VIDEO GAME ENGAGEMENT AND NEED SATISFACTION AMONG UNDERGRADUATES IN COLOMBO DISTRICT, SRI LANKA: CROSS SECTIONAL STUDY

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Video games are crucial in various aspects of an individual's life, including mental health, emotional well-being, need satisfaction, and decision-making. Society identifies video games as more violent by nature than their counterparts, but video games make positive changes in our lives when it comes to need satisfaction. According to self-determination theory (SDT), people are motivated to play video games to fulfill their psychological needs. The SDT is primarily interested in how social contexts might be able to meet people's basic needs. Hence, this study aimed to investigate video game engagement and need satisfaction among undergraduates. The general objective is to assess the association between video game engagements and needs satisfaction among undergraduates in the Colombo District of Sri Lanka. The quantitative, descriptive, cross-sectional study was conducted among conveniently selected 196 undergraduates playing video games in the Colombo district. Ethical approval was obtained from the Ethics Review Committee at KIU (KIU/ERC/23/164). A self-administered questionnaire was used to collect data. The twenty-one-item player experience need satisfaction scale (PENS) was utilized to assess the need satisfaction among undergraduate video game players in Colombo district. Data were analysed using SPSS version 25. The statistical analysis method was One-way ANOVA to evaluate the relationship between video game genres (shooting games, fighting games, battle arena, strategy games, sports games, and others) and the domains of the player experience need satisfaction scales (compete, autonomy, relatedness, presence, and intuitive controls). The majority (92.9%) of the participants were males. Results showed that most of the players are playing shooting games. There was a statistically significant association between competence and intuitive control across the genres. Respectively, [$F_{(5, 190)} = 2.74$, $p = 0.02$], [$F_{(5, 190)} = 2.99$, $p = 0.01$]. The study concluded that a considerable proportion of relationship between video game genres and need satisfaction and authors recommended further studies to devise interventions for uplifting video game engagement and need satisfaction among video game players in the Colombo district.

Keywords: video games, need satisfaction, genres, self determination theory

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INTRODUCTION

According to Bavelier and Green (2019), the video gaming industry has consistently surpassed the combined earnings of the movie and music industries over the previous eight years, when measured in terms of monetary revenue.

The ability to properly evaluate players' experiences during gameplay holds important implications for developing more pleasurable and successful video games, comprehending the effects of videogame engagement, and proficiently implementing game design concepts in diverse domains (Rienzo & Cubillos, 2020).

The motivating variables of Self-Determination Theory (SDT) are the underlying aspects that influence players' perceptions of their most and least joyful experiences resulting from the design of Academical. SDT posits that players may experience intrinsic motivation to derive enjoyment and actively participate in a game via three fundamental psychological needs: relatedness, autonomy, and competence (ARC) (Rowicka & Postek, 2023). Most studies have shown that each ARC variable may affect players' pleasure and engagement with a gaming experience.

In the context of forecasting game enjoyment and persistence, the researchers have devised metrics to assess the fulfilment of various needs inside the game. These needs include autonomy, competence, simple controls, and the player's sense of presence during gameplay. When a player's needs are met in a game, they become more phenomenologically embedded in the game's emotional, physical, and narrative components. Due to their higher likelihood of being motivated by a sense of volition and choice, people with high need satisfaction were likelier to play games harmoniously (Przybylski et al., 2010).

Based on the empirical data, the main objective of the current study was to assess the relationship between video games and need satisfaction among undergraduates in the Colombo district of Sri Lanka.

METHODOLOGY

Study Design
A descriptive cross-sectional study was conducted to assess the association between video games and need satisfaction among undergraduates in the Colombo District of Sri Lanka.

Place of the Study
As a result of physical and online data collection, data were collected through an online platform by distributing a Google form. And visited the Gaming events conducted by the Esports Association of Sri Lanka in 2023. QR code method was used in physical data collection.

Duration of the study
The study was taken for approximately one year. The study was commenced and concluded with the submission of the thesis, spanning from May 2023 to March 2024.

Study Population
This study's population was undergraduates studying in the Colombo district of Sri Lanka. The researcher devised a strategy to collect individual responses from a diverse group of participants, encompassing individuals of both genders and ages above 18.

Sample Size and Calculation of Sample Size
The expected sample size of the study is 422, according to the calculation. 10% added to it to compensate for expected dropout, incomplete records, and other study-related problems. The

population size of the study is not known. Therefore, the researcher used the Daniel Formula based on the prevalence rate. Unfortunately, no prevalence rate that is in line with the research topic could be found, which is in line with the research topic. Therefore, 50% is the prevalence for the sample size calculation. The current study utilised a sample of undergraduates playing video games (N = 196).

Inclusion Criteria - University students of Colombo District who are playing video games.

Exclusion Criteria - Whose age is below 18.

Study Instruments

Demographic profile - The demographic profile gathered data relevant to age, gender, and video game questions: video game genres.

PENS – (Player Experience of Need Satisfaction) Developed by Ryan et al., 2006. The PENS is a 21-item scale that measures game players' experience across five dimensions: Competence, Autonomy, Relatedness, Presence/Immersion, and Intuitive Controls.

Sampling/recruitment procedure

This study's sampling method was convenience sampling, in which the research participants were recruited according to the feasibility of access.

Data Analysis

The data were analysed using descriptive statistics and inferential statistics. Inferential statistics were carried out to assess the association among the variables. Statistical analysis included One-way ANOVA. Reliability analysis was also conducted to see the study's reliability state. The above analysis was conducted via SPSS version 25.

RESULTS AND DISCUSSION

Table 1 – Demographic Information of the Participants

Variable	Frequency (n=196)	Percentage (%)
Gender		
Male	182	92.9
Female	14	7.1
Type of university		
State	52	26.5
Non state	144	73.5
Most Preferred genre		
Shooting games	83	42.2
Fighting Games	15	7.7
Sports games	17	8.7
Battle Arena	48	24.5
Strategy Games	7	3.6
Others	26	13.3

Need Satisfaction across Video Game Genres

one-way ANOVA was performed to evaluate the relationship between video game genres (shooting games, fighting games, battle arena, strategy games, sports games, and others) and the domains of the player experience need satisfaction scales (compete, autonomy, relatedness, presence, and intuitive controls). No significant difference was found, but differences were found for autonomy, relatedness,

and presence, but differences were found in competence and intuitive control subscales. P values, respectively, $p = .020$, $p = .010$.
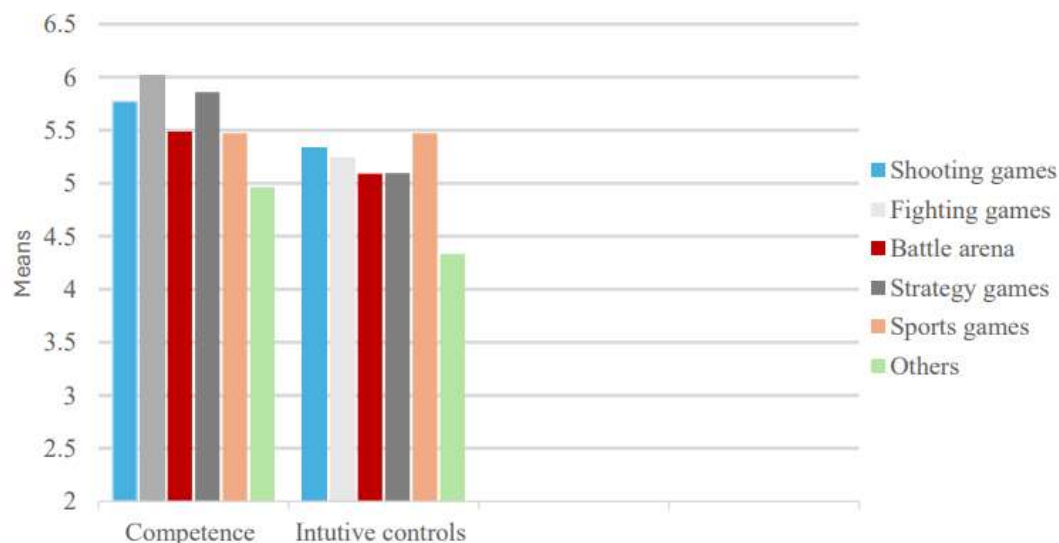

Figure 1 - Competence and intuitive controls for each game

The social context of play and gaming motivations become more important as this theoretical perspective becomes more focused on how gaming facilitates basic need satisfaction, which affects measurements of gaming engagement. In the present study, for the analysis, shooting games, fighting games, battle arena, strategy games, sports games and other video games were considered. These genres come under competitive video games. Results showed that most of the players are playing shooting games.

According to self-determination theory (SDT), people are motivated to play video games to fulfil their psychological needs. SDT is primarily interested in how social contexts might be able to meet people's basic needs. SDT has been successfully used in sports, education, and leisure research. Moreover, depending on the genre, players of FPS (First-Person Shooter) and RPG (Role-playing Games) were more motivated by achievement, whereas RPG players were more motivated by immersion (Ghuman & Griffiths, 2012; Johnson et al., 2015). It was discovered that FPS games offered less relatedness than other genres. A subsequent study discovered that while immersion varied across all genres, flow was less likely to result from playing sports, racing, or fighting games.

Johnson and colleagues examined online and offline games and discovered that shooting, sports, and simulation games had lower levels of presence and autonomy than strategy and role-playing games (Johnson & Gardner, 2010). In contrast to the above studies, no significant difference was found for autonomy, relatedness, and presence. However, differences were found for competence and intuitive control subscales in the present research study. Moreover, results concluded that competence is higher in shooting games than in other genres and intuitive control is high in sports games. The study done by Johnson and his colleagues in 2015 concluded that a significant difference between genres was found for relatedness, presence, and intuitive controls. The genres are Adventure, Action Role-Playing Game, Massively Multiplayer Online Role-Playing, Real-Time Strategy, Role-Playing Game, First-Person Shooter, Multiplayer Online Battle Arena.

CONCLUSIONS/RECOMMENDATIONS

Video games entertain us and entertain us and play a role in need satisfaction. The current research is more focused on the positive side of video games. Moreover, this research will help to omit the negative stereotype towards video games. Based on the genres, it was found that there were significant differences towards competence and intuitive controls. The same research must be

conducted using a larger sample size with equal sizes for genres to obtain effective results in Sri Lanka.

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