.001		1.569
Affective engagement		Formative			2.929	
	Dedication		0.564	<0.001		1.488
	Enthusiasm		0.564	<0.001		1.488
Behavioral engagement		Formative			1.794	
	Social Connection		0.578	<0.001		1.324
	Interaction		0.578	<0.001		1.324

Table 5. Evaluation of formative measurement model on the third-order/higher-order constructs

Constructs	Items	Scale type	Weights	Significance	Full collinearity	VIF
Playful-consumption experience		Formative			2.043	
	Imaginal experience		0.400	<0.001		1.594
	Emotional experience		0.408	<0.001		1.667
	Sensory experience		0.395	<0.001		1.546
Consumer videogame engagement		Formative			2.043	
	Cognitive engagement		0.385	<0.001		2.592
	Affective engagement		0.389	<0.001		2.727
	Behavioral engagement		0.358	<0.001		1.760

Indicator weights and the significance level of the second-order constructs on the associated third-order/higher-order construct

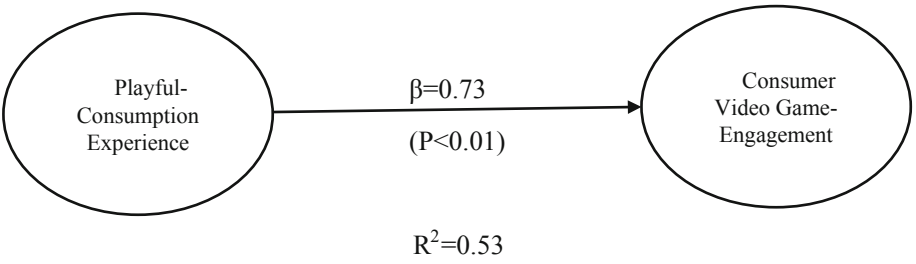

Fig. 3. Structural model results

Table 6. Structural model results

Hypothesis testing	Path coefficient	SE	f^2	T-value = Path coefficient/S.E	P-value
H1: Playful-consumption Experience → Consumer Videogame Engagement	0.727	0.043	0.528	16.90**	0.001

Table 6 revealed that the relationship between playful-consumption experience and consumer videogame engagement is significant with path-coefficient 0.727. WarpPLS 5.0 also calculated the effect size as shown in Table 6, to examine how much playful-consumption experience contributed to explain the consumer videogame engagement. The results indicated that the f^2 is 0.527 which is above the value 0.35 [64], representing the large effect of playful-consumption experience in predicting consumer videogame engagement. Whereas, the value of R^2 for consumer videogame engagement is 0.53 as shown in Fig. 3.

Additionally, warpPLS 5.0 calculated six-global fit indices for overall model [59, 65]. These six fit-indices represent an overall model-data fit that was more than acceptable: average path coefficient (APC) = 0.727, P < 0.001; average R-squared (ARS) = 0.528, P < 0.001; average adjusted R-squared (AARS) = 0.527, P < 0.001; Average block VIF (AVIF) not available; average full Collinearity VIF (AFVIF) = 2.043, acceptable if <= 5, ideally <= 3.3; and Tenenhaus GoF (GoF) = 0.623, small >= 0.1, medium >= 0.25, large >= 0.36.

5 Discussion and Conclusion

In this study, we aimed to empirically validate the conceptual model suggesting that playful consumption experience of a digital game has an impact on consumer videogame engagement. Our results showed that playful-consumption experience of a videogame positively influences on consumer videogame engagement. In this manner, the study contributes to the videogame and marketing literature in many ways. First, Abbasi and Abu Baker [34] have conceptually posited a model suggesting that playful-consumption experience of a digital game leads to increased consumer videogame

engagement. However, the present study has extended their viewpoint and has empirically investigated the impact of playful-consumption experience on consumer videogame engagement. This study also contributes to the stimulus-response models of behaviorism theory by identifying and validating the stimulus as *"playful-consumption experience"* and response as *"consumer videogame engagement"* in the field of digital game-playing and consumer studies. Many marketing scholars [43–45] added that experience comes from the interaction between consumers and a product, which in turn creates and enhances engagement with the product. Our study applied this concept in the field of digital gaming and empirically investigated that playful-consumption experience emanates from the digital game-playing, which in turn impacts consumer videogame engagement. Furthermore, this study provides a new insight to the gaming industry to understand level of players' experiences and engagement. With this model, game developers can also evaluate multiple engagement states and experiences players have with the digital game.

The study initially discussed the literature that had investigated the notion of experience and engagement and highlighted the limitations of existing research. To address the limitations, we primarily attempted to define experience as playful-consumption experience that comprises imaginal, emotional, and sensory experience and also define engagement as consumer videogame engagement which includes affective, cognitive engagement and behavioral engagement. Next, the study examined the role of playful-consumption experience in predicting consumer videogame engagement. The empirical investigation was accomplished using PLS-SEM approach and the results of measurement model showed that the higher-order formative constructs had sound reliability and validity. The results of structural model indicated that playful-consumption experience had a positive significant influence on predicting consumer videogame engagement.

This study is limited in understanding the S-R model in a digital game context and we only selected individuals who are videogame users. Future studies can apply the same model to investigate the particular consumers of a particular genre of a digital game and future research can also extend the S-R model to include S-O-R Model. Methodologically, we could extend the analysis with Confirmatory Tetrad Analysis to further test path directionality in a more data drawn way.

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