*Innoeduca. International Journal of Technology and Educational Innovation*
Vol. 10. No. 1. Junio 2024 - pp. 124-143 - ISSN: 2444-2925 DOI: https://doi.org/10.24310/ijtei.101.2024.17082



# Students' usage of Over-the-top (OTT) streaming platforms affecting their academic and socio-demographic profile

## *Uso de plataformas de streaming Over-the-top (OTT) por parte de estudiantes y su efecto en su perfil académico y sociodemográfico*

RECEIVED 26/06/2023 ACCEPTED 13/10/2023 PUBLISHED 01/06/2024

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## ABSTRACT

As the world is reeling under the effects of the COVID-19 pandemic, most people have faced the shift to online modes of communication in spheres like education, work from home and even entertainment. Students turned to over-the-top (OTT) platforms in order to relax and relieve stress. The present study attempts to measure the usage of OTT platforms and its effect on students' academic lives concerning academic performance, concentration and productivity, health issues, time-management, and their socio-demographic profile. The study employed explanatory descriptive research designs and sent out instruments measuring usage of OTT and other variables to 800 students across India. The study obtained 535 successful responses from the students pursuing 11th grade to post-graduation. Data analysis included descriptive statistics, parametric t-test, ANOVA and MANOVA. The study revealed that students used OTT platforms extensively for entertainment. Descriptive data gave a detailed account of their academic lives during the COVID-19 crisis. Usage of OTT affected their academic performance, concentration and productivity, health and time management. The study recommends future researchers to find the positive and negative effects of OTT usage on the youth in the post-pandemic scenario.

KEYWORDS Academic performance; Demographic-predictors; Over-the-top platform; OTT.

## RESUMEN

Mientras el mundo se tambalea bajo los efectos de la pandemia COVID-19, la mayoría de las personas se han enfrentado al cambio hacia modos de comunicación en línea en esferas como la educación, el trabajo desde casa e incluso el entretenimiento. Los estudiantes recurrieron a plataformas over-the-top (OTT) para relajarse y aliviar el estrés. El presente estudio

intenta medir el uso de plataformas OTT y su efecto en la vida académica de los estudiantes en relación con el rendimiento académico, la concentración y la productividad, los problemas de salud, la gestión del tiempo y su perfil sociodemográfico. El estudio empleó diseños de investigación descriptivos explicativos y utilizó instrumentos que miden el uso de OTT y otras variables a 800 estudiantes de toda la India. El estudio obtuvo 535 respuestas exitosas de los estudiantes que cursaban desde el 11º grado hasta el posgrado. El análisis de datos incluyó estadística descriptiva, prueba t paramétrica, ANOVA y MANOVA. El estudio reveló que los estudiantes utilizaban ampliamente las plataformas OTT para entretenerse. Los datos descriptivos dieron cuenta detallada de su vida académica durante la crisis de la COVID-19. El uso de OTT afectó a su rendimiento académico, concentración y productividad, salud y gestión del tiempo. El estudio recomienda a futuros investigadores encontrar los efectos positivos y negativos del uso de OTT en los jóvenes en el escenario pospandémico.

PALABRAS CLAVE Rendimiento académico; Predictores demográficos; Plataforma over-the-top; OTT.

## 1. INTRODUCTION

There have been several major behavioural and lifestyle changes for all people during the COVID-19 pandemic (Gupta, & Singharia, 2021). Society adopted online modes of communication in most spheres, such as education, workplace and even for entertainment (Potdar, & Aradhya, 2021). Educational institutions conducted classes online to maintain continuity in education (UNICEF, 2020). Students and the academic community in general were also subjected to this sudden change. In-person classes were discontinued and institutions realised that online learning should not be viewed as an option but as a necessity (Dhawan, 2020). Online learning, video-conferencing and video-streaming platforms became popular to support the crisis time (Buheji, & Ahmed, 2020). Nevertheless, platformisation of higher education faced several challenges (Garcia, 2023). "Over-the-top" platforms, abbreviated as OTT, refers to the distribution of video contents over a public network (Madhani, & Nakhate, 2020). It includes subscription-based video-on-demand (SVoD) services, such as Netflix, Hulu and Amazon Prime. Considering the increase in the usage of these services, several companies like Netflix and Amazon Prime began creating their own video content. Studies prior to the pandemic reported that the students these days are spending more time on digital devices and virtual spaces than in outdoor entertainment (Stiglic, & Viner, 2019). COVID-19 restrictions further enhanced the usage of digital entertainment. There has been a surge in consumption of digital entertainment (Mosanya, 2020). While emphasising that students should be future ready, they should be allowed to live in the present (Ben-Arieh, & Frønes, 2007), even as balancing their social, emotional and intellectual well-being is important. The COVID-19 pandemic has changed the mode of educational instruction (Potdar, & Aradhya, 2021). In-person classes were discontinued, while online classes through video conferencing platforms (Buheji, & Ahmed, 2020) became the new normal (World Economic Forum, 2020). Remote teaching and learning became common in academia across countries in the world (UNICEF, 2020). Students found themselves satisfied when they learnt from videos (Pattier, & Ferreira, 2022). Potdar and Aradhya (2021) while investigating virtual education facilities in India, found the usage of SWAYAM and educational satellite (EDUSAT) programmes supporting the students.

### 1.1. Literature Review

Dhawan (2020) conducted a SWOC analysis of online learning during pandemic and reported that online learning is here to stay and we need more Ed-tech platforms for education. However, students are not positively inclined towards online teaching-learning (Ullah et al., 2017). Further, poor internet bandwidth, less peer interaction and lack of technology knowledge are the issues with online teaching (Muthuprasad et al., 2021) and both parents and students showed anxiety towards longer screen-time (Harjule et al., 2021). During lockdown, Ghode (2020) found that media consumption behaviour among students and working professionals are the same with a different purpose. Further, OTT viewership considerably increased (Gupta & Singharia, 2021; Madnani et al., 2020; Madnani, & Nakhate, 2020). Rigby et al. (2018) reported that viewers preferred using OTT in the evening 7 to 11 p.m. and students are gratifying themselves watching live streaming content. Students might get addicted to OTT platforms and end up in a vicious cycle. Systematic review of literature by Flayelle et al., (2020) revealed that there is no clear definition for binge-watching. However, Castro et al. (2021) reported that students binge-watched a minimum of two full episodes of the same TV show. Overuse of OTT platforms led students to stay isolated (Mosanya, 2020).

People subscribe to OTT platforms for either pleasurable or meaningful entertainment (Oliver, & Raney, 2011). Meaningful entertainment teaches moral virtues (Oliver et al., 2012) and provides opportunities to learn about life (Wirth et al., 2012). However, there are several drawbacks to these platforms. Meier et al., (2016) explored the phenomenon of 'Facebocrastination', leading to procrastination of academic tasks and sleep (Kroese et al., 2016) by students. Watching movies late night gives a good feeling (Nauts et al., 2019). Well-being is important for students to lead happy lives. Hope et al. (2014) revealed that students who were highly self-compassionate wanted their goals to be personally meaningful. Self-compassion comes by aligning one's priorities with their values - be it a happy hour with friends or watching Netflix (Moran, & Ming, 2020). Farrukh et al. (2021) reported negative correlation between media consumption and students' well-being and academic achievement.

The increase in OTT subscriptions and its consumption by students regularly for longer hours, ignoring academic and personal hygiene, is crucial. Therefore, the present study aims to explore the OTT platform usage on students' health, academic performance, concentration, productivity and time management.

#### 1.1.1. Media's influence on Academic Performance

Mushtaq and Khan (2012) revealed that learning facilities at home and parental guidance positively affects the academic performance of students. Mehmood and Taswir (2013) found that social networking sites distract students and affect their academic performance while helping students' networking. Kotzé and Kleynhans (2013) found that burnout (emotional exhaustion) and resilience were significant predictors of academic performance and further revealed that students who engaged and involved with their academics achieved higher scores. Whereas Poots and Cassidy (2020) showed a negative correlation between academic stress and students' well-being. Since academics forms a major part of students' lives, it is important to understand their attitude and approach. Iskender (2011) discussed how students tend to engage in academic procrastination as a way of avoiding academic commitments. Students often turn to digital entertainment in order to relieve stress. Dandamudi and Sathiyaseelan (2018) found a negative correlation between

binge-watching television and academic GPA. However, the effect of academic achievement on students' well-being was relatively small (Bücker et al., 2018). Thus, it is clear that academic performance was not the sole determinant of a student's happiness and satisfaction. In addition, Neff et al. (2005) emphasised the mastery of a subject rather than academic performance.

### 1.1.2. Media and Socio-demographic profile

The shift to online modes of learning and working has challenged the concentration and productivity of people. Students are now more vulnerable to distractions as digital media platforms like YouTube and Instagram are just a click away (Gillick & Magoulias, 2020). Factors such as lack of interest, motivation to learn and indiscipline are affecting online classes (Muthuprasad et al., 2021). However, the research carried out by Hofmann et al. (2012) reported that the effect of media as a tool to regulate students' desire and factors such as low cost and easy access to various entertainment platforms make media use appealing but lack of self-control is the reason for people remaining attached to media platforms. Rusz et al. (2020) found that platforms like Netflix avert students' attention from their academics. Interestingly, Gill et al. (2012) demonstrated how notifications and alerts are a source of distraction and thus affect one's concentration. Kubey and Csikszentmihalyi (2002) traced that students find it more difficult to concentrate on their work after watching video content. Nevertheless, Vaterlaus et al. (2019) report that some students motivate themselves to complete work quickly in order to binge-watch content afterwards as a reward.

Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (Callahan, 1973). Binge-watching at night could lead to lack of sleep (Oberschmidt, 2017) and increased fatigue (Exelmans, & Van den Bulck, 2017). Headaches, eyestrain and loss of sleep are some of the many consequences of time spent in binge-watching (Gangadharbatla et al., 2019). Although watching OTT content is a way of coping with stress and negative moods, it actually makes students sleep deprived, which in turn affects their cognitive ability to deal with challenges (Sirois et al., 2019). Moran and Ming (2020) highlighted the importance of Acceptance and Commitment Theory (ACT) as well as using a Mindful Action Plan (MAP) to cope with stress amid pandemic. Neff et al. (2005) revealed that students exhibiting self-compassion have lower anxiety levels. Zhang et al. (2016) found UG students possessing better self-compassion. Research on students' time management is becoming more popular as a topic of research (Wray-Lake et al., 2020) as today's youth spend more and more of their leisure time on digital devices and virtual spaces (Best et al., 2014; Stiglic, & Viner, 2019). Feijter et al. (2016) found that time spent watching content depended on the amount of free time the youth had. Time spent watching videos plays an instrumental role on one's emotional well-being.

There are different views on the nature of OTT consumption. Castro et al. (2021) found that binge-watching is usually an individual activity that is mostly performed at night and the preferred device is a laptop. On the other hand, Vaterlaus et al. (2019) indicated that binge-watching helps students to connect with peers and partake in conversations about popular culture. This may allow students to spend more time with friends and peers by facilitating social interaction. Nevertheless, the COVID-19 pandemic has drastically altered people's media usage and consumption habits, as most people are forced to stay at home (Patel et al., 2020). Walton-Pattison et al. (2018) suggested that students should practise effective time management to ensure that they have adequate time to pursue productive goals.

Leonhardt and Overå (2021) found that boys pursue more online gaming, a popular activity, while girls use more social media than video gaming. Students addicted to gaming spend 15 to 21 hours per week on it (Rebecca-Clark, 2023). Ali et al. (2021) indicated that boys mainly use social media for communication and interaction, while girls use it for education. Vall-Roqué et al. (2021) found a significant positive relationship between Instagram accounts that focus on appearance and low self-esteem, body dissatisfaction and a desire to be thin among young women. Attention and motivation are significant predictors of academic performance (Barton et. al., 2018). Although virtual learning is helpful and provides additional inputs, social media usage leads to lower efficiency among students in higher education (Lacka et al., 2021). Nevertheless, there is an association between smartphone addiction, poor sleep quality and low academic performance among university students (Rathakrishnan et al., 2021). Braghieri et al. (2022) revealed that usage of Facebook results in poor mental health, leading to depression and decreased academic performance, along with higher utilisation of mental health support services. Hudimova (2021) examined young users' patterns of social media usage and found that they spend more time on social media as a method to avoid bad thoughts during the pandemic. Additionally, uncontrolled use of social media leads to sleep disorders, anxiety, depression and feelings of isolation. Pavlikova et al. (2021) found social media influencing students' well-being during the pandemic with regard to their personal interest, interpersonal communication, motivation, online education and entertainment.

### 1.1.3. Theoretical framework

The Theory of planned behaviour (TPB), Media dependency theory (MDT) and Uses and gratification theory (UGT) have guided the present study. Planned behaviour theory guided the study in analysing how students formulate their attitude towards using OTT for their entertainment. What kind of subjective norms have they considered? What is their perceived behavioural controls while they decide to watch OTT consciously (Ajzen, 1991)? Moreover, students' OTT usage behaviour comes from their positive beliefs about the behaviour itself. Further, Media dependency theory supports the present study in understanding why students subscribe to a particular OTT channel. Is educational or entertainment content enough to satisfy them? How are their socio-emotional drives satisfied. The implication from Media dependency theory and the present study describe that if students meet their needs through any social media, they value it the most and it becomes an important part of their lives (Ball-Rokeach, & DeFleur, 1976). Thus, students started using the OTT platforms extensively during the Covid-19 pandemic, which has affected their academic lives both positively and negatively. The Uses and Gratification Theory helps researchers understand how the usage of OTT gratifies students' needs, how channels satisfy their entertainment needs and which ones satisfy their academic requirements. How could these be utilised by educators in teaching and learning? OTT platforms cater to the needs of today's youth and gratify them as and when they watch OTT content (Menon, 2022).

## 1.2. Research Question

From the review of literature, it is clear that the Covid-19 crisis has led students to use the media to entertain and educate themselves. Technological gadgets, Internet and media channels attracted youngsters more towards entertainment than education. In addition, restrictions imposed due to Covid-19 further affected

students' academic lives. Therefore, the present study framed the following research question: What effect does the daily use of OTT platforms have on the academic lives of students?

### 1.3. Research Objectives

The pandemic context reinforced students to spend more time online, with social media and on OTT platforms, causing both positive and negative effects on their student lives and academic performance. Therefore, in order to address the questions raised above, researchers wished to inquire and report facts affecting the socio-demographic profiles and academic performance of students, thus framing the following research objectives for the present study.

- To determine the most preferred OTT channel by students and to reveal the purpose of consuming OTT platforms.
- To describe the statistical frequency and percentage of students' demographic profiles within the samples selected for the study.
- To determine whether there are any differences in dependent variables (academic performance, concentration and productivity, health issues, time management, OTT usage) between students' gender (male and female), type of family (nuclear and joint), and type of OTT platforms they use (free and paid subscription).
- To determine whether there are any main and interaction effects between dependent variables (academic performance, concentration and productivity, health issues, time management) and categorical independent variables (age, socio-economic-status (SES), education and academic performance percentage level).

## 2. METHOD

### 2.1. Study design

The present study employed explanatory descriptive research design. As a review of literature brings limited and mixed understanding of social media usage affecting students' life in the pandemic crisis time, the study addresses the research question through a descriptive quantitative approach and involved data measuring socio-demographic profile of the students.

### 2.2. Participants

The study employed a convenient sampling technique to collect the data due to various Covid-19 restrictions imposed by the local government. Asample of the study included 535 students, out of which 282 were boys and 253 were girls. They were pursuing their studies in pre-university college, undergraduate (UG) and postgraduate (PG) programmes across India during Covid-19, when there was a lockdown and therefore their teaching was held online.

### 2.3. Data collection procedure

The study collected data in two phases. Phase-1 data collection included pilot study data on a small sample to establish the reliability of the instrument used. The section heading, 'Instrument below', presents a detailed discussion of the Phase-1 data analysis and results.

Phase-2 data collection included the final field data. Researchers sent out the survey questionnaire on a Google form to 800 students and obtained 535 successful responses, out of which 282 were from boys and 253 were from girls. The survey included informed consent, demographic details and items pertaining to students' academic lives, which had components pertaining to academic performance, health, concentration and productivity, time management and usage of OTT platforms. Researchers cleaned the excel data sheet obtained from the Google form and stored it safely in a password-protected file.

### 2.4. Data analysis procedure

Researchers analysed the pilot study data to find the reliability of the questionnaire. The study employed confirmatory factor analysis and Cronbach alpha reliability statistics. Further, it imported the filed data stored in an excel sheet to SPSS software (version-24). Researchers conducted descriptive analysis, independent sample t-tests, one-way ANOVA, and MANOVA tests to check each of the research objectives framed in the study.

### 2.5. Ethical considerations

The study sought permission from the research-conduct-ethics-committee (RCEC) from the University to carry out the present study. It took informed consent from the participants during the survey. The questionnaire had informed consent at the beginning. Only upon agreeing to the consent form can the participants respond to the survey. The minor participants had to fill in additional consent forms from their parents. Researchers ensured the anonymity of the data collected to the entire range of participants with a declaration at the beginning, including the privilege to withdraw from responding to the survey at any point of time by the participants, if they found themselves not comfortable responding to the questions. Researchers stored the data collected in a password-protected file and made it available only to the researchers to ensure data safety.

### 2.6. Instrument

Researchers constructed a questionnaire on the academic lives of students, which included items pertaining to their academic performance, health, concentration and productivity, time management, and usage of OTT platforms with a 5-point Likert type scale. The ratings varied from strongly disagree to strongly agree. Researchers established the face and content validity of the constructed questionnaire by taking opinions from a panel of experts in the field. Researchers administered the constructed questionnaire on a sample of 50 students to establish reliability. Exploratory factor analysis with principal axis factoring and varimax rotation provided five factors whose Eigen values were greater than one and were titled as academic performance, health, concentration and productivity, time management, and usage of OTT platforms. Table 1 below presents the factor analysis results. Cronbach's alpha test computed the internal consistency value of the questionnaire and was 0.788, which indicated that the questionnaire was highly reliable.

**TABLE 1.** Showing the results of the exploratory factor analysis.

| Total Variance Explained | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Factor | Initial Eigen values | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings | | |
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 6.277 | 24.141 | 24.141 | 5.745 | 22.095 | 22.095 | 3.125 | 12.019 | 12.019 |
| 2 | 3.399 | 13.072 | 37.213 | 2.843 | 10.936 | 33.031 | 2.652 | 10.200 | 22.219 |
| 3 | 1.430 | 5.500 | 42.713 | .848 | 3.263 | 36.294 | 2.612 | 10.045 | 32.264 |
| 4 | 1.363 | 5.242 | 47.955 | .747 | 2.872 | 39.167 | 1.347 | 5.180 | 37.444 |
| 5 | 1.068 | 4.108 | 52.063 | .458 | 1.762 | 40.929 | .906 | 3.485 | 40.929 |
| 6 | .996 | 3.830 | 55.892 | | | | | | |
| 7 | .927 | 3.567 | 59.459 | | | | | | |
| 8 | .882 | 3.391 | 62.850 | | | | | | |
| 9 | .794 | 3.053 | 65.903 | | | | | | |
| 10 | .761 | 2.928 | 68.831 | | | | | | |
| 11 | .698 | 2.684 | 71.515 | | | | | | |
| 12 | .689 | 2.652 | 74.166 | | | | | | |
| 13 | .673 | 2.590 | 76.756 | | | | | | |
| 14 | .634 | 2.438 | 79.194 | | | | | | |
| 15 | .603 | 2.318 | 81.513 | | | | | | |
| 16 | .571 | 2.198 | 83.711 | | | | | | |
| 17 | .528 | 2.033 | 85.743 | | | | | | |
| 18 | .498 | 1.916 | 87.659 | | | | | | |
| 19 | .487 | 1.875 | 89.533 | | | | | | |
| 20 | .455 | 1.752 | 91.285 | | | | | | |
| 21 | .449 | 1.727 | 93.012 | | | | | | |
| 22 | .426 | 1.637 | 94.649 | | | | | | |
| 23 | .396 | 1.521 | 96.170 | | | | | | |
| 24 | .357 | 1.374 | 97.544 | | | | | | |
| 25 | .331 | 1.272 | 98.816 | | | | | | |
| 26 | .308 | 1.184 | 100.000 | | | | | | |

Extraction Method: Principal Axis Factoring

## 3. RESULTS

In order to address the research questions raised and the subsequent research objectives framed for the study, researchers conducted descriptive analysis, independent sample t-test, one-way ANOVA and MANOVA tests on the collected data. The following paragraphs present the results of these statistical analyses.

Figure 1 below shows the percentage of students using different OTT platforms. As per the figure, Hotstar (71.80%) is the most used platform followed by Amazon prime (53.60%), Netflix (44%) and Hotstar (32%).

**FIGURE 1.** Percentage of users of OTT platforms.

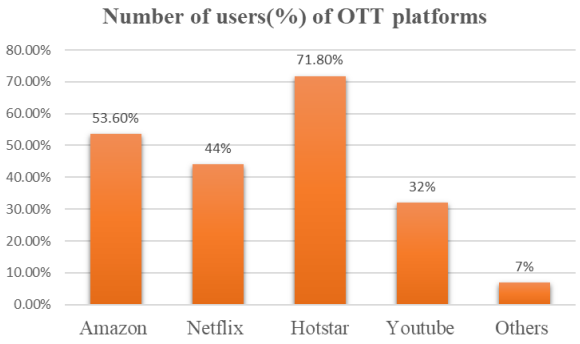


**FIGURE 2.** Reason for watching OTT platforms.

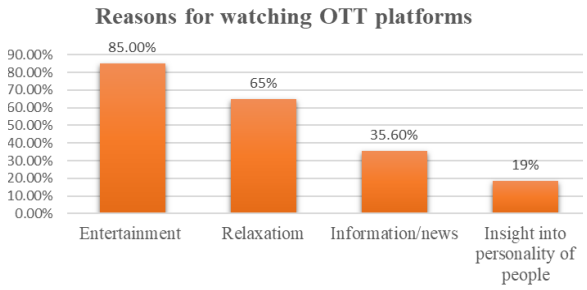


Figure 2 shows the reasons for students watching OTT platforms. It shows that most of the students were watching for the sake of Entertainment (85%) followed by Relaxation (65%), Information/News (35.6%) and Insight into the personality of people (18.5%).

## 3.1. Descriptive statistics

**TABLE 2.** Frequencies of demographic variables of the study.

| | | | |
|---|---|---|---|
| **Gender** | Male | 282 | 52.7% |
| | Female | 253 | 47.3% |
| **Age** | 16-20 | 264 | 49.3% |
| | 21-25 | 213 | 39.8% |
| | >25 | 58 | 10.8% |
| **Family type** | Nuclear family | 408 | 76.3% |
| | Joint Family | 127 | 23.7% |
| **Socio-Economic Status** | Upper class | 45 | 8.4% |
| | middle class | 427 | 79.8% |
| | lower middle class | 63 | 11.8% |
| **Education** | Pre-university college/11/12 | 150 | 28.0% |
| | UG | 264 | 49.3% |
| | PG | 85 | 15.9% |
| | Professional Certification | 36 | 6.7% |
| **Aggregate Academic Percentage** | <60% | 20 | 3.7% |
| | 60% -70% | 105 | 19.6% |
| | 70% - 80% | 193 | 36.1% |
| | >80% | 217 | 40.6% |
| **Type of OTT used** | Free | 212 | 39.6% |
| | Subscribe | 323 | 60.4% |
| **Hrs of usage of OTT /day** | <1hr | 83 | 15.5% |
| | 1-3hr | 291 | 54.4% |
| | 4-6hrs | 126 | 23.6% |
| | >6hrs | 35 | 6.5% |

From the Table 2 above, it was clear that most of the respondents who took part in the survey were from nuclear families and 80% of students were from middle class families. The participants' gender representation was almost equal, with their ages ranging from 16 to 28 years with almost 50% below 21 years. About 49% of the respondents were studying in undergraduation and most of the students secured an average of 60% to 70% in their academics. Many of the respondents preferred subscription-based OTT platforms over free OTT platforms. With regard to the duration of use, more than half the respondents (54.4%) indicated that they used OTT platforms for 1-3 hours per day.

## 3.2. Independent sample t-test

Researchers conducted independent sample t-tests to check whether there were any statistically significant differences in dependent variables (academic performance, concentration and productivity, health issues, time management, OTT usage) between students' gender (male and female), type of family (nuclear and joint) and the type of OTT platforms they used (free and paid subscription). Table 3 below presents the results of independent sample t-tests.

**TABLE 3. Results of independent sample t-tests for all dependent and three independent variables.**

| | Academic performance | | Concentration & productivity | | Health issues | | Time management | | OTT usage | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *t* value | .Sig | *t* value | .Sig | *t* value | .Sig | *t* value | .Sig | *t* value | .Sig |
| **Gender** | 0.414 | 0.679 | 1.548 | 0.122 | 2.734 | 0.006 | 1.679 | 0.094 | 5.323 | 0.000 |
| **Type of Family** | -0.709 | 0.479 | 0.915 | 0.361 | 1.081 | 0.280 | 0.937 | 0.349 | 0.713 | 0.476 |
| **Type of OTT use** | -0.020 | 0.984 | 0.195 | 0.845 | 0.167 | 0.867 | 0.817 | 0.414 | -2.454 | 0.014 |

From Table 3, it is clear that there is a significant difference in the health issues and OTT usage between boys and girls. Boys' health issues are more in number than the girls' (M boys 15.19 > M girls 14.37) and similarly, Boys' OTT usage is more than girls' (M boys 20.80 > M girls 19.30). The type of family did not show any differences in any of the dependent variables. The type of OTT subscription also did not show any significant differences in any of the dependent variables, except the usage in OTT. The paid subscribers' OTT usage is more than the free subscribers' (M Paid 20.37 > M Free 19.66).

## 3.3. One-way ANOVA

Researchers conducted one-way ANOVA statistical tests to check whether there were any statistically significant main effects and interaction effects between dependent variables (academic performance, concentration and productivity, health issues, time management) and categorical independent variables (age, socio-economic-status (SES), education and academic performance percentage level), which had 3 sub-groups. Table 4 below presents the results of the one-way ANOVA.

**TABLE 4.** One-way ANOVA result for four dependent variables and four independent variables.

| | Academic performance | | Concentration and productivity | | Health issues | | Time management | |
|---|---|---|---|---|---|---|---|---|
| | F value | Sig. | F value | Sig. | F value | Sig. | F value | Sig. |
| **Age** | 1.528 | 0.218 | 1.791 | 0.168 | 1.942 | 0.144 | 0.042 | 0.959 |
| **Socio-economic status** | 2.070 | 0.127 | 4.060 | 0.018 | 0.633 | 0.531 | 3.342 | 0.360 |
| **Education level** | 0.398 | 0.754 | 0.226 | 0.879 | 0.968 | 0.407 | 1.018 | 0.384 |
| **Academic performance level** | 3.495 | 0.016 | 0.883 | 0.449 | 0.588 | 0.623 | 1.048 | 0.371 |

From Table 4, there exists a significant main effect on concentration and productivity of students based on different SES groups (F = 4.060, p = 0.018). Similarly, there exists a significant main effect on academic performance of students based on different academic performance percentage levels (F = 3.495, p = 0.016). Further, there are no main effects on any of the remaining variables.

## 3.4. Multivariate analysis

Researchers conducted multivariate statistical tests to check whether there are any statistically significant main effects and interaction effects between dependent variables (academic performance, concentration and productivity, health issues, and time management) and an independent variable (levels of OTT usage as low, average and high). Table 5 below presents the results of multivariate analysis.

**TABLE 5.** Tests of between-subject effects of levels of OTT usage and dependent variables.

| Source | Dependent Variable | Type III Sum of Squares | *df* | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| **Corrected Model** | Academic performance | 27.745[a] | 2 | 13.873 | 34.648 | .000 |
| | Concentration and productivity | 12.293[b] | 2 | 6.146 | 15.479 | .000 |
| | Health issues | 43.063[c] | 2 | 21.532 | 33.055 | .000 |
| | Time management | 53.582[d] | 2 | 26.791 | 38.339 | .000 |
| **Intercept** | Academic performance | 4606.434 | 1 | 4606.434 | 11504.890 | .000 |
| | Concentration and productivity | 4366.361 | 1 | 4366.361 | 10996.524 | .000 |
| | Health issues | 4065.219 | 1 | 4065.219 | 6240.969 | .000 |
| | Time management | 4245.976 | 1 | 4245.976 | 6076.144 | .000 |
| **OTT** | Academic performance | 27.745 | 2 | 13.873 | 34.648 | .000 |
| | Concentration and productivity | 12.293 | 2 | 6.146 | 15.479 | .000 |
| | Health issues | 43.063 | 2 | 21.532 | 33.055 | .000 |
| | Time management | 53.582 | 2 | 26.791 | 38.339 | .000 |
| **Error** | Academic performance | 213.007 | 532 | .400 | | |
| | Concentration and productivity | 211.240 | 532 | .397 | | |
| | Health issues | 346.532 | 532 | .651 | | |
| | Time management | 371.759 | 532 | .699 | | |
| **Total** | Academic performance | 6311.640 | 535 | | | |
| | Concentration and productivity | 5885.200 | 535 | | | |
| | Health issues | 5587.520 | 535 | | | |
| | Time management | 5883.280 | 535 | | | |
| **Corrected Total** | Academic performance | 240.752 | 534 | | | |
| | Concentration and productivity | 223.532 | 534 | | | |
| | Health issues | 389.595 | 534 | | | |
| | Time management | 425.341 | 534 | | | |

a. R Squared = .115 (Adjusted R Squared = .112), b. R Squared = .055 (Adjusted R Squared = .051)
c. R Squared = .111 (Adjusted R Squared = .107), d. R Squared = .126 (Adjusted R Squared = .123)

The study found Wilk's Lambda value equal to 0.033 for multivariate analysis that was almost close to zero. It meant that the independent categorical variable (levels of OTT usage) contributed more to the discriminant function. From the Table 5 it was clear that levels of OTT usage significantly accounted for variations in (all dependent variables) the academic performance, concentration and productivity, health issues and time management ($p < 0.05$).

## 4. DISCUSSION

The study revealed that there had been an extensive use of OTT by student groups studying in various levels of education for entertainment purposes. Demographic characteristics of students revealed some interesting facts. Most of them were from middle class families, had paid OTT connections and watched OTT from 1 to 3 hours a day. This may be due to Covid-19 lockdown restrictions and online classes. Further, boys' OTT usage was more than girls'. In India, boys are relatively freer from household work than girls and talking to their peer groups about what they watched is prevalent. Popular culture reinforces them to watch OTT regularly. Girls in India usually indulged more in household work, irrespective of their educational level. Further, girls were traditionally backed up by their choices on episodes broadcast from OTT platform channels. Today, parents and teachers must make an effort to engage boys in many other curricular and co-curricular activities to reduce their OTT usage. In addition, OTT usage is more among paid subscribers than free ones, as the paid OTT platforms show the youths' favourite channels and aids them in maintaining their popular culture.

The study found that levels of socio-economic status affected their productivity and concentration. Perceived employment ambiguity among the people due to the pandemic and attritions from various employers disturbed their livelihood. The students could not concentrate on their studies and found themselves unproductive at the end of the day. The analysis of the present study revealed that students' productivity and concentration declined as their usage of OTT platforms increased. Students found themselves distracted by notifications, which disturbed their concentration (Gill et al., 2012). Further, the desire to use platforms like Netflix averted their attention from their studies, leading to low productivity in their learning (Rusz et al., 2020). Similar to the findings of Kubey and Csikszentmihalyi (2002), students found it difficult to maintain the same level of concentration and productivity after watching OTT content. In agreement with the findings by Vaterlaus et al. (2019), the students also admitted that they were motivated to complete their work quickly, in order to reward themselves with time to use OTT platforms. This recommends the introduction of systems that alert viewers when they have spent excessive time on the platform. Further, parents and teachers may find useful programmes on OTT, such as yoga, meditation, physical exercise and educational channels and could have encouraged the children to watch those, rather than leaving it to their choice.

The study observes that there is variation in obtained academic percentage among students and one of the reasons could be introduction of online assessments and examinations, which both teachers and students are not so familiar with. This implies the importance of providing appropriate training and support to educators in adapting to online learning environments. Increased usage of OTT platforms led to a decrease in students' academic performance. Watching video content on these platforms made students less interested in their academics and led to a decline in their marks scored. These results were in line with the findings

of Dandamudi and Sathiyaseelan (2018), who found that there were negative consequences on academics due to excessive watching of television. Contradicting this, Farrukh et al. (2021) found a positive correlation between entertainment media and academic achievement. This was evident, as recent research studies reported a learning loss.

Overall, OTT usage among students contributed to variations in their academic performance, concentration and productivity, health issues, and time management. However, a recent study revealed students' positive attitude towards online learning (Eseadi, 2023). As students sat for online classes for the first time for longer hours, screen time created fatigue and stress. They found it difficult to manage their time for online classes, assignments, study time and entertainment. Contradicting this, there is a positive relationship between digitised content in a distance-learning programme (Onyekwere, & Hoque, 2023). Additionally, the results pointed out that due to usage of OTT, students were not able to manage time in such a way that allowed them to develop skills, pursue hobbies and socialise with friends. This implied sheer negligence on the increased usage and lack of control over the time spent on social media and OTT platforms. It is suggested that platforms introduced a system that alerted viewers when they have spent too much time on the platform. As watching OTT content was an individual activity, students found themselves spending more time alone and not socialising with friends. This contradicted the results of Vaterlaus et al. (2019), who found that binge-watching allowed young people to connect over pop culture topics and thus facilitated social interaction. Routine, restricted lifestyles led to frustration and mental ill-health. Thus, we needed to develop awareness campaigns targeting students, parents and educational institutions, about the potential effects of excessive OTT platform usage on academic performance, concentration, productivity and health. However, a recent study revealed a positive correlation between virtual education and health-oriented lifestyles (Sabet et al., 2022).

Findings from the multivariate analysis also indicated that students' health deteriorated because of increased time spent on these platforms. In alignment with the findings of Gangadharbatla et al., (2019), students experienced headaches, eyestrain and loss of sleep because of more time spent watching OTT videos. A recent study also reported that online learning and online meetings negatively affected the students' online learning experiences (Amboy et al., 2023).

However, a study of the present paper also found that students chose to watch OTT content as a way of relieving stress. This coincided with Mosanya (2020), who identified Netflix and other streaming services as supportive factors that helped students deal with the anxiety posed by COVID-19. Due to the pandemic restrictions, students were unable to engage in outdoor activities. This might have turned them to OTT platforms as a way of relieving stress and boredom. The effect of independent variables (levels of OTT usage) was categorised under three clusters: namely, low, average and high. OTT usage's effect on dependent variables in the present study were: almost 14% of the students showed a low effect, 38% had a moderate effect and 48% had a high effect. In other words, OTT usage had moderate to high effects on the dependent variables from the majority of students (86%).

Thus, there is a need to maintain appropriate balance for all activities in a student's life. Too much emphasis on academic performance may come at the cost of health and mental well-being. Students can manage their time more effectively by following a schedule. Thus, in addition to completing their

responsibilities, they can also set aside time for all the things they would like to do, including hobbies, watching movies and meditating. In order to up-skill themselves and use time productively, students are recommended to engage in courses (whether online or offline) on a variety of skills. Finally, the statistical analysis revealed that there is an effect of the usage of OTT platforms on students' academic performance, concentration and productivity, health issues and time management.

### 4.1. Limitations and Recommendations for Further Research

The study identified only the negative effects of excessive OTT usage among students and did not look at the positive effects. The study did not explore potential positive effects or consider other relevant factors that could influence their academic performance and well-being. Further, the study did not explore concrete intervention strategies or recommendations to address the issues and only reported those related to academic performance, concentration and productivity, health and time management. The study did not address the role of individual differences, coping strategies, or social support to understand the excessive OTT usage by students. It included only OTT platform usage, rather than any other social media or internet devices. The study reported the demographic profiles of only a limited number of participants, due to lack of access amid pandemic. The study employed quantitative methods to answer the research question. The sample included a wide range of students from 16 to 25 years. Therefore, age did not determine any variation in the usage of OTT platforms.

Future studies should explore potential interventions that could help students balance their online activities and academic responsibilities effectively. Future studies can include the impact of OTT platforms, social media and internet addiction on the academic performance of students. In addition, smartphone addiction because of the usage of excessive social media apps, such as Snapchat, shorts and Instagram-reels might disturb the psychosocial development of youths, which warrants in-depth qualitative and quantitative research studies to channelise them in the right direction and shape them into productive citizens.

### 4.2. Pedagogical implications

As studies have found an excessive use of OTT platforms by students of all ages, demographic profiles and educational levels, educators and practitioners in the field must reflect on these newer trends and bring in modifications in their approach to teaching, learning and administration, without affecting students' expected educational outcomes and productivity. This could include integrating short media clips relevant to the teaching point for better learning engagement, introducing media literacy to make students understand their positive and negative effects, orienting students on time-management and self-regulation skills, introducing OTT-style formats to provide educational content such as gamified content, modular lessons and interactive content. They could also involve organising socio-emotional well-being classes, including blended or hybrid learning, providing co-curricular and extra-curricular opportunities to discuss their popular culture, assigning media-integrated learning tasks or project works, educating parents on how to handhold their wards at home, utilising authentic assessment methods, evidence-based classroom practices and adopting culturally responsive pedagogies to cater to students from varied demographic profiles.

## 5. CONCLUSIONS

The present research was able to find responses to the objectives of the study as intended. The most preferred OTT channel by students is Hotstar and their purpose of consuming OTT platforms is mainly for entertainment and relaxation, rather than education. The demographic profiles of students within the selected sample was quiet heterogeneous. Although students turned to OTT platforms to get rid of stress and isolation during the pandemic, their usage of OTT platforms affected them negatively. The study used critical paradigms to carry out the present research. Thus, they did not look into the positive aspects of OTT usage for students. The study clearly establishes that cultural context and situational factors influence media usage and makes an impact on students' academic lives. Overall, the analysis indicated that there is an effect of the usage of OTT platforms on students' academic performance, concentration and productivity, health and effective management of their time.

## 6. CONFLICT OF INTEREST

Authors have no competing interest. All authors have made equal contributions to the research work.

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# APPENDIX

| **Academic life** (SDA-Strongly disagree, DA-Disagree, N-Neutral, A-Agree, SA-Strongly agree) | | | | | |
|---|---|---|---|---|---|
| **Academic Performance** | **SDA** | **SA** | **N** | **A** | **SA** |
| There is no change in my academic performance as such because of using the OTT | | | | | |
| I am able to balance my academic work and watching OTT content | | | | | |
| My marks in exams have decreased because I spent more time on watching OTT | | | | | |
| I am more interested in OTT platforms than my online classes and assignments | | | | | |
| Usage of OTT platforms has improved my general knowledge | | | | | |
| **Health** | | | | | |
| I feel tiered or experience eyestrain/ headache/ migraine more frequently due to increased screen time on TV/computer/tabs/smart phone devices | | | | | |
| I do less physical exercise as I spend more time on OTT platforms | | | | | |
| My stress levels have significantly increased due to usage of OTT platforms | | | | | |
| Watching Videos or movies on OTT platforms helps me to reduce stress | | | | | |
| I sleep less because I spend more time on OTT | | | | | |
| **Concentration and Productivity** | | | | | |
| Usage of OTT platforms has improved my general knowledge | | | | | |
| My concentration levels have declined due to usage of OTT platforms | | | | | |
| Good internet connections and a computer/tab/smartphone encourage me to use OTT | | | | | |
| My productivity has reduced due to usage of OTT platforms | | | | | |
| I complete my work quickly to get more time to watch movies/ videos on OTT | | | | | |
| **Time management** | | | | | |
| I spend less time with my family because I watch OTT content alone for a long time | | | | | |
| I Watch OTT videos/movies with my family members | | | | | |
| I get less time or no time to work on my daily routines | | | | | |
| I get less time or no time to pursue my personal hobbies (reading, cooking, play, etc.) | | | | | |
| I get less time to socialize with friends | | | | | |

| **Usage of OTT** |
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| OTT video contents and characters inspired me to develop my personal skills |
| Due to usage of OTT platforms, I tend to procrastinate my academic work |
| Usage of OTT platforms helps me stimulate my creativity |
| Usage of OTT platforms has made me a more knowledgeable |
| Exposure to OTT content has increased my global awareness |