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The Moderating Effect of Playing Hours on the Impact of Video Game Addiction in Causing the Aggressive Behavior of Non-State University Students among Gen Z in Sri Lanka

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Abstract

This study aimed to determine how the amount of time spent playing video games affects the aggressive behavior of Gen Z students at private universities in Sri Lanka. Public anxiety has been sparked by the negative effects of video game addiction, particularly with reference to violent conduct among the younger generation. Three hundred eighty-two (382) Gen Z students from local private tertiary educational institutions were selected as the target sample from a population of 66,000. The cluster sampling approach was employed as the sampling strategy in accordance with the quantitative research methodology. Three components made up the survey: the demographic component, the video game addiction test, and the section on aggressiveness. The Partial Least Squares method via SmartPLS 4.0.9.0 PLS-SEM was used as the data analysis technique since SmartPLS is an analytical tool that could be used to test the data obtained from PLS-SEM. The coefficient value of 0.953 revealed that playing video games has a significant beneficial impact on aggressive behavior, and the coefficient value of -0.016 showed that the number of playing hours has no moderating effect on this relationship. Therefore, the researchers advise judicious time management of game use and other daily necessities and the early detection of unfavorable attitudes and behavior. This study has implications for the origins, effects, and prevention of students' gaming addiction and resultant aggressive behavior. The researchers recommend that game users manage their game usage time and time spent on other daily essential activities suitably, as well as identify negative attitudes of behavior early. Moreover, the study provides a platform for further studies on related subjects by contributing pioneering results that will enrich the knowledge gap in the local context.

Keywords: Aggressive behavior, Gen Z, Playing Hours, Video Game Addiction

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01. Introduction

The younger generation, especially Gen Z, has embraced video games as a popular source of entertainment. However, because of its negative effects on physical and emotional well-being, social connections, and academic accomplishment, excessive video game use and addiction have drawn increased attention internationally. Younger people's addiction to video games and aggressiveness have been linked in several research studies (Ferguson, 2015; Gentile et al., 2004; Lemmens et al., 2011; Van Rooij et al., 2011). As a result, concerns regarding the harmful impacts of video game addiction, particularly on violent conduct in young people, are growing among parents, educators, and academics. However, there is a dearth of information on how aggressiveness among the Gen Z cohort in Sri Lanka is affected by video game addiction, necessitating this study. This study's primary goal is to investigate the moderating role of playing time on the association between aggressive behavior and video game addiction of Gen Z students who are enrolled in non-state universities in Sri Lanka. The United States (Anderson et al., 2003) and the Netherlands (Lemmens et al., 2011) are just a few of the diverse cultural contexts in which this subject has been studied in the past.

02. Literature Review

This literature review was carried out by referring to reputed journal databases such as Scopus, Research Gate, Science Direct, PubMed, Wiley Online Library, Taylor & Francis Online and Discover Journals, Books & Case Studies, etc. The researchers used video game addiction, aggressive behavior, university students, and Gen Z as key search terms when screening the relevant published articles.

Video game addiction is described as follows: "Many computers or digital equipment come equipped with pre-programmed games and people become addicted to playing them at the cost of work performance or family obligations" (Shaw & Black, 2008). Furthermore, the authors state that the time spent on gaming will depend on the individual, that is, whether they are pathological or non-pathological users since more addicted personnel will spend more time than non-obsessive personnel. Therefore, a strong correlation between time spent on games and game addiction was derived in the end (Lemmens et al., 2009). Aggression, according to social psychology, describes any behavior or act aimed at harming a person or animal or damaging physical property (Gabbey, 2019).

Many demographic analysts today refer to young people as Gen Z, while those who were born between 1997 and 2012 are referred to as Gen Z by the Pew Research Center (2022). The oldest members of this generation are currently in their mid-20s, and many have completed their undergraduate degrees, located fulfilling employment, and started families. Gen Z is more socially aware, even though previous generations have placed emphasis on social issues. In other words, they imitate millennials (those born between 1981 and 1996) in their behavior (Warren, 2022). The COVID-19 breakout is the main reason why the younger generation, that is, Gen Z, is facing a more uncertain future than many previous generations. The behavioral characteristics of different generations can be significantly influenced by their environment (Warren, 2022). Consequently, the development of Gen Z's behavioral traits is significantly shaped and influenced by a variety of modern situations and environments. They were born and reared in a world of highly developed technology, which most likely helped them handle

media and other contemporary objects far more skillfully than their ancestors did (Salleh et al., 2017). In this study, Gen Z was the target of focus within the scope of the investigation.

The increased popularity of video games and the accessibility of gaming platforms are the main causes of worries about video game addiction in Gen Z individuals. These can also be seen as the main factors influencing game addiction. Social behaviors, physical and mental health, and even financial situations can all be significantly impacted by video game addiction (King et al., 2020).

According to Bushman and Huesmann (2010), aggressive behavior is defined as conduct that has the potential to harm another person physically or emotionally. This definition encompasses both verbal and physical abuse. Meanwhile, narcissistic personality traits are a defining characteristic of such people. While narcissistic traits may be present in some of us, this does not necessarily mean that we have the mental illness known as a narcissistic personality disorder. Gaming addiction is a frequently discussed subject among all of us because many people are confused about what actions constitute being addicted to video games.

Additionally, the length of time spent playing games or the quantity of gaming hours has been employed in earlier studies (e.g., Lemmens et al., (2009); Roe & Muijs, (1998); Von Der Heiden et al., (2019)). Here are some examples. "They have insisted on the bare minimum of playing time, though". "They should not be the starting point when determining a person's gaming addiction". The authors also claim that the amount of time spent will vary depending on whether a person is a pathological or non-pathological user, with more addicted people spending significantly more time than non-obsessive people. Consequently, a conclusive association between the amount of time spent playing games and game addiction was found (Lemmens et al., 2009). More than twenty hours of gaming per week among American teenagers is proof that addictive games take time away from a person's productive life (Bailey et al., 2010). As a result, gamers typically spend a sizable amount of time playing video games. The amount of time spent playing video games will therefore vary from person to person based on their wants or need to play, and academics have identified various benchmarks to assess and serve as guides for how much time is spent playing video games.

According to Parker et al. (2008), playing video games for more than 20 hours a week can have a significant impact on one's health since they lead to depression, low emotional states, and difficulty forming strong social bonds. One may say that this is an example of when the above discussed benchmarks were applied. It shows that playing video games for longer than twenty hours has a negative influence on psychological well-being and daily functioning. Physical inactivity is also a result of playing video games for a sizable portion of the day (Sălceanu, 2014). When talking about the negative effects of overuse, the subject of exactly how much time is spent playing games frequently comes up. Numerous important tasks were seen to be abandoned due to the time-wasting activity of playing online games (Saputra et al., 2020).

In addition, each dimension of the video game addiction variable is described separately. Salience - Playing mobile games becomes uppermost in and dominating thoughts, affection, and attitudes. Tolerance - Playing mobile games for satisfaction. Mood Modification – The game is used as a mechanism for transforming a bad mood into a good mood. Relapse - While reducing playtime, the tendency to fall back into the earlier excessive playing pattern.

Withdrawal - Psychological discomfort or unpleasantness when playtime is decreased or discontinued. Problems - Problems in workplaces, schools, or social places due to excessive gaming (Abbasi et al., 2021).

Each dimension of the aggressive behavior variable is described separately. Physical Aggression - Physical aggression occurs when the player is tempted to physically harm those around him due to playing video games. Verbal Aggression - In verbal aggression, the player behaves in a verbally aggressive manner with those around him or with those who play video games with him. Anger - Anger was described by gamers as a change in the manner of playing caused by a feeling of frustration during the game. Rage has components, that are behavioral (aggressive behaviors), cognitive (poor decision-making), and emotional (anger). Hostility - Hostile aggression involves emotional or reactive actions that involve a specific intent to hurt someone or destroy something (Ajavakom, 2020).

03. Conceptual Framework

The conceptual framework of the research study was developed by the authors after a thorough examination of prior literature is shown in Figure 1. The conceptual framework consists of game addiction as the independent variable and the aggressive behaviors of Gen Z as the dependent variable. Game addiction is measured by using six dimensions; namely, salience, tolerance, mood modification, relapse, withdrawal, and problem (Abbasi et al., 2021). Moreover, the variable aggressive behaviors is measured using four dimensions; namely, physical aggression, verbal aggression, anger, and hostility (Ajavakom, 2020).
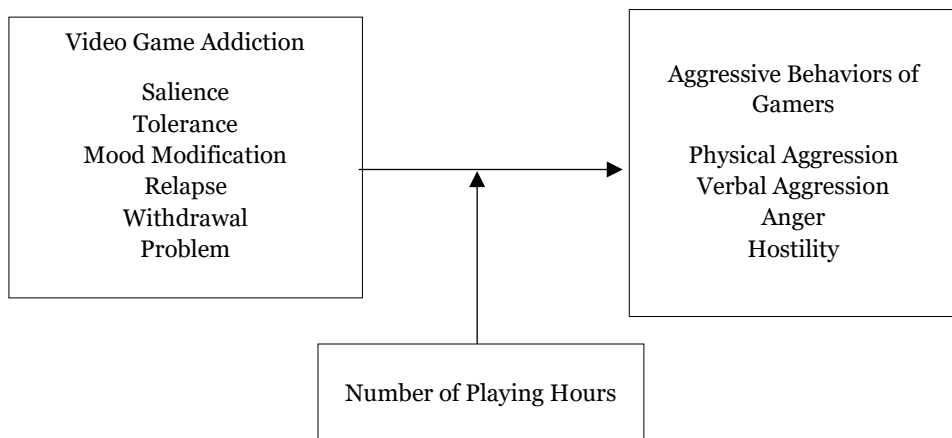

Figure 1: Conceptual Framework

04. Research Methodology

The study employed a quantitative approach to data analysis and used a questionnaire to gather data, with the researchers obtaining consent from respondents before conducting the online survey. The population of the study consisted of 66,000 non-state university students from two clusters, with University A having approximately 28,000 students and University B having approximately 38,000 students. Probability sampling was used in selecting the sample of 382

respondents, with the researchers employing cluster sampling to identify the sample. The population of non-state universities was divided into clusters depending on the members' location covering the geographical area of Colombo, Sri Lanka. Those clusters have been created by including one institute in each cluster. The two clusters selected as the sample for this study were chosen from two non-state universities geographically located in the city of Colombo. The clusters A and B were bound to contain a heterogeneous collection of individuals with different interests, orientations, and values, who could offer a variety of perspectives that could be examined, while the fact that they were in two non-state universities makes the surface of the population homogeneous. The research questionnaire included sections devoted to gathering basic information and those for measuring each variable, with the video game addiction measurement scale developed by Abbasi et al. (2021) and the aggressive behavior measurement scale developed by Ajavakom (2020) used in it. The researchers declared no competing interests, and none of the respondents received compensation for their participation in the study (Saunders et al., 2009; Farber, 1990; Krejcie & Morgan, 1970; Abbasi et al., 2021; Ajavakom, 2020).

05. Results

5.1. Reliability Statistics

The researchers measured dependability using the SmartPLS algorithm. The results of this study show that Cronbach's Alpha of the video game addiction variable is 0.991, which is higher than the cutoff of 0.7, indicating that it is dependable. Cronbach's Alpha for the aggressive behavior variable is 0.991, exceeding the threshold of 0.7. The fact that both variables are higher than 0.7 leads us to believe that they are dependable, and, as a result, reflect internal consistency among the items used. Table 1 displays the variables' Cronbach's Alpha values.

Table 1 : Reliability Statistics of Latent Variables

Latent Variable	Reliability (Cronbach's Alpha)	No of Items
Video Game Addiction	0.991	18
Aggressive Behavior	0.991	11

5.2. AVE Statistics

Using the SEM technique in Table 2, the survey's convergent validity is examined and assessed using the Average Variance Extracted (AVE) ratings. The validity range is only acceptable when the AVE scores are greater than 0.5 (Rouf & Akhtaruddin, 2018). Video game addiction received a score of 0.907 when run through the SmartPLS Software, while aggressive conduct received a score of 0.870. The convergent validity of the results is guaranteed because the AVE score for every variable is larger than 0.5.

Table 2 : AVE Scores of Latent Variables

Latent Variable	Average Variance Extracted (AVE)
Video Game Addiction	0.907
Aggressive Behavior	0.870

5.3. Structural Model Results

The researchers used the bootstrapping technique to evaluate the survey's structural model in order to determine the relevance of the links between the latent variables. This was done using bootstrapping with 5000 sub-samples.

If the beta value is larger than 0.20, the t-statistic is greater than 1.96, and the p-value is less than 0.05, the significance of the associations can be assessed. The relationship between video game addiction and aggressive behavior is significant, and Table 3 demonstrates that video game addiction has a strongly positive impact on aggressive behavior due to the beta value, which is 0.953, the t-statistic, which is 35.088, as well as the p-value, which is 0.000.

Table 3: Path Coefficients of the Relationships

Relationship	Beta Value	T statistic	P value
VGA -> AB	0.953	35.088	0.000
TME x VGA -> AB	-0.016	0.327	0.744

The results further support the hypothesis that there is no association between the number of playing hours and aggressive behavior because the beta value, t-statistic, and p-value are, respectively, -0.016, 0.327, and 0.744. It is reasonable to draw the conclusion that video game addiction has a positive impact on aggressive behavior and that the number of playing hours has no moderating effect on this relationship after considering the aforementioned interpretations based on the survey data depicted in Table 3. Figure 2 illustrates the structural model used for the analysis.
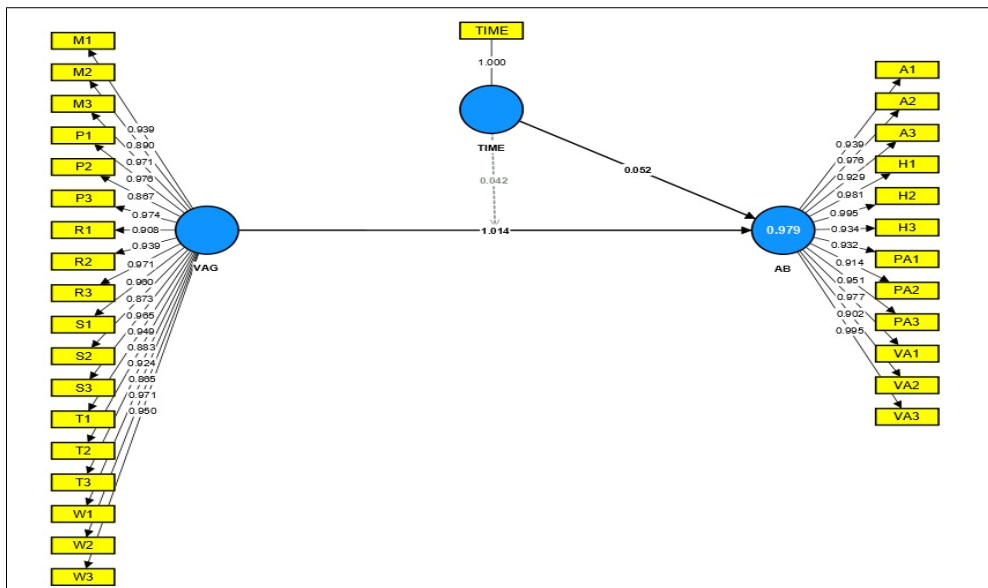

Figure 2 : PLS results of the Structural Model

06. Discussion

The study's main focus was on how Gen Z students in Sri Lanka's private institutions responded aggressively due to video game addiction. In order to investigate the relationship between violent behavior, video game addiction, and the moderating effect of playing time, a quantitative approach was used. The association between video game addiction and aggressive behavior has been shown to be inconsistent in the literature when comparing the results of this study with earlier studies.

Some research studies have found a connection between aggressive behavior and violent video games, such as the meta-analysis carried out by Anderson et al. (2010). However, other studies, such as those by Rehbein et al. (2015) and Ferguson et al. (2011), revealed no connection between aggressive behavior among college students or teenagers who were video game addicts. According to the findings of the current study, aggressive behavior and video game addiction are significantly and positively correlated among Gen Z students attending private institutions in Sri Lanka. The video game addiction beta value and t-statistic confirm the results of earlier studies that revealed a positive association between video game addiction and aggression (Anderson et al., 2010), by indicating a strong and statistically significant influence on aggressive behavior. The current study did not discover a moderating effect of playing time on the relationship between aggression and video game addiction. Playing time has no discernible effect on aggressive behavior, according to the beta value and t-statistic obtained in this study, which is consistent with research by Ferguson et al. (2011), who found no link between playing time and violent behavior.

In conclusion, this study adds to our understanding of how aggressive behavior among Gen Z students in Sri Lankan non-state universities is impacted by video game addiction. According to the research, there is a strong link between video game addiction and aggressive behavior.

07. Conclusion

This study found that playing time has no moderating influence on the association between aggressive behavior and video game addiction in Gen Z students attending non-state universities in Sri Lanka. This suggests that regardless of the amount of time spent playing games, the effect of video game addiction on aggressive behavior is constant. In other words, the duration of games has no influence on the negative impacts of video game addiction on aggressive behavior. The lack of a significant moderating effect from playing time suggests that other variables, such as game content, individual psychological make-up, and the environment in which gaming occurs, may have a greater impact on the relationship between video game addiction and aggressive behavior. To fully comprehend the complex procedures at work in video gaming, future studies should delve deeper into these elements. In addition to studying the impact of video game addiction on aggressive behaviors among Gen Z non-state university students in Sri Lanka, it would be beneficial for future researchers to expand their scope and include other generations, such as Generation Alpha, in their studies. By doing so, researchers can gain a more comprehensive understanding of the prevalence and effects of video game addiction across different age groups and generations.

This study used self-reported data, which could introduce bias and effects related to social desirability. Participants may have underreported their video game use or aggressive behavior

due to social pressure or perceived stigma. The validity of the findings is totally dependent on how effectively we can understand and analyze the existing data set and explore major difficulties because this study does not use the qualitative method to obtain a richer analysis. However, it sheds light on the connection between aggressive behavior among Gen Z non-state university students in Sri Lanka and video game addiction and playing time. Interventions must focus on both the overall levels of addiction and the content and context of gaming experiences to better address the issue of aggressive behavior linked to video game addiction.

In conclusion, this study adds to the body of literature in the area by revealing that the amount of time spent playing video games does not affect the association between that behavior and aggressiveness among Sri Lankan students attending private universities. Further investigation is required to examine additional moderators and elements which might affect this association in various populations. We can create effective solutions to address the harmful effects of video game addiction on aggressive behavior and encourage healthy gaming habits by developing a deeper knowledge of the underlying mechanisms of gaming and aggressive behavior.

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