Playful-Consumption Experience in Digital Game Playing: A Scale Development

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Abstract. This paper intends to develop a scale to measure a videogame player's emotional, sensory, and imaginal experiences in digital gaming. We first define the construct of playful-consumption experience in videogame playing and accordingly, develop a scale for measuring playful experiences in videogames. We collected the data of 225 valid respondents which were further analyzed through exploratory factor analysis (EFA) and reliability analysis. The results of EFA and reliability analysis reported that the loaded items were emerged into a seven factor solution and all constructs have good reliability. This study is unique in the videogame literature as it uses the theoretical definition of playful-consumption experience to define and measure the player's experiences in videogame playing as playful-consumption experience of videogame play.

Keywords: Videogame . Playful-consumption experience . Imaginal experience . Emotional experience . Sensory experience . Scale development.

1. Introduction

Since last decade, the priorities of the children and teenagers have significantly changed in how they spend their spare time [1]. Karsten [2] observed that adolescents are less likely to socialize with peers outside the home, as they are more likely to get involved in adult-regulated leisure activities and spend most of their time with indoor activities. Such a change in the characteristics of the young generation may indicate that the present group of people are less likely to engage in exploratory and health-risk activities with their friends outside the home [3]. Hence, the indoor leisure activities have become an important component in the lives of children and young people [1]. Kuntsche, et al. [4] have discussed that the current generation of teenagers are noticeably different from the previous generations with respect to their access to a virtual play area. Large numbers of adolescents now engage in digital game playing as a leisure activity [1, 5].

As a consequence, videogame playing has become the fastest growing form of recreational activity for the consumers [6]. Hence, it is now considered the most common activity to many individuals in their everyday lives [7]. Consumers play videogames on various platforms such as dedicated gaming consoles, smartphones,

personal computers, handheld gaming consoles, etc. [8]. The popularity of videogame playing has significantly increased since the last decade, and it has also facilitated the gaming industry to become a booming and multi-Billion Dollar industry [8]. Newzoo [9] has revealed the list of top 100 countries by videogame revenues and consumer spending on videogame related products; China is on the top of the list with 24.2 Billion Dollars, US is ranked 2nd with $23.5 Billion Dollars [9], Japan is placed in 3rd position with 12 Billion Dollars, while Malaysia ranks 18th out of 100 with 539.5 Million Dollars as shown in [10, 11]. This prominent growth in the gaming industry has called researchers to study player experiences that arise from digital game-playing [12]. The experience of digital game playing is assumed as the subjective association between the player and the respective videogame beyond the real application of a game [13].

An extant literature review revealed that many studies have conducted their researches to define and measure the multidimensional nature of experience in game playing [8, 14-19]. This can be seen in the studies of [14-19], who used the concept of immersion to develop an immersion questionnaire, a game experience questionnaire and a game immersion questionnaire to measure a player's game-playing experience. Few other studies applied the theoretical model of flow to examine player engagement in digital gaming [20-22]. We also found some more studies by [23-26] who have employed the basic essences of fun theory to assess player media-related experiences. Many other researchers have frequently used the following theoretical definitions such as flow, cognitive-absorption, presence, and immersion to describe and evaluate player experiences in digital game playing [13, 15-17, 27]. However, we found that previous studies are still limited in their findings as they have only considered those theoretical constructs which are referred to the subjective mental state of the player and neglected to investigate other experiences such as emotional and sensory experiences in videogame playing. Hence, we realize the importance of other experiences and aim to apply the theoretical definition of a playful-consumption experience comprising imaginal, emotional, and sensory experiences to develop a scale to measure player experiences in videogame playing.

In this paper, we fill this research gap through developing a new scale to measure playful experiences in game playing. This study is unique in its investigation as it develops a scale for playful-consumption experience in videogame playing to measure imaginal, emotional, and sensory experiences.

2. Scale Development Steps

The present study applied the scale development procedure as recommended and applied by several studies [28, 29], and includes four core steps: (I) conceptualization, (II) questionnaire development, (III) data collection for study 1, and (IV) scale purification and validation. The present study initially took an initiative to conceptualize the construct of playful-consumption experience.

I. *Conceptualization of Playful-Consumption Experience*

Holbrook, et al. [30] argued that playful-consumption falls into the broad category of *intrinsically motivated consumer behavior* comprising hobbies, esthetic appreciation, creativity, sports, and games. Most recently, few studies by [6, 30, 31] have conceptualized the act of playing a videogame as playful-consumption experience and

reported that the perspective of playful-consumption has become mainly important for the unique kinds of play, which is facilitated by computer-mediated settings such as videogames. On this basis, we can conclude that playful-consumption experience is defined as an intrinsically, motivating, active, and self-based videogame playing behavior that is executed for a player's own sake and pleasure, which in turn involves a player to get playful hedonic experiences (feelings, sensory and fantasy). On the basis of this definition, the construct of playful-consumption experience is specified as a multi-dimensional construct that consists of three main dimensions including imaginal, sensory, and emotional experiences [6, 30, 31]. Besides three main constructs, the imaginal experience is further defined by three main dimensions, namely escapism, role-projection, and fantasy [32-34], while emotional experience is classified by three factors such as arousal, emotional involvement, and enjoyment [33-38]. Through an extensive literature, we identified seven sub-dimensions (fantasy, role-projection, escapism, arousal, emotional involvement, enjoyment and sensory experience) that collectively explain the three focal playful-hedonic experiences (imaginal, sensory and emotional experience). Next, we developed the questionnaire for seven constructs.

II.   *Questionnaire Development*

We applied various techniques *(literature review, previous theoretical and empirical studies on the main variable, deduction from the theoretical definition of the construct, suggestions from professionals of the field, and open-ended survey questionnaire)* suggested by [28, 29] to get a list of scale items for the identified factors that contribute to the overall construct of playful-consumption experience. Initially, we conducted a review of the existing literature to collate an inventory of scale items and managed to get a pool of items for the seven identified constructs. For instance, we adapted the items of fantasy and role-projection from these studies [32, 34, 39]. The scale items of escapism were adapted from these scholars [32, 34, 40-42]. We have obtained and adapted the items of emotional involvement from these studies [34, 42]. The items for the enjoyment scale were adapted from these sources [40, 43] and for the arousal scale, we adapted from these academics [30, 34]. While for sensory experience, the previous items were not reflecting to the context of game playing, so we generated six items for sensory experience through using the two other techniques of items generation *(deduction from the theoretical definition of the construct and open-ended survey questionnaire)* from eight experienced videogame users. Once items were developed, we submitted a pool of 38 items to the experts to evaluate the content validity. As a result, we deleted two items from emotional involvement, enjoyment, and escapism due to having semantic redundancy in the items and left with 32 items.

III.   *Sampling and Data Collection*

Afterwards, we picked young student participants whose age was between 16-19 years, studying at Malaysian institutes. The primary reason for the selection of young students was that they are still seen as focal individuals for studying the videogame playing behavior [44]. A multistage sampling was utilized to collect study data. We first listed four main states *(Selangor, Perak, Johor, and Penang)* of Malaysia in terms of population and density then randomly chosen one state *(Perak)*. We then generated a list of institutions *(Schools, Colleges, and Universities)* and randomly selected three

private universities, one public university, three colleges, and two schools in the Perak state. In each selected institution, we randomly selected few classes and within the class environment, we distributed 275 questionnaires in total and collected 225 valid data from teen gamers. We further used 225 valid responses for EFA and reliability analysis.

IV. *Scale Refinement and Validation*

The results of EFA explicated that KMO was 0.861 that exceeded the critical value of 0.50, suggested by [45]. In addition, we checked Bartlett's test of sphericity and results reported that it was 3450.916, df = 351, and significant at p = 0.000, showing the suitability for factor analysis. During EFA, We loaded 32 items of the playful-consumption experience construct to explore its related factors and considered items for deletion, if items have a loading of (<0.40) on a specific construct or have a cross-loading (>0.40) on a particular item [46]. The results reported that five items were deleted due to poor loadings and cross-loadings. Thus 27 items were retained out of 32 items. These 27 items were further emerged into a seven factors solution that was extracted based on eigenvalues (>1), as recommended by [47]. In addition, these seven factors *(escapism, fantasy, role projection, enjoyment, emotional involvement, arousal, and sensory experience)* had an eigenvalue of minimum 1.0 or greater. A reliability test was also conducted on the seven factors and we found that every factor has exceeded the critical value of 0.70 as recommended by [48].

3. Conclusion

This study indicates that playful-consumption experience is a multi-dimensional construct which consists of seven sub-dimensions and these dimensions also meet the critical value of reliability test. This scale brings new insights in the field of gaming as it has the potential to measure three main experiences such as imaginal, emotional, and sensory experience. This study only validated the playful-consumption experience scale through EFA and another study is required to further confirm the factors extracted in EFA stage. This scale can be applied in all videogame settings and it would be interesting to see how the results fit with other genres of videogames.

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